
Appendix C

At-Risk Species

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Appendix C. At-Risk Species

Introduction

Part of revising the National Forest management plan is to identify federally protected, threatened, endangered, proposed, and candidate species that reside in or have suitable habitats on the Ashley National Forest. The Forest Service responsibility for threatened and endangered species is to work with the U.S. Fish and Wildlife Service and other partners such as state wildlife agencies, to help in the recovery of these species. Similarly, the primary goal for proposed species is to conserve them and their habitat so that Forest Service management actions do not threaten these species in the recovery process. The list of species is determined and maintained by regional Fish and Wildlife Service offices. For the Ashley National Forest, these lists are managed by the Ecological Services office in Salt Lake City, Utah.

In addition to the federally protected species, the Forest Service identifies species of conservation concern. These are typically species that may have smaller numbers or have been trending downward. Therefore, the agency ensures management actions do not impact these species or their habitat, and that viable populations are maintained.

The 2012 Planning Rule defines species of conservation concern as: a species, other than federally recognized as threatened, endangered, proposed, or candidate species, that is known to occur in the plan area and for which the regional forester has determined that the best available scientific information indicates substantial concern about the species' capability to persist over the long-term in the plan area. Substantial concern being defined as some combination of threats either directly to the species or indirectly to the species habitat, their pollinators, or other relevant risk factors." 'Persistence over the long term of planning area' must be thought of as 'continued existence' and needs to be thought of in ecological time. That being the time for the species to disperse, compete, and reproduce on to the longer end of forest succession. So persistence is longer than the 15-year forest planning cycle."

The original list of species of conservation concern considered were generated by the Forest Service's Intermountain Regional Office. This consisted of 96 animal and 81 plant species as potential species of conservation concern for the Ashley National Forest. The following key criteria or questions were considered in the evaluation of species of conservation concern.

- Is the species native to the Ashley or not?
- What is the Global and State status of each species?
- In the past 20 years, how many occurrences and what year was the last occurrence for each species on the Forest?
- Are the species occurrences accidental or transient on the Ashley?
- Is the species established or becoming established on the Ashley?
- What is the distribution, abundance, and trend of the species on the Ashley?
- What threats and risks does the species face on the Ashley?
- What habitat requirement does the species have?
- Is there substantial concern for this species to persist on the Ashley?

Information Sources and Gaps

The Ashley National Forest uses a number of sources to determine National Forest distribution and occurrences. These include Forest Service corporate database, Natural Resource Manager (NRM), NatureServe, Utah Natural Heritage Database, Wyoming Natural Heritage Database, Rocky Mountain Herbarium, Brigham Young University Herbarium, University of Colorado Herbarium, Utah State University – Uintah Basin Herbarium, and Natural Resource Conservation Service (NRCS) Plants Database. Other sources of information were also used such as state level species reports/ Wildlife Action Plans, Birds of North America, A Utah Flora, Uinta Flora, Flora of Wyoming, Intermountain Flora, Flora of North America, and other available information.

Many of the animal species the Forest considered were NatureServe ranks of S1 (critically imperiled) or S2 (imperiled) in Wyoming, or in other words, relatively rare species. That part of the Ashley National Forest, which is located in Wyoming, is limited to the Flaming Gorge National Recreation Area. This popular recreation area is relatively limited in terms of its habitat diversity. Therefore, most of the S1/2 animal species in Wyoming were not recommended for potential species of conservation concern because the Flaming Gorge National Recreation Area does not support the specific species habitat requirements. For more details about any of the species considered as potential species of conservation concern, visit the NatureServe website at <http://explorer.natureserve.org/>.

Threats, risks, and habitat requirements for each species were identified using many of the sources listed above. Species distribution maps in NatureServe, NRCS Plants Database, corporate knowledge and data, plant identification manuals, and plant specimens in herbariums were used to determine if the species was native, as well as if the species is established or becoming established on the Forest.

Abundance and trend for many animal species were difficult to assess because of a lack of information. Animal species were not carried forward if the planning area had few (less than 10) to no occurrences and the species was secure in adjacent states within the species core distribution or primary home range. For species occurrence information, we considered data from both Wyoming and Utah wildlife databases and Forest Service corporate databases. For plant species, abundance and trend data were sufficient to assess all species. Additional criteria were also considered for the plant species assessment. These included:

- margin of range (wide-ranging plant species with limited distribution on the forest)
- contrasting taxonomic treatments (disagreement in distinguishing different types of plants)
- species reaction to disturbance
- existing laws and designations that provide protection
- level of taxonomic (taxonomic?) status

Scale of Analysis

With the primary purpose of this assessment being to assist in revising our Ashley National Forest management plan, we focused our analysis area primarily on the Ashley National Forest. The Ashley National Forest lies within the Duchesne and Upper Green River 4th order hydrologic units. We did consider species distributions in areas adjacent to the Ashley National Forest, as well as regional and global distributions of species. Moreover, we also related species distribution to Ashley National Forest land type associations to better understand and define the relationship between species and their habitat needs.

Table C-1 is a summary of the endangered, threatened, proposed, or candidate species that occur or have suitable habitat on the Ashley National Forest. These species are covered by the Endangered Species Act of 1973, and the Ashley National Forest is mandated to consider potential effects from management to these species. While the Ashley does not have discretion or control of this list, these species are still part of the species at risk assessment for forest plan revision.

Table C-2 presents the list of Regional Forester identified species of conservation concern for the Ashley National Forest.

Table C-3 lists current habitat conditions, trends, and risk factors for threatened, endangered, proposed, and candidate animal and plant species.

Table C-4 lists current habitat conditions, trends, and risk factors for Regional Forester identified species of conservation concern.

Table C-1. Federally Listed Threatened, Endangered, Proposed, or Candidate Animal and Plant Species Identified in the USFWS IPaC List

Scientific Name/ Common Name	Federal Listing Status	Habitat/Landtype Association (LTA)	Observation Information
Mammals			
<i>Lynx canadensis</i> Canada lynx	Threatened	<p>Forested areas, including Engelmann spruce, subalpine fir, lodgepole pine, Douglas-fir, and aspen. Areas of dense understory cover and/or thickets of young trees and mature forests with large amounts of coarse, woody debris.</p> <p>Habitat occurs in the following LTAs: Greendale Plateau, Parks Plateau, Trout Slope, Alpine Moraine, Dry Moraine, Glacial Bottom, North Flank, Round Park, Stream Canyon, Stream Pediment, Wolf Plateau, Avintaquin Canyon, Strawberry Highlands, Glacial Canyon, Limestone Plateau, and South Face.</p>	<p>There are 10 lynx specimens that have been reliably traced to the Uinta Mountains, with collection dates ranging from 1916 to 1972.</p> <p>Between February 1999 and March 2007, 22 lynx from the experimental release in Colorado have been located at least once in Utah. Use density of these locations indicates the primary area of use was in the Uinta Mountains. The majority of use was on the Uinta-Wasatch-Cache National Forest and to a somewhat lesser degree on the Ashley National Forest. All these individual lynx were transient and did not take up residency in the Uinta Mountains. The Ashley National Forest is unoccupied and considered peripheral habitat (Interagency Lynx Biology Team 2013).</p>
Birds			
<i>Strix occidentalis lucida</i> Mexican spotted owl	Threatened	<p>Steep to vertical walled canyons that are greater than 1.2 miles long and less than 1.2 miles wide, and contain pockets of coniferous overstory trees mixed with smaller Gambel oak and box elder trees.</p> <p>Habitat occurs in the Stream Canyon and Glacial Canyon LTAs.</p>	<p>Surveys have been conducted in suitable habitat on the Ashley National Forest; however, there are no records of occurrence on the forest. The species does not exist on the Ashley National Forest.</p>
<i>Coccyzus americanus</i> Yellow-billed cuckoo	Threatened	<p>Nests in lowland riparian habitats (typically in large habitat patches [greater than 200 acres] of cottonwood/willow habitats) with dense understory vegetation of willow and a high foliage volume of cottonwood. Usually within 328 feet of water.</p> <p>Marginal habitat occurs in the Stream Canyon, Glacial Canyon, and Glacial Bottom LTAs.</p>	<p>Surveys have been conducted in suitable habitat on the Ashley National Forest; however, there are no records of occurrence on the forest. The species does not exist on the Ashley National Forest.</p>
Fish			
<i>Gila cypha</i> Humpback chub*	Endangered	<p>Variety of habitats; desert riverine systems usually associated with swift and turbid water. No suitable habitat on the Ashley National Forest.</p>	<p>The species does not exist on the Ashley National Forest.</p>
<i>Gila elegans</i> Bonetail chub*	Endangered	<p>Typically associated with mainstem desert riverine systems; found in the backwaters on these rivers.</p>	<p>The species does not exist on the Ashley National Forest.</p>

Scientific Name/ Common Name	Federal Listing Status	Habitat/Landtype Association (LTA)	Observation Information
<i>Ptychocheilus lucius</i> Colorado pikeminnow*	Endangered	Wide variety of habitats (pools, riffles, and runs) associated with larger desert riverine systems.	The species does not exist on the Ashley National Forest.
<i>Xyrauchen texanus</i> Razorback sucker*	Endangered	Typically associated with mainstem desert riverine systems; typically found in slow-water habitats (backwaters and pools) on these rivers.	The species does not exist on the Ashley National Forest.
Plants			
<i>Lepidium barnebyanum</i> Barneby ridge-cress	Endangered	Found on ridge crests of white shale outcrops in the Uinta and Green River formations at 5,900–6,600 feet in the Indian Canyon drainage.	The species does not exist on the Ashley National Forest.
<i>Phacelia argillacea</i> Clay phacelia	Endangered	Grows on fragile, barren soils on steep hillsides only in Spanish Fork Canyon, Utah.	The species does not exist on the Ashley National Forest.
<i>Spiranthes diluvialis</i> Ute ladies'-tresses	Threatened	Floodplains, streams, and other riparian habitat. Habitat occurs in the Red Canyon LTA.	Four occurrences within the plan area; along the Green River between Little Hole and the Ashley National Forest boundary. Known from below the national forest boundary along the Green, Yellowstone, Uinta, Lake Fork, and Rock Creek Rivers. Most occurrences are small, having less than 1,000 plants and occupying less than 50 acres (Franklin 1992).

*These species are analyzed for downstream effects from water-depletion-related projects.

Table C-2. Regional Forester Identified Wildlife, Fish, and Plant Species of Conservation Concern Located on the Ashley National Forest

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
Birds							
<i>Centrocercus urophasianus</i> Greater sage-grouse	Declining populations and habitat rangewide. Ecological disturbances (climate change, drought, and in some instances predation) and anthropogenic disturbances continue to be a threat to greater sage-grouse and their habitat on the Ashley National Forest.	Sensitive	Species of concern	G3 Utah – S3 Wyoming – S4	Sagebrush and grassland habitat. Habitat is found within the Anthro Plateau, Antelope Flat, Parks Plateau, South Face, Glacial Canyon, Stream Pediment, Avintaquin Canyon, Strawberry Highlands, and Structural Grain LTAs.	Composition and Distribution of Vegetation: Greater sage-grouse habitat is defined in large part by the type of vegetation (sagebrush and grassland) and its distribution on the landscape. Structure Stages of Vegetation: Breeding, nesting, brood rearing, and wintering habitats are defined by the structure stages of vegetation. Patch Size: The size and quantity of habitat patches likely define the quality and quantity of habitat across the landscape. Connectivity of habitats may also be important to greater sage-grouse. Disturbances: Habitat disturbance, such as catastrophic fire and noxious weed infestations, can affect the habitat patch size and quality of sage-grouse habitat on the landscape.	Numerous observations on the Ashley National Forest.

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Falco peregrinus</i> Peregrine falcon	Rangewide, the species is either imperiled or vulnerable. Thus, threats (riparian degradation and noise disturbance to nesting) on the Ashley National Forest may have the potential to affect the species.	Sensitive	No special status	G4 Utah – S3B Wyoming – S2	Riparian habitats that are associated with cliffs. Habitat is found within the Stream Canyon, Glacial Canyon, Red Canyon, and North Flank LTAs.	Composition and Distribution of Vegetation: Peregrine falcon habitat is defined in large part by the type of vegetation (riparian) and its association with nesting habitat (cliffs) on the landscape. Structure Stages of Vegetation: Prey species habitats are defined by the structure stages of vegetation. Patch Size: The size and quantity of foraging habitat patches in relation to cliffs likely define the quality and quantity of habitat across the landscape. Disturbances: Habitat disturbance, such as catastrophic fire and beetle epidemics, can affect the habitat patch size and quality of peregrine falcon habitat on the landscape.	Numerous observations from the few known eyries on the Ashley National Forest.

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<p><i>Leucosticte atrata</i> Black rosy-finch</p>	<p>This species is critically imperiled in Utah and Wyoming, and imperiled or vulnerable in surrounding states where its core distribution occurs.</p>	<p>No Forest Service status</p>	<p>No special status on the Utah Partners In Flight priority species list</p>	<p>G4 Utah – S1 Wyoming – S1B, S2N</p>	<p>Barren, rocky, or grassy areas and cliffs among glaciers and receding snow banks, or beyond timberline. Habitat is found within the Uinta Bollie and Alpine Moraine LTAs.</p>	<p>Composition and Distribution of Vegetation: Black-rosey finch habitat is defined in large part by the type of vegetation (grassy areas in alpine) and its distribution in relation to snowfields and rock. Structure Stages of Vegetation: Prey species (insects) could be defined by the structure stages of vegetation (grass and forbs). Patch Size: The size and quantity of habitat patches likely define the quality and quantity of habitat across the landscape. Connectivity between habitat patches may also be important for this species.</p>	<p>There are 85 known occurrences on the Ashley National Forest within the last 20 years. Occurrences are at high elevations in the associated LTAs.</p>

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
Mammals							
<p><i>Sylvilagus idahoensis</i> Pygmy rabbit</p>	<p>The only known locations of this species on the Ashley National Forest are in the Wyoming portion of the Flaming Gorge National Recreation Area (FGNRA). This species is critically imperiled in Wyoming and either imperiled or vulnerable in the surrounding states where its core distribution occurs.</p>	<p>Sensitive</p>	<p>Species of concern</p>	<p>G4 Utah – S3 Wyoming – S2</p>	<p>Dense stands of big sagebrush growing in deep, loose soils. Habitat and occurrence are within the Green River LTA.</p>	<p>Composition and Distribution of Vegetation: Pygmy rabbit habitat is defined in large part by the type of vegetation (sagebrush and grassland) and its distribution on the landscape. Structure Stages of Vegetation: The quality of habitat is defined by the density and structure stage of big sagebrush. Patch Size: The size and quantity of habitat patches likely define the quality and quantity of habitat across the landscape. Connectivity of these habitat patches may be important to population expansion. Disturbances: Habitat disturbance, including catastrophic fire, can affect the habitat patch size and quality of pygmy rabbit habitat on the landscape.</p>	<p>There are nine known occurrences on the Ashley National Forest within the last 20 years. These occurrences have been in the FGNRA.</p>

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<p><i>Myotis thysanodes</i> Fringed myotis (bat)</p>	<p>This species is imperiled in Utah and Wyoming, and imperiled or vulnerable in surrounding states where its core distribution occurs.</p>	<p>No Forest Service status</p>	<p>Species of concern</p>	<p>G4 Utah – S3 Wyoming – S2, S3B</p>	<p>Middle elevations in desert, riparian, grassland, and woodland habitats. Habitat is found within the Anthro Plateau, Avintaquin Canyon, Strawberry Highlands, Green River, Antelope Flat, North Flank, South Face, Stream Canyon, Glacial Bottom, Glacial Canyon, Stream Pediment, Structural Grain, Wolf Plateau, Parks Plateau, Moenkopi Hills, Limestone Hills, Dry Moraine, Greendale Plateau, and Red Canyon LTAs.</p>	<p>Composition and Distribution of Vegetation: In part, fringed myotis habitat is defined by the type of vegetation (riparian, grassland, and woodland) and its distribution on the landscape. Structure Stages of Vegetation: Roosting can be defined by the availability of larger trees that provide crevices or cavities for roosting. Patch Size: The size and quantity of habitat patches likely define the quality and quantity of habitat across the landscape. Disturbances: This species is likely sensitive to disturbances to their hibernacula and maternity habitat (caves). Other Key Elements: The availability of caves (for hibernacula and maternity colonies) on the landscape is key for the sustainability of this species on the landscape.</p>	<p>There are eight known occurrences on the Ashley National Forest within the last 20 years.</p>

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Ovis canadensis</i> Bighorn sheep	Recent declines in both populations on the Ashley National Forest, primarily due to disease. Ecological disturbances such as conifer encroachment impacting habitat. Predation from mountain lion is a secondary concern.	Sensitive	Species of greatest concern need	G4 Utah – S3? Wyoming – S2, S3	Steep, open habitat types with adjacent rocky areas. This species uses habitat found within the Anthro Plateau, Avintaquin Canyon, Uinta Bollic, Alpine Moraine, North Flank, Greendale Plateau, Red Canyon, and Structural Grain LTAs.	Composition and Distribution of Vegetation: Bighorn sheep prefer open habitat types (high alpine to lower grasslands) with adjacent steep, rocky areas for escape and safety. Habitat is characterized by rugged terrain, including canyons, gulches, talus cliffs, steep slopes, mountaintops, and river benches. Structure Stages of Vegetation: Habitat is associated with early vegetation seral stages and steep slopes. Patch Size: The size and quantity of habitat patches likely define the quality and quantity of habitat across the landscape. Connectivity of habitats may also be important to bighorn sheep. Disturbances: Habitat disturbance, such as wildfire, typically improves bighorn sheep habitat. Other disturbances include conifer encroachment and potential cheatgrass invasion.	Numerous observations: five herds in the Uintas Mountains and one on the South Unit make up the population on the Ashley National Forest.

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
Fish							
<i>Oncorhynchus clarki plueriticus</i> Colorado River cutthroat trout	Without past, current, and ongoing conservation efforts, this species' persistence on the Ashley National Forest is at risk primarily due the presence of nonnative trout.	Sensitive	Conservation agreement species	G4/T3 Utah – S3 Wyoming – S1	Requires cool, clear water and well-vegetated streambanks for cover and bank stability. Habitat is found in various LTAs, including Stream Canyon, Glacial Bottom, Strawberry Highlands, Avintaquin Canyon, Greendale Plateau, and Round Park.	Composition: Instream cover in the form of deep pools, boulders, and logs is important. The species needs spawning gravels free of fine sediment to complete its life cycle. Adapted to relatively cold water; thrives at high elevations. Disturbances: Primarily any sediment-causing activities, such as overgrazing, severe fire, logging, and ATV use. The presence of nonnative species often results in hybridization with Colorado River cutthroat trout and also competition for resources.	Populations exist across the Ashley National Forest.

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
Plants							
<i>Antennaria pulcherrima</i> Handsome pussytoes	Habitat is geographically restricted and rare within the plan area. Two occurrences have been documented within the plan area (Huber 2016).	None	Peripheral	G5 Utah – S1 Wyoming – S2	Intermediate to rich fens and wet meadows. Alpine Moraine LTA.	Rich or calcareous fens meet the definition of a rare and specialized habitat in the forest plan assessment. Geologically, these are restricted to wetlands underlain by limestone or fed by calcium-rich water, or both. Such fens are rare within the plan area and provide habitat for rare plant species. Rich fen habitat is identified in part by vegetation composition, which includes a number of calcicolous wetland plants. Hummocks, peatlands, and other fen features provide unique niches for plants and create a patchwork of plant communities.	Twelve collections documented from the Uinta Mountains with five collections located within the plan area. The last documented observation was in 2016 (Huber 2016). Localized and relatively common within its known habitat. Monitoring of fens and meadows indicates satisfactory conditions of the plant’s habitat, indicating stable population trends and persistence (Huber 2016).
<i>Aquilegia grahamii</i> Graham’s columbine	Narrow endemic; three occurrences have been documented within the plan area (Huber 2016).	Sensitive	Rare	G2 Utah – S2 Wyoming – None	Deep, stream-cut canyons; in cliff cracks, on ledges, in seeps or hanging gardens of the Pennsylvanian-Permian Weber Sandstone (Goodrich 2013a). Stream Canyon LTA.	The plant is restricted to a narrow habitat, which limits its distribution in the plan area. Habitat within the plan area is well protected and undisturbed due to its vertical topography and relative inaccessibility.	The latest available estimates of overall population size are 5,000 to 10,000 plants from 11 specific sites. The population trend appears stable and persisting within the plan area (Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Cirsium ownbeyi</i> Ownbey's thistle	Regional endemic; two occurrences have been documented within the plan area (Huber 2016).	None	Watch, species of concern	G3 Utah – S1 Wyoming – S2	Sagebrush and desert shrub communities. Green River LTA.	The plant communities in which this plant grows are common and widespread within the plan area, but its distribution is limited therein. Core populations occur in northwestern Colorado. The plant is known to colonize both natural and human-made ground disturbances, such as landslides and road cuts. Habitat may be susceptible to annual invasive plants, such as cheatgrass. The presence of annual invasive plants could alter natural fire intervals.	Two collections, last documented in 1995, occur within the plan area in the FGNRA. Based on 11 collections documented for Wyoming, the state population was estimated between 56,000 and 75,000 plants (Huber 2016).
<i>Cymopterus evertii</i> Evert's wafer parsnip	Regional endemic; one occurrence has been documented within the plan area (Huber 2016).	None	Rare, species of concern	G3 Utah – S1 Wyoming – S2	Grows in limestone gravels along the rim of Ashley Gorge; associated with Douglas-fir and limber pine (Goodrich 2013b). Stream Canyon LTA.	The plant community in which this plant grows is common and widespread; however, required habitat appears restricted, and distribution is limited to one population. If conifer increases in density and canopy cover, it would reduce the quality of habitat and diminish plant populations. The potential of fire may increase from this trend (Huber 2016).	One occurrence is documented in Uintah County, Utah, and is a disjunct population. It is only found along the rim of Ashley Gorge within the plan area. Two collections have been made; it was last documented in 2006 (Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Cypripedium fasciculatum</i> Clustered lady's slipper	Known populations consist of few plants. Timber harvest, bark beetle infestations, and fire are stressors (Huber 2016). Listed as sensitive in Utah.	Sensitive	Rare, species of potential concern	G4 Utah – S1 Wyoming – S3	Shade of coniferous forests between 8,000 and 9,000 feet. In duff of moderately dense to dense lodgepole pine forests where understory species are sparse (Goodrich 2013c). Parks Plateau and Trout Slope LTAs.	Lodgepole pine is a common vegetation community in the eastern Uinta Mountains. Quality habitat is widespread, and the range of the plant and its habitat extends over 25 miles. Fire, bark beetle epidemics, and timber harvest have temporarily reduced habitat and diminished populations, but these disturbances have not eradicated the plant. Current timber management practices implement strategies to conserve existing habitat and populations (Huber 2016).	About 30 known occurrences in the plan area. Most populations consist of a few plants (1–100) (Franklin 1990a).
<i>Draba brachystylis</i> Wasatch draba	Regional endemic; one occurrence has been documented within the plan area (Huber 2016).	None	Rare	G1 Utah – S1 Wyoming – None	Found in limestone rocks, talus, or scree within the plan area. Outside the plan area, it also is found in coniferous or aspen forests. Glacial Canyon LTA.	The plant is restricted to a narrow habitat, which limits its distribution within the plan area. The population is considered disconnected with the core population occurring westward in the Wasatch Mountains. Habitat within the plan area is well protected and undisturbed due to its rocky topography and relative inaccessibility.	One collection from the plan area has been made; it was last observed in 1983 (Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Draba globosa</i> Rockcress draba	Listed as sensitive in Utah	Sensitive	Rare, species of concern	G3 Utah – S2 Wyoming – S2	Alpine tundra, most often associated with or adjacent to persisting snow beds. Uinta Bollie LTA.	Quality alpine habitat is abundant and widespread for this plant. Collections demonstrate a distribution across the entire alpine range of the Uinta Mountains for a distance of about 60 miles. Most populations appear to be small but widespread. Large populations are apparently infrequent (Huber 2016; Goodrich 2013d). The plant is commonly found in disturbed, open ground caused by melting snow beds.	Widely distributed across the alpine crest of the Uinta Mountains, but often in small populations. Ten new occurrences in the plan area over the last 20 years on the Ashley National Forest; it was last documented in 2016. There are 37 collections from the Uinta Mountains. The population trend appears stable and persisting, and habitat is relatively resilient (Huber 2016).
<i>Draba ventosa</i> Tundra draba	Rare and often disconnected throughout its distribution; four collections from the Uinta Mountains with one from the plan area (Huber 2016).	None	Watch	G3 Utah – S1 Wyoming – S3	Alpine. Occurs in talus, scree slopes, slides, and fell-fields; on cliffs and at the base of cliffs; on ridges; and on summits. Often, but not always, found on limestone parent material. Uinta Bollie LTA.	Habitat for the plant is relatively abundant, widespread, and undisturbed, but populations appear rare and scattered. Most occurrences in the Uinta Mountains are found outside the plan area (Huber 2016). Plant habitat is relatively remote, rugged, and inaccessible to humans and their impacts.	One occurrence has been documented within the plan area. Utah is the edge of the plant’s distribution, but the plant is rare throughout its entire distribution (Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Erigeron untermannii</i> Untermann's daisy	State endemic. Habitat is found within and adjacent to energy-rich areas, which pose a potential threat (Huber 2016).	Sensitive	Rare	G2 Utah – S2 Wyoming – None	Semi-barrens of sandstone, shale, and siltstone of the Uinta and Green River Formations. Windswept, sparsely vegetated ridge tops within pinyon-juniper, Douglas-fir, and limber pine-bristle cone pine belts. Anthro Plateau LTA.	Patch sizes of this plant's habitat are typically small (less than 10 acres), but are relatively common and well distributed across the Tavaputs Plateau of the plan area, where core populations occur (Franklin 1989; Huber 2016; Goodrich 2013e). Habitat features minimize most human-related stressors such as grazing and mineral extraction.	Eleven occurrences have been documented over the last 20 years with the last occurrence in 2011. Thirty-one collections have been documented from the Uinta Basin. Monitoring indicates that populations are stable and persisting (Huber 2016).
<i>Kobresia simpliciuscula</i> Compound Kobresia	Rare habitat in the plan area with four documented occurrences (Huber 2016).	None in Utah or Wyoming	Peripheral species of concern	G5 Utah – S1 Wyoming – S1	Rare calcareous or rich fens. Alpine Moraine and Greendale Plateau LTAs.	Rich or calcareous fens meet the definition of a rare and specialized habitat in the forest plan assessment. Geologically, these are restricted to wetlands underlain by limestone or fed by calcium-rich water, or both. Such fens are rare within the plan area and provide habitat for rare plant species. Rich fen habitat is identified in part by vegetation composition, which includes a number of calcicolous wetland plants. Hummocks, peatlands, and other fen features provide unique niches for plants and create a patchwork of plant communities.	Utah is at the southern edge of its range. Eight collections have been documented from the Uinta Mountains. It was last observed in 2016. Monitoring indicates that the fen is in satisfactory condition with stable trends (Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Lepidium huberi</i> Huber's pepperplant	Local endemic; four occurrences have been documented within the plan area (Huber 2016).	None	Rare	G2 Utah – S2 Wyoming – None	Eroding slopes and narrow, steep canyons of the Moenkopi Formation; with mountain brush and ponderosa pine; canyon breaks. Moenkopi Hills and Stream Canyon LTAs.	Although the plant communities in which the plant grows are abundant and widespread, quality habitat is uncommon with a restricted distribution within the plan area. Habitat is more common outside the plan area with core populations found on the East Tavaputs Plateau (Huber 2016; Goodrich 2013f). Habitat features minimize stressors such as grazing, fire, recreation, and mineral extraction.	Ten collections have been documented for Utah. It is locally abundant and relatively widespread. Populations of the plant in the plan area are stable and persistent (Huber 2016).
<i>Mentzelia goodrichii</i> Goodrich's blazingstar	Narrow endemic; two occurrences have been documented within the plan area (Huber 2016).	Sensitive	Rare	G1 Utah – S1 Wyoming – None	Grows on escarpments, eroding slopes, and semi-barrens of the Green River Formation. Occasionally in association with pinyon, juniper, and Douglas-fir. Anthro Plateau LTA.	The plant communities in which the plant grows are abundant and widespread, but eroding slopes and semi-barrens of the Green River and Uinta Formations provide the best habitat. Although these features are relatively common and widespread across the West Tavaputs Plateau, populations are uncommon and scattered (Goodrich 2008; Huber 2016). Habitat features minimize stressors such as grazing, fire, recreation, and mineral extraction.	Nine collections have been documented for Utah. Plants are scattered in small populations. Most are found outside the plan area. Populations appear to be stable and persisting (Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Oxytropis besseyi</i> var. <i>obnapiformis</i> Maybell locoweed	Regional endemic; one occurrence has been documented in the plan area (Huber 2016).	None	Watch, species of concern	G5/T2 Utah – S2 Wyoming – S1	Pinyon-juniper and sagebrush communities, often on semi-barrens in either fine-textured or sandy substrates. North Flank LTA.	The plant communities in which this plant grows are common and widespread within the plan area, but the plant’s distribution is limited therein (Huber 2016). Habitat may be susceptible to annual invasive plants, such as cheatgrass; the presence of annual invasive plants could alter natural fire intervals.	The core population is located in Colorado; nine collections have been documented for Utah and five for Wyoming. Only one collection was from the plan area. The trend is unknown, but at least Wyoming populations appeared stable (Huber 2016).
<i>Papaver radicum</i> var. <i>kluanense</i> Alpine poppy	Small populations restricted to a narrow habitat (Huber 2016)	Sensitive	Species of concern	G5/T4 Utah – S1 Wyoming – S2	Restricted to a narrow habitat, which consists of Red Pine Shale talus slopes and ridge tops. Uinta Bollie LTA.	Although uncommon, habitat for this plant is widespread with populations scattered across the crest of the Uinta Mountain range. Its range extends approximately 50 miles (Franklin 1990b; Huber 2016; Goodrich 2013g). Plant habitat is almost entirely undisturbed by humans and their impacts due to its remote, rugged, and inaccessible terrain.	Populations generally cover small areas and are comprised of few to a few hundred plants. Fourteen documented occurrences have been within the plan area. Populations appear stable, and persistence is expected (Franklin 1990b; Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Penstemon acaulis</i> Stemless beardtongue	Local endemic	Sensitive	Peripheral species of concern	G2 Utah – S1 Wyoming – S1	Mixed-desert shrub, black sagebrush, Wyoming big sagebrush, and pinyon-juniper communities. North Flank and Antelope Flat LTAs.	The plant communities in which this plant grows are abundant and widespread within the plan area, but the plant’s range and distribution are quite narrow and limited. Core populations occur outside the plan area in southwestern Wyoming. Plants appear to benefit from both natural and human-related surface disturbances. Habitat may be susceptible to annual invasive plants, such as cheatgrass. The presence of annual invasive plants could alter natural fire intervals (Huber 2016; Jouseau 2012; Goodrich 2013h).	Over 10 occurrences have been documented over the last 20 years. There are larger populations outside the plan area than within the plan area. Monitoring found that the species colonizes on disturbance such as road sides, burrow areas, two-track roads, and bladings. The density and size of plants on this disturbance are equal to or greater than those of plants in undisturbed habitat (Goodrich 2013h; Huber 2016).
<i>Phacelia glandulosa</i> var. <i>deserta</i> Desert phacelia	Local endemic. Limited populations; two occurrences within the plan area (Huber 2016).	None	Species of concern	G4/T2 Utah – None Wyoming – S2	Desert shrub and Wyoming big sagebrush. Green River LTA.	The plant communities in which this plant grows are abundant and widespread within the plan area, but the plant’s distribution is limited therein. Core populations occur outside the plan area in Wyoming. Habitat may be susceptible to annual invasive plants, such as cheatgrass. The presence of annual invasive plants could alter natural fire intervals (Huber 2016).	Populations vary from small (less than 10 plants) to locally abundant (4,000–6,000 individuals), with total numbers estimated between 20,000 and 25,000 plants. It is not found in Utah. There have been 6 to 20 occurrences outside the plan area (Huber 2016).

Scientific Name/ Common Name	Rationale	Forest Service Status	State Status	Global and State Ranks*	Habitat/ Landtype Association	Habitat Factors/Key Ecosystem Characteristics	Observation Information
<i>Primula incana</i> Silvery primrose	Rare habitat in the plan area with one occurrence documented (Huber 2016)	None	Peripheral	G5 Utah – S1 Wyoming – S2	Rare calcareous or rich fens. Greendale Plateau LTA.	Rich or calcareous fens are restricted to wetlands underlain by limestone or fed by calcium-rich water, or both. Such fens are rare within the plan area and provide habitat for rare plant species. Rich fen habitat is identified in part by vegetation composition, which includes a number of calcicolous wetland plants. Hummocks, peatlands, and other fen features provide unique niches for plants and create a patchwork of plant communities (Huber 2016).	Utah is at the southern edge of its range. Two collections have been documented from the Uinta Mountains. It was last observed in 2016. Monitoring indicates the fen is in satisfactory condition with stable trends (Huber 2016).

*Global Rankings: G1—critically imperiled; G2—imperiled; G3—vulnerable; G4—apparently secure; G5—secure. State Rankings: S1—critically imperiled; S2—imperiled; S3—vulnerable; S4—apparently secure; S5—secure; use of “T” rank indicates a taxon for which there is a trinomial (a subspecies, variety, or recognized race); use of “B” indicates the conservation status refers to the breeding population of the species; use of “N” indicates the conservation status refers to the non-breeding population of the species (NatureServe 2020).

Table C-3. Current Habitat Conditions, Trends, and Risk Factors for Threatened, Endangered, Proposed, and Candidate Animal and Plant Species

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Lynx canadensis</i> Canada lynx	Beetles have affected conifers in all LTAs (associated with this species habitats). This has reduced some foraging habitat, but it has increased the potential for future foraging and denning habitat. Some regeneration is occurring. Aspen stands are generally in satisfactory condition with some areas of conifer encroachment.	Climate change may increase the threat of stand-replacing fire and the distribution of spruce and fir forests. Spruce and pine beetle outbreaks in associated LTAs may continue to affect this habitat.	Fragmentation, loss, or degradation of habitat through activities such as commercial timber harvest, road building, and snow compacting activities.	A large portion of this species' habitat on the Ashley National Forest is remote and receives little human-related impacts; thus, it is likely to persist over time in the absence of ecological stressors. The beetle epidemic has decreased some lynx habitat. However, habitat sustainability for this species is likely to persist as the conifer stands affected by the beetle epidemic regenerate over time. As this occurs, foraging habitat (young regenerating conifer stands) is likely to increase, as is denning habitat (snags falling to the forest floor over time).
<i>Strix occidentalis lucida</i> Mexican spotted owl	Breeding and nesting habitat for this species is unlikely to occur on the Ashley National Forest. Few canyons on the Ashley National Forest, if any at all, meet the 2x2 rule (less than 1.24 miles wide and greater than 1.24 miles long; this is the typical canyon characteristic for breeding and nesting). However, the Ashley National Forest contains larger canyons that contain other habitat components (conifer stands). Conifer stands in associated LTAs have been affected by beetles. This has reduced some habitat, but some regeneration is occurring.	Climate change that leads to stand-replacing wildfire threatens habitat. Spruce and pine beetle outbreaks in associated LTAs may continue to affect this habitat.	Overgrazing and commercial timber harvest are considered threats, but there is minimal timber harvest that occurs on the Ashley National Forest.	Habitat for this species is limited and may not occur on the Ashley National Forest, as very few canyons, if any at all, meet the 2X2 rule. However, some elements of this species' habitat are likely to remain sustainable over time. This is because there are few, if any, threats to this habitat. Other elements of this species' nesting habitat (conifers) may decrease as the beetle epidemic persists. However, it is likely to improve over time as regeneration occurs within those conifer stands affected by the beetle epidemic.

Appendix C. At-Risk Species (Table C-3. Current Habitat Conditions, Trends, and Risk Factors for Threatened, Endangered, Proposed, and Candidate Animal and Plant Species)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Coccyzus americanus</i> Yellow-billed cuckoo	The Ashley National Forest likely does not contain the expansive cottonwood habitats required for this species. However, some smaller cottonwood habitat patches/stringers do occur. With a few exceptions, riparian habitats in LTAs associated with this species' habitat, including cottonwood stands, are generally in satisfactory condition. These few exceptions are trending toward satisfactory condition.	Climate change could reduce the amount of riparian and cottonwood forests.	Loss or degradation of riparian and cottonwood habitat, including disruption of streamflows.	The Ashley National Forest does not contain, and is unlikely to ever contain, the expansive cottonwood tracts typical of this species' habitat. The small patches/stringers of cottonwood habitats on the Ashley National Forest are expected to persist over time if they continue to remain in satisfactory conditions.
<i>Gila cypha</i> Humpback chub	No suitable habitat on the Ashley National Forest	Climate change could affect water availability.	Water depletion-related projects	Not applicable
<i>Gila elegans</i> Bonytail chub	No suitable habitat on the Ashley National Forest	Climate change could affect water availability.	Water depletion-related projects	Not applicable
<i>Ptychocheilus lucius</i> Colorado pikeminnow	No suitable habitat on the Ashley National Forest	Climate change could affect water availability.	Water depletion-related projects	Not applicable
<i>Xyrauchen texanus</i> Razorback sucker	No suitable habitat on the Ashley National Forest	Climate change could affect water availability.	Water depletion-related projects	Not applicable
<i>Lepidium barnebyanum</i> Barneby ridge-cress	No suitable habitat on the Ashley National Forest	Small population size and range	Off-road vehicle use and the development of oil and gas resources	Not applicable

Appendix C. At-Risk Species (Table C-3. Current Habitat Conditions, Trends, and Risk Factors for Threatened, Endangered, Proposed, and Candidate Animal and Plant Species)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Phacelia argillacea</i> Clay phacelia	No suitable habitat on the Ashley National Forest	Extremely restricted by climatic and edaphic factors; small population size	Habitat degradation and loss from human land-use activities, including livestock and sheep grazing, the Denver and Rio Grande Western Railroads, construction activities, and highway maintenance and construction activities	Not Applicable
<i>Spiranthes diluvialis</i> Ute ladies'-tresses	Habitat within the plan area consists of floodplains of the Green River that have satisfactory plant composition and hydrological conditions. This indicates stable population trends and species persistence.	Competition from aggressive graminoids (herbaceous plant) and willows may outcompete the plant. Climate change that would lead to consistent drier and warmer weather conditions may reduce the overall flow of the river.	Natural fluctuations in the streamflow may have affected habitat following the construction of the Flaming Gorge Dam. Invasive plants, such as tamarisk, may change vegetation composition and structure of stream riparian communities.	Plants positively respond to occasional disturbances that reduce the vegetation competition. Periodic water discharges from the Flaming Gorge Dam that simulate high spring water flows provide a disturbance mechanism that clears or reduces floodplains of woody debris, which improves habitat conditions for the plant. If the Forest Service implements or maintains weed control measures, or both, that reduce or eradicate invasive plant species along river floodplains, habitat sustainability within the plan area is indicated.

Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Centrocercus urophasianus</i> Greater sage-grouse	Sagebrush communities across the Ashley National Forest are generally in satisfactory condition. Some communities within the lower-elevation/drier LTAs (South Face, Green River, and Anthro Plateau) have invasion of cheatgrass and/or halogeton or are at risk of invasion. Sagebrush communities within all LTAs associated with sage-grouse habitat are being threatened by conifer encroachment.	Climate change could exacerbate the invasion of noxious weeds, such as halogeton and cheatgrass. It may also increase the fire frequency.	Habitat fragmentation/ degradation from oil and gas development and other anthropogenic disturbances	In 2015, conservation measures to conserve this species' habitats were amended into the 1986 Forest Plan. It is likely that this species' habitats are likely to be maintained over time if similar conservation measures are carried into the revised forest plan. Cheatgrass invasion, if not deterred, may reduce the quality of habitat over time. Conifer encroachment will eventually result in the loss of sagebrush communities, if encroachment is not deterred.
<i>Falco peregrinus</i> Peregrine falcon	Cliffs are rarely threatened, if at all, and are not a concern. Riparian habitats in LTAs associated with this species' habitat are generally in satisfactory condition. A few isolated areas may not be in satisfactory condition, but they are trending that direction.	Climate change could reduce the amount of riparian habitat.	Noise disturbance to nesting birds and riparian habitat degradation	Nesting habitat (cliffs) is likely to remain sustainable over time. This is because there are few, if any, threats to this habitat on the Ashley National Forest. Riparian habitat will remain sustainable if it continues in satisfactory condition or trends toward satisfactory conditions over time.
<i>Leucosticte atrata</i> Black rosy-finch	High-elevation, rocky areas are generally not threatened and are not a concern. Alpine areas within LTAs associated with this species are generally in satisfactory conditions.	Climate change could reduce the amount of snowbanks that persist into the early summer.	Habitat loss and degradation from mining or improper grazing	Currently there are few human-related activities that occur on or threaten this species' habitat; this, this species' habitats are likely to remain sustainable over time. This is especially true if habitat continues to remain or trend toward satisfactory conditions.

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Sylvilagus idahoensis</i> Pygmy rabbit	Sagebrush communities within the Green River LTA have been invaded or are at risk of invasion of cheatgrass or halogeton, or both.	Climate change could exacerbate the invasion of noxious weeds, such as halogeton and cheatgrass. Cheatgrass may reduce habitat quality and may also increase the fire return interval, which would reduce habitat for this species.	Habitat degradation from grazing and energy development	This species' habitat is likely to remain sustainable over time if cheatgrass expansion is deterred or slowed.
<i>Myotis thysanodes</i> Fringed myotis (bat)	Hibernacula and maternity sites (caves) are critical habitat components for this species. Caves on the Ashley National Forest are generally protected and are in satisfactory condition. Conifers in all LTAs (associated with this species' habitats) have been affected by beetles. Pinyon-juniper habitats are advancing in all LTAs. With a few exceptions, riparian habitats in associated LTAs are generally in satisfactory condition. These few exceptions are trending toward satisfactory condition.	Spread of white-nose syndrome (WNS). Spruce/pine beetle outbreaks in associated LTAs may continue to affect this habitat.	Human disturbance to hibernacula and maternity sites in caves. Degradation of riparian habitats. Fungal spread (WNS) via recreational caving.	This species' habitats are likely to remain sustainable over time if satisfactory conditions are maintained. The primary threat to this species is WNS; it is uncertain if, or when, it will spread to bat populations on the Ashley National Forest. This is likely to be the primary factor affecting this species' persistence over time on the Ashley National Forest. Conifers will regenerate from the beetle outbreak over time.
<i>Ovis canadensis</i> Bighorn sheep	Habitat conditions are generally in satisfactory condition; however, conifer encroachment occurs in all LTAs where habitat occurs. Cheatgrass invasion has also occurred in some areas of the lower-elevation LTAs.	Climate change could exacerbate the invasion of noxious weeds, such as cheatgrass. It may also increase the fire frequency; however, as stated earlier, fire can improve habitat conditions by creating open habitat.	The potential for respiratory pathogen transmission from domestic sheep. Habitat loss from anthropogenic disturbance.	Connectivity of open habitat associated with steep, rocky terrain is sustainable with habitat improvement projects that reduce conifer encroachment and cheatgrass invasion.

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<p><i>Oncorhynchus clarki plueriticus</i> Colorado River cutthroat trout</p>	<p>The existing aquatic habitat in most LTAs is in suitable condition. Isolated areas of overgrazing or illegal ATV use cause some sedimentation, but this is not a major concern. Riparian vegetation is at or trending toward desired condition and is helpful to maintain suitable water temperatures.</p>	<p>Climate change could increase stream temperatures and affect seasonal flow conditions to the point it may affect recruitment. Climate change could increase the risk of catastrophic fire, which could have a negative effect on habitat conditions through increased sedimentation causing increased stream temperatures and reduced spawning areas.</p>	<p>With the increase of various forms of recreation, such as ATV use, increased sedimentation could result. Stocking of nonnative fish can have a negative effect on Colorado River cutthroat trout.</p>	<p>Suitable habitat is currently abundant on the Ashley National Forest. In general, this habitat is only threatened in isolated areas.</p>
<p><i>Antennaria pulcherrima</i> Handsome pussytoes</p>	<p>Habitat consists of intermediate to rich fens that have satisfactory plant composition, ground cover, and hydrological conditions. These indicate stable population trends and species persistence (Huber 2016).</p>	<p>Climate change that would lead to drier and warmer weather conditions may change the hydrologic function of the fens. Drying conditions may lead to changes in plant community composition. In theory, the plant has room to migrate upslope in the plan area to suitable habitat at elevations up to 11,200 feet, which would be about 2,000 feet of elevational migration.</p>	<p>The fens are accessible to livestock and have over a 100-year history of grazing use. Livestock grazing is a relative threat to the plant, but wet conditions help restrict livestock from accessing or grazing much of the habitat type. Some grazing impacts are documented along the ecotones and drier areas of the habitat. Some indication of off-road vehicle use along the ecotone of fens has been observed. Wet conditions minimize vehicle impacts within the fens.</p>	<p>Long-term monitoring indicates sustainability of fen habitat with current stressors. A stable trend in plant populations, habitat, and hydrological condition is indicated over a 30-year period, concurrent with livestock grazing, recreation, and environmental conditions. Livestock stocking rates, grazing intensities, allotment management, and recreation need to remain at current levels or less to maintain habitat integrity. If the climate becomes consistently warmer and drier, fen habitat integrity may be compromised, and plant populations may diminish if upslope migration does not occur (Huber 2016).</p>

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Aquilegia grahamii</i> Graham's columbine	Habitat consists of both wet and dry cliff cracks and ledges, and in seeps or hanging gardens. Habitat within the plan area is and has been undisturbed. It is considered in satisfactory condition. The plant population trend appears stable and persisting.	Due to the vertical habitat of the canyon walls, there are currently no known existing or potential threats of populations within the plan area, which contains the core populations of the plant. Climate change that would lead to drier and warmer weather conditions may change the hydrologic function of seeps and hanging gardens, but the plant also persists in dry conditions.	There are no known human-related stressors within the plan area; however, a couple of populations adjacent to the plan area may be threatened by surface mine activity.	Habitat sustainability within the plan area is indicated. Habitat is well protected from human-related stressors due to its topography and relative inaccessibility. A warmer and drier climate is expected to have minimal effect on plant populations because of the plant's ability to persist in dry conditions.
<i>Cirsium ownbeyi</i> Ownbey's thistle	Habitat consists of desert and montane shrub communities, semi-barrens, and rocky crevices and slopes. The plant composition of the habitat is satisfactory and devoid of annual invasive plants. The habitat trend is determined as stable. Populations appear stable and persisting.	There are no known natural stressors. Annual invasive plants could be a foreseeable stressor, which could change the plant community composition and fire frequency. The plant at least tolerates, if not benefits from, natural disturbances. Climate change is not considered a foreseeable stressor but may accelerate the spread of annual invasive plants.	May be vulnerable to herbicide spraying, biocontrol insects, or disturbance by recreation vehicles. The plant is known to colonize roadsides and other human- and nature-related disturbances.	The habitat is sustainable under current conditions and stressors. There is no evidence of plant populations being affected from herbicide spraying or biological controls, but populations need to be avoided and accounted for when noxious weed control measures are implemented. The most apparent foreseeable threat to habitat is annual invasive plants, such as cheatgrass. Annual invasive plants could change the community composition and increase the fire frequency, which would compromise habitat integrity and threaten plant populations.
<i>Cymopterus evertii</i> Evert's wafer parsnip	Habitat consists of limestone gravels within scattered Douglas-fir and limber pine. Habitat within the plan area is undisturbed and is considered in satisfactory condition. The plant population trend appears stable and persisting. Populations appear stable and persisting (Huber 2016).	There are no known immediate ecological threats. Two foreseeable threats are conifer recruitment and displacement, and fire.	The plant habitat is relatively inaccessible to humans. No known human-related stressors are identified.	The habitat is sustainable under current conditions and stressors; however, an upward trend in conifer recruitment within the habitat may affect plant populations.

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<p><i>Cypripedium fasciculatum</i> Clustered lady's slipper</p>	<p>Habitat consists of moderately dense to dense lodgepole pine forests where duff litter has accumulated and understory plant species are sparse. Habitat within the plan area is in satisfactory condition and has been conserved due to its current sensitive species status. Known populations are stable, and persistence is indicated (Huber 2016).</p>	<p>Ecological stressors are those that greatly reduced or eliminate coniferous shade and increase herbaceous understory species. Stand-replacement fire is a known ecological stressor that temporarily reduces quality habitat (40–100 years). Mixed coniferous forests trending from lodgepole pine to Engelmann spruce and subalpine fir may reduce or eliminate habitat. In these situations, long-term persistence of this plant could be dependent on periodic fire that maintains lodgepole pine stands and prevents a trend toward spruce and fir dominance. Tree die-off from bark beetle epidemics that opens tree canopies, reduces shade, and promotes the establishment of other understory plants can suppress or eliminate clustered lady's slipper populations.</p>	<p>Timber harvesting is a human-related stressor that, similar to fire, reduces quality habitat. Timber management has been modified to protect existing plant populations.</p>	<p>Long-term monitoring indicates sustainability of habitat with current stressors. A stable trend in plant populations and habitat condition is indicated over a 30-year period under current management as a Forest Service sensitive species. The Forest Service needs to maintain current timber management practices to conserve habitat and plant populations. Fire would temporarily reduce habitat and negatively affect plant populations; however, plant populations have persisted and are expected to persist concurrent with fire within natural burn intervals (150–300 years). Similar to fire, bark beetle epidemics can temporarily reduce habitat and negatively affect plant populations; however, plant populations have persisted and are expected to persist concurrent with current and future bark beetle epidemics.</p>
<p><i>Draba brachystylis</i> Wasatch draba</p>	<p>Habitat consists of soils with limestone rocks, talus, or scree. Habitat within the plan area is and has been undisturbed; it is considered in satisfactory condition. The plant population trend and persistence are unknown, but they are likely stable due to undisturbed habitat.</p>	<p>There are no known natural stressors of the population within the plan area.</p>	<p>There are no known human-related stressors of the population within the plan area. Habitat is threatened by development and increased recreation use outside and disjunct from the plan area.</p>	<p>Habitat sustainability within the plan area is indicated. Habitat is well protected from human-related stressors due to its topography and relative inaccessibility.</p>

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Draba globosa</i> Rockcress draba	Habitat consists of alpine tundra, often associated with persisting snow beds. Numerous long-term studies indicate that habitat plant composition and ground cover are in satisfactory conditions with stable trends. Stable populations are widely distributed across the plan area, and persistence is indicated (Huber 2016).	Climate change that would lead to drier and warmer conditions may be a stressor. Populations occur at the highest elevations of the plan area, which would eliminate the possibility of upslope migration during a warming climate. Plants commonly grow in disturbed, open ground of snow beds, indicating disturbance as a favorable habitat condition.	Most populations are relatively inaccessible to human impacts. Domestic sheep and mountain goat browsing, and recreation are minimal human-related stressors. The plant's very low, pulvinate-caespitose ¹ habit provides some protection from ungulate browsing. Domestic sheep grazing has decreased considerably over the last 50 years. Although few in total numbers, mountain goat populations show a gradual upward trend over the last 30 years.	Long-term monitoring indicates sustainability of alpine habitat with current stressors; surveys and botanical collections document widely distributed and stable plant populations. Stable trends in habitat are indicated over a 60-year period, concurrent with livestock grazing, remote recreation activities, and environmental conditions. Sheep grazing has diminished considerably over the last plan period, but mountain goat populations have slowly increased. Current and foreseeable ungulate use of habitat are not expected to diminish plant populations or compromise habitat during the next plan period. If the climate becomes consistently warmer and drier, habitat integrity may be compromised, and plant populations may diminish. This is because upslope migration of plants and habitat is not optional.
<i>Draba ventosa</i> Tundra draba	Habitat consists of alpine talus, scree slopes, slides, fell-fields, and ridge crests. Habitat within the plan area is and has been undisturbed; it is considered in satisfactory condition. The plant population trend appears stable, and persistence is indicated.	Climate change that would lead to drier and warmer conditions may be a stressor. Populations occur at the highest elevations of the plan area, which would eliminate the possibility of upslope migration during a warming climate.	Habitat is relatively remote, rugged, and inaccessible to sheep grazing, humans and their impacts. Mountain goat browsing is a minimal threat. Mountain goat populations show a gradual upward trend over the last 30 years.	Long-term monitoring indicates the sustainability of alpine habitat with current stressors. Stable trends in plant populations and habitat are indicated. This is because the habitat is relatively remote, rugged, and inaccessible to sheep grazing, humans, and their impacts. Current and foreseeable ungulate use of the habitat is not expected to diminish plant populations or compromise the habitat during the next plan period. If the climate becomes consistently warmer and drier, habitat integrity may be compromised, and plant populations may diminish. This is because upslope migration of plants and the habitat is not optional.

¹ Cushion forming; grows in dense tufts or clumps

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<p><i>Erigeron untermannii</i> Untermann's daisy</p>	<p>Habitat consists of semi-barrens along ridge tops, occasionally with scattered pinyon-juniper, Douglas-fir, and limber pine-bristle cone pine. Long-term studies document satisfactory habitat conditions with stable population trends and persistence (Huber 2016).</p>	<p>No ecological stressors have been identified. Climate change is not a foreseeable stressor.</p>	<p>Oil and gas exploration is a foreseeable stressor. Due to its current sensitive species designation, its habitat has been excluded from development and other potential disturbances. Livestock grazing is a minor stressor; however, most known populations are inaccessible to livestock grazing due to steep slopes or the distance to water, or both. Habitats accessible to livestock are not preferred forage areas due to their semi-barren character. Livestock impacts are limited to occasional trailing across the habitat.</p>	<p>Long-term monitoring indicates the sustainability of habitat with current stressors. A stable trend in plant populations and habitat conditions is indicated over a 30-year period under current management as a Forest Service sensitive species, which mitigates for current and potential oil and gas exploration. The Forest Service should maintain current mineral extraction practices to conserve habitat and plant populations. Maintenance of habitat and plant populations are predicted under current livestock grazing management due to the habitat's "non-capable" livestock grazing status.</p>
<p><i>Kobresia simpliciuscula</i> Compound Kobresia</p>	<p>Habitat consists of intermediate to rich fens that have satisfactory plant composition, ground cover, and hydrological conditions. These indicate stable population trends and species persistence (Huber 2016).</p>	<p>Climate change that would lead to drier and warmer weather conditions may change the hydrologic function of the fens. Drying conditions may lead to changes in the plant community composition. In theory, the plant has room to migrate upslope in the plan area to suitable habitat at elevations up to 11,200 feet, which would be about 2,000 feet of elevational migration.</p>	<p>The fens are accessible to livestock and have over a 100-year history of grazing use. Livestock grazing is a relative threat to the plant, but wet conditions help restrict livestock from accessing or grazing much of the habitat type. Some grazing impacts are documented along the ecotones and drier areas of the habitat.</p>	<p>Long-term monitoring indicates sustainability of fen habitat with current stressors. A stable trend in plant populations, habitat, and hydrological conditions is indicated over a 30-year period, concurrent with livestock grazing, recreation, and environmental conditions. Livestock stocking rates, grazing intensities, allotment management, and recreation activity need to remain at current levels or less to maintain habitat integrity. If the climate becomes consistently warmer and drier, fen habitat integrity may be compromised, and plant populations may diminish if upslope migration does not occur.</p>

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Lepidium huberi</i> Huber's pepperplant	Habitat consists of eroding slopes and narrow, steep canyons, often associated with mountain brush and ponderosa pine. Habitat within the plan area is and has been undisturbed; it is considered in satisfactory condition. The plant population trend appears stable, and persistence is indicated (Huber 2016).	No ecological stressors have been identified. Climate change is not a foreseeable stressor.	No stressors have been identified within the plan area. Habitat is relatively accessible to livestock grazing; however, the plant is not selected for forage, and habitat terrain is often steep for trailing. Minimal threats may be oil and gas exploration and mining outside the plan area. A foreseeable stressor may be off-road vehicle use in more accessible habitat. The plant is found along roadsides and in fresh alluvium, which indicates some tolerance to disturbance.	Habitat sustainability within the plan area is indicated. Most habitat is protected from human-related stressors due to its topography. The Forest Service should continue current policies or implement off-road vehicle use policies that would protect more accessible habitat. Maintenance of habitat and plant populations is predicted under current livestock grazing management due to the habitat's "non-capable" livestock grazing status.
<i>Mentzelia goodrichii</i> Goodrich's blazingstar	Habitat consists of escarpments, eroding slopes, and semi-barrens; it is occasionally associated with pinyon-juniper or Douglas-fir. Habitat within the plan area is and has been undisturbed; it is considered in satisfactory condition. The plant population trend appears stable, and persistence is indicated (Huber 2016).	No ecological stressors have been identified. Climate change is not a foreseeable stressor.	Known populations are highly protected from livestock grazing by steep, eroding slopes; the distance to water; and a lack of preferred forage. Oil and gas exploration is a foreseeable stressor but likely limited due to steep, eroding terrain.	Habitat sustainability within the plan area is indicated. A stable trend in plant populations and habitat conditions is indicated over a 30-year period under current management as a Forest Service sensitive species, which mitigates for current and potential oil and gas exploration and other threats. The Forest Service should maintain current mineral extraction practices to conserve habitat and plant populations. Maintenance of habitat and plant populations are predicted under current livestock grazing management due to the habitat's "non-capable" livestock grazing status.

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Oxytropis besseyi</i> var. <i>obnapiformis</i> Maybell locoweed	Habitat consists of semi-barrens and is often associated with pinyon-juniper and sagebrush communities. Habitat within the plan area is very limited but is considered to be in satisfactory condition. Core populations are located outside the plan area. Due to a single occurrence, the population trend and persistence are unknown; however, populations in Wyoming are determined to be stable.	No ecological stressors have been identified. A foreseeable stressor may be annual invasive plants. Pinyon-juniper and Wyoming sagebrush communities may be susceptible to annual invasive species. Climate change is considered a foreseeable stressor, and it may accelerate the spread of annual invasive plants.	No stressors have been identified within the plan area. Outside the plan area, oil and gas development, excessive grazing, recreation, road construction, and recreational off-road vehicles are listed as stressors.	Habitat is limited within the plan area and appears sustainable under current conditions and stressors. The Forest Service should recognize and mitigate for potential human-related stressors to maintain habitat integrity. The most apparent foreseeable threat to habitat is annual invasive plants, such as cheatgrass. Annual invasive plants could change the community composition and increase the fire frequency, which would compromise habitat integrity and threaten plant populations.
<i>Papaver radicum</i> var. <i>kluanense</i> Alpine poppy	Habitat consists of Red Pine Shale talus slopes and ridge tops in alpine settings. Habitat is and has been undisturbed; it is considered in satisfactory condition. The plant population trend appears stable, and persistence is indicated (Huber 2016).	Pikas use alpine poppy but are considered a minimal threat. Populations continue to persist concurrent with pika use. Climate change that would lead to drier and warmer conditions may be a stressor. Populations occur at the highest elevations of the plan area, which would eliminate the possibility of upslope migration during a warming climate.	No human-related stressors are identified. The habitat is remote, rugged, and inaccessible to humans and their impacts. Mountain goat browsing is a minimal threat. Mountain goat populations show a gradual upward trend over the last 30 years.	Long-term monitoring indicates sustainability of talus and scree habitat with current stressors. A stable trend in plant populations and habitat conditions is indicated over a 30-year period under current management as a Forest Service sensitive species. Mountain goat populations have slowly increased, but current and foreseeable ungulate use of the habitat is not expected to diminish plant populations or compromise the habitat during the next plan period. If the climate becomes consistently warmer and drier, habitat integrity may be compromised, and plant populations may diminish. This is because upslope migration of plants and habitat is not optional.

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<p><i>Penstemon acaulis</i> Stemless beardtongue</p>	<p>Habitat consists of mixed-desert shrub, black sagebrush, Wyoming big sagebrush, and pinyon-juniper communities. Long-term monitoring indicates that habitat conditions are satisfactory, populations are stable, and persistence is documented (Huber 2016).</p>	<p>A foreseeable stressor may be annual invasive plants. Pinyon-juniper and black and Wyoming sagebrush communities are known to be susceptible to annual invasive species. Climate change that would lead to drier and warmer conditions may be a stressor. The plant has room to migrate upslope in the plan area to more suitable habitat if a warming climate occurs.</p>	<p>In Utah, listed stressors include recreation, off-road vehicles, and livestock trampling. In Wyoming, stressors also include gravel quarrying and road construction. The plant benefits from disturbance, including severe land disturbances. It has been found to colonize two-track roads, road sides, gravel pits, communication facilities, and trails. The density and size of plants within disturbances are equal to or greater than those in undisturbed habitat. The plant has persisted with livestock grazing for over 100 years. Grazing appears to minimally affect the plant.</p>	<p>Long-term monitoring indicates sustainability of habitat with current stressors. A stable trend in plant populations and habitat conditions is indicated over a 30-year period under current management as a Forest Service sensitive species, which mitigates for human-related activities. Livestock stocking rates, grazing intensities, allotment management, and recreation activity must remain at current levels or less to maintain habitat integrity. If the climate becomes consistently warmer and drier, habitat integrity may be compromised, and plant populations may diminish if upslope migration does not occur. The most apparent foreseeable threat to the habitat is annual invasive plants, such as cheatgrass. Annual invasive plants could change the community composition and increase the fire frequency, which would compromise habitat integrity and threaten plant populations.</p>
<p><i>Phacelia glandulosa</i> var. <i>deserta</i> Desert phacelia</p>	<p>Habitat consists of desert shrub and Wyoming big sagebrush communities. Habitat within the plan area is in satisfactory condition. Core populations are located outside the plan area. With a single occurrence in the plan area, the population trend and persistence are unknown.</p>	<p>No ecological stressors have been identified. A foreseeable stressor may be annual invasive plants. Desert shrub and Wyoming sagebrush communities are known to be susceptible to annual invasive species. Climate change is not considered a foreseeable stressor, but it may accelerate the spread of annual invasive plants.</p>	<p>Outside the plan area, off-road vehicle use or mineral exploration are noted human-related stressors. Off-road vehicle use and other recreational activities that lead to surface disturbance are stressors within the plan area.</p>	<p>The habitat is sustainable under current conditions and stressors. The most apparent foreseeable threat to the habitat is annual invasive plants, such as cheatgrass. Annual invasive plants could change the community composition and increase the fire frequency, which would compromise habitat integrity and threaten plant populations. The Forest Service should recognize and mitigate for potential human-related stressors to maintain habitat integrity.</p>

Appendix C. At-Risk Species (Table C-4. Current Habitat Conditions, Trends, and Risk Factors for Regional Forester Identified Plant and Wildlife Species of Conservation Concern)

Scientific Name/Common Name	Current Habitat Conditions	Ecological Stressors	Human-Related Stressors	Habitat Sustainability
<i>Primula incana</i> Silvery primrose	Habitat consists of intermediate to rich fens that have satisfactory plant composition, ground cover, and hydrological conditions; these indicate stable population trends and species persistence (Huber 2016).	Climate change that would lead to drier and warmer weather conditions may change the hydrologic function of the fens. Drying conditions may lead to changes in the plant community composition. In theory, the plant has room to migrate upslope in the plan area to suitable habitat at elevations up to 11,200 feet, which would be about 2,000 feet of elevational migration.	The fens are accessible to livestock and have over a 100-year history of grazing use. Livestock grazing is a relative threat to the plant, but wet conditions help restrict livestock from accessing or grazing much of the habitat type. Some grazing impacts are documented along the ecotones and drier areas of the habitat.	Long-term monitoring indicates sustainability of fen habitat with current stressors. A stable trend in plant populations, habitat, and hydrological conditions is indicated over a 30-year period, concurrent with livestock grazing, recreation, and environmental conditions. Livestock stocking rates, grazing intensities, allotment management, and recreation activity need to remain at current levels or less to maintain habitat integrity. If the climate becomes consistently warmer and drier, fen habitat integrity may be compromised, and plant populations may diminish if upslope migration does not occur.

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