

# **Grouse Bear Management Unit (BMU) Compliance Project**

## **Rare Plants Report**

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**for:**

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## Introduction

This report discusses the environmental effects of implementing the Grouse Bear Management Unit (BMU) Compliance (hereafter called Grouse BMU) Project on threatened, endangered and sensitive plants (collectively called rare plants). A summary of this report is included as part of the “Affected Environment and Environmental Consequences” section of the environmental assessment.

There are no known occurrences of federally listed threatened or endangered plant species on Idaho Panhandle National Forests lands, although U.S. Fish and Wildlife Service expects that suitable habitat for some threatened species occurs on the Forest. No endangered plant species are known or expected to occur on the Forest. The U.S. Fish and Wildlife Service (2017) currently lists no threatened plant species as suspected to occur in Bonner County or Boundary County, Idaho, in which the Grouse BMU project area occurs.

Sensitive species are determined by the regional forester as those species for which habitat may occur on National Forest System lands and for which population viability is a concern. Viability concern is indicated by a current or predicted downward trend in population numbers or habitat capability that would reduce the species' existing distribution. Fifty-six sensitive plant species are known or suspected to occur in the Kaniksu portion of the Idaho Panhandle National Forests, and suitable habitat for some of these sensitive species occurs within the Grouse BMU project area.

## Regulatory Framework

Federal legislation, regulations, policy, and direction require protection of species and population viability, evaluation and planning-process consideration of threatened, endangered, and other rare plant species. The regulatory framework for these plants includes the Endangered Species Act (1973) as amended; the National Forest Management Act (NFMA) (1976); the National Environmental Policy Act (1969); Forest Service Manual (2672.1-2672.43); Idaho Panhandle National Forests Land Management Plan (2015); and direction from the Regional Watershed, Wildlife, Fisheries and Rare Plants program and Washington Office.

## Affected Environment

### Existing Condition

#### Methodology

Assessment of rare plants and suitable habitat occurrence for the Grouse BMU project was accomplished through review of Idaho Department of Fish and Game Conservation Data Center element occurrence records in 2015, National Wetlands Inventory maps, queries of the forest stand and Forest Activities database (FACTS), National Resource Information System (NRIS), aerial photographs, topographical maps, rare plant surveys completed in 2016, personal knowledge and professional judgment of the North Zone Botanist for the Idaho Panhandle National Forests (IPNF).

#### *Pre-field Review*

Pre-field review provides information about the project area that is used to determine the need and extent of field surveys for a project. The North Zone Botanist conducted pre-field review of the proposed analysis area in 2015 and 2016. Queries of the Forest Activities database (FACTS) were used to provide a "coarse-filter" assessment of suitable rare plant habitat in the project area. Aerial photographs and National Wetlands Inventory maps were also reviewed to identify potentially suitable rare plant habitat.

Rare plants may be assigned to one or more rare plant “habitat guilds.” These guilds are artificial groupings based on similar habitat requirements of two or more rare plant species and are used for analysis, as well as coarse-filter assessments. Rare plant guilds, which can be found on the North Zone of the Idaho Panhandle National Forests include aquatic, deciduous riparian, peatland, wet forest, moist forest, dry forest, cold forest and subalpine. A list of habitat guild descriptions is included with the sensitive species list in the project file.

The coarse-filter assessment helps to guide rare plant surveys by identifying the areas with the highest potential to support rare plants in the different habitat guilds. Because the query is based in part on habitat type at the forest stand level, it tends to overestimate the actual amount of suitable habitat that occurs in an area. Conversely, microsites of suitable habitat are not identified by using the query alone. Therefore, review of stand examination plot information, aerial photographs, topographical maps and National Wetlands Inventory maps also help to guide rare plant surveys. Field botanists then use this information to perform “controlled intuitive” surveys of the project area, in which they walk through proposed treatment areas or focus areas to validate the habitat assessments of the coarse-filter query. When areas of suitable habitat are confirmed or identified within proposed treatment areas, botanists then intensively survey these areas.

### Suitable Rare Plant Habitat Initially Identified in the Project Area

Using the coarse filter query of existing vegetation information, potentially suitable moist forest, dry forest, wet forest, cold forest, deciduous riparian, and peatland habitats for rare plants were located within the general Grouse BMU Compliance Project analysis area. However, much of the suitable habitat identified for rare plants was not located within, or even adjacent to, the existing road prisms slated for treatment or those areas proposed for new road construction. Only moist forest, dry forest, and a few small areas of wet forest habitat were initially identified as occurring in close proximity to the road treatments and new road construction proposed as part of the Grouse BMU project.

### Previously Documented Rare Plants in the General Project Area

Past surveys by Forest Service personnel and others have documented rare plant occurrences on National Forest System lands within and adjacent to the Grouse BMU Compliance Project analysis area (ICDC 2015). No previously documented rare plant occurrences were located within proposed treatment areas, although some previously identified locations of moonworts were within stream corridors and riparian habitat conservation areas adjacent to proposed activities. The following species were known to occur in the analysis area before rare plant surveys for the Grouse BMU Compliance Project were conducted:

#### **Moist Forest Habitat Guild species:**

- *Botrychium lanceolatum* ssp. *lanceolatum* (sensitive species)
- *Botrychium pinnatum* (sensitive species)
- *Botrychium simplex* (sensitive species)

#### **Peatland Habitat Guild species (near McArthur Lake, along the western project boundary):**

- *Carex lacustris* (sensitive species)
- *Cicuta bulbifera* (sensitive species)
- *Lycopodiella inundata* (sensitive species)

## Field Survey Results

Botanists and field technicians conducted rare plant field surveys for this project in 2016. Intensive surveys were conducted on all roads proposed for storage, decommissioning, or those areas proposed for new road construction (part of the road rerouting effort). Wherever areas of suitable habitat were confirmed or identified, botanists and botany field technicians then intensively surveyed these areas, using controlled, intuitive methods.

Surveys confirmed that no suitable aquatic, peatland, deciduous riparian, subalpine, cold forest, or wet forest habitat for rare plants occurs within Grouse BMU proposed treatment areas. Further, surveys also revealed that most of the areas proposed for road treatments as part of the Grouse BMU project actually provide no potential or low potential to support rare plants within any of the habitat guilds, as they are currently in a highly-disturbed state (especially those roads which are actively traveled or well-used.).

However, some proposed road treatment areas contain microsites of suitable habitat for a few specific moist forest-dependent species. In particular, a suite of some *Botrychium* (moonwort) species (*B. lanceolatum*, *B. pinnatum*, *B. minganense*, and rarely *B. pedunculatum*) are more tolerant of, and may occasionally occur in, older disturbed sites, like infrequently maintained road prism-typically within untraveled edges, centerlines, or in unmaintained ditch lines. Additionally, the Grouse BMU project does include proposed new road construction (as replacement for a portion of road which is slated for decommissioning); portions of this new proposed road construction location include potentially suitable habitat for rare plants in either moist forest or dry forest habitat guilds.

### *Newly Documented Rare Plants in the Project Area*

During extensive and intensive rare plant surveys within the Grouse BMU Project, two new rare plant occurrences were discovered, including Triangle Moonwort (*B. lanceolatum*) and Green Moonwort (*B. lanceolatum* ssp. *viride*). As a result of the new rare plant occurrences and design features within this report, all newly documented rare plant populations would be protected from project activities.

*Botrychium lanceolatum* ssp. *lanceolatum* (sensitive species). Triangle moonwort is a Region One sensitive plant species and is listed as a S3 Idaho Sensitive species. This sub-species is considered a G5 rating, indicating a wide range globally. At present, twenty-one occurrences of triangle moonwort are specifically documented on the IPNF, six of which occur on the Sandpoint Ranger District and seven of which occur on the Bonners Ferry Ranger District.

*Botrychium lanceolatum* ssp. *viride* (sensitive species). Triangle moonwort is a Region One sensitive plant species (as it is grouped with *B. lanceolatum*), with recent, currently-unpublished literature indicating it will be acknowledged as a separate sub-species. At present, eighty-one occurrences of the general species (*B. lanceolatum*) triangle moonwort are documented on the IPNF, twenty-three of which occur on the Bonners Ferry Ranger District.

Copies of field surveys are included in the project file.

## Environmental Consequences

### Methodology

Analysis was conducted based on the results of rare plant surveys, current population distribution of rare plants in the project area, the most current scientific literature, and professional judgment of the project botanist.

Activities and treatments proposed as part of the Grouse BMU project have the potential to impact dry forest or moist forest dependent rare plant species or their associated habitats in a variety of ways. Rare plants have the potential to be directly affected by some activities (injury or mortality) often by physical damage, breakage, compaction, displacement, or roguing caused by soil-disturbing equipment. Rare plant individuals or populations and their associated habitats also have the potential to be indirectly impacted by proposed activities due to subsequent changes to sunlight availability, water availability or water table levels, or by influences to soils, either chemical (nutrient or mycorrhizal associations) or physical (porosity or texture). Direct effects are typically limited to the context of immediate occurrences of rare plants, while indirect influences to rare plants or their habitat become difficult to measure beyond one or two tree length distance from the affected rare plant occurrence or habitat.

For analysis of proposed road construction, decommissioning, and storage, the cumulative effects area for rare plants is generally the subbasin watersheds in which treatments are proposed to occur. This area represents the likely limit of effects to rare plant populations from implementation of the action alternatives. Those limits are largely based on the expected distance of spore or seed dispersal and potential for colonization of rare plant populations in areas of suitable habitat, as well as likely extent of indirect effects to rare plant populations or habitat in the analysis area. While patterns of dispersal are not known with certainty for many plant species, in studies of *Botrychium virginianum* most spores fell within 3 meters of the source plant (Peck et al. 1990). Other sensitive species' seeds that are heavier than *Botrychium* spores might be assumed to have similar if not more restricted dispersal patterns.

The temporal boundaries for analyzing the short-term direct, indirect, and cumulative effects to rare plants and suitable rare plant habitats is generally ten years following completion of project activities, or, in the event of selection of the no-action alternative, ten years after the date of signing the decision document. Generally, long-term effects to rare plants or their suitable habitat would be considered anything longer than ten years. Beyond ten years, the likelihood, scale, and intensity of events or activities affecting rare plants and suitable habitat is difficult to predict with certainty.

## **Proposed Grouse BMU Project**

### **Alternative 1: No Action Alternative**

The No Action Alternative would not preclude activities already approved in this area or activities planned as separate projects. Alternative 1: No Action Alternative provides a baseline of current conditions against which to compare the effects of the action alternative. Under the No Action Alternative, none of the project activities associated with the action alternatives would take place.

### **Alternative 2: Proposed Action**

#### *Road Storage*

Approximately 28 miles of road in the project area are proposed to be stored. Approximately 0.2 miles of currently opened road is proposed for storage. Only 7.7 miles of roads proposed to be stored are open for public motor vehicle travel from December 1 through March 31. The remaining miles of roads proposed for storage are not open to public motor vehicle travel.

Stored roads would no longer be drivable; they would be blocked with an earthen berm or a short section would be recontoured to match the original slope of the land. High-risk drainage structures would be removed and additional drainage, such as waterbars, would be installed. Culverts could be removed with machinery or by using explosives.

Stored roads would be stable, have little surface erosion, and no anticipated maintenance. They would remain part of the Idaho Panhandle's transportation system and could be reopened in the future. Roads stored to meet requirements for grizzly bear core habitat would remain stored for at least ten years. Storage would reduce road maintenance costs and reduce the risk of roads failing and adding sediment to streams.

The existing condition of, and proposed actions for, the roads are described below. Roads not discussed in the proposed action would remain as currently designated on the current motor vehicle use map. The proposed road storage activities are anticipated to begin in the summer or fall of 2018 and continue for approximately 2 to 3 years.

**Table 1. Grouse BMU Project Affected Roads**

<b>FS Road</b>	<b>Length of Proposed Storage (Miles)</b>	<b>Existing Condition</b>	<b>Proposed Action</b>	<b>Comments From Road Surveys</b>
215	3.8	Gated, but open seasonally to public motorized access from December 1 through March 31.	The first 1.5 miles of the road would remain open seasonally to the public from December 1 through March 31. The remaining miles would be stored and no public motorized access would be allowed.	Road is currently drivable
215A	0.8	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is currently drivable
2236	1	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Brush has been cleared, drivable
2236A	1.9	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Brush has been cleared, drivable
2625C	1	Gated, but open seasonally to public motorized access from December 1 through March 31.	The first 0.3 miles of the road would remain open seasonally to the public from December 1 through March 31. The remaining miles would be stored and no public motorized access would be allowed.	Road is brushed in not drivable.
2636	4.1	Gated, not open to public motorized access	The road would be stored (the portion on NFS lands). No public motorized access would be allowed.	Road is brushed in, may be atv drivable down the middle.
2656B	2.5	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is brushed in, may be atv drivable down the middle.
2656B1	0.5	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is brushed in, may be atv drivable down the middle.
2656C	1	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is brushed in, may be atv drivable down the middle.

FS Road	Length of Proposed Storage (Miles)	Existing Condition	Proposed Action	Comments From Road Surveys
2656E	0.8	Gated, but open seasonally to public motorized access from December 1 through March 31.	This road would be stored. No public motorized access would be allowed.	Road is brushed in not drivable
2686A	1.9	Gated, but open seasonally to public motorized access from December 1 through March 31.	This road would be stored starting at the NFS boundary. No public motorized access would be allowed.	
2693A	0.4	Gated, but open seasonally to public motorized access from December 1 through March 31.	This road would be stored. No public motorized access would be allowed.	Road is brushed in not drivable.
2695	3.9	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is brushed in not drivable.
2742	2.9	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is brushed in not drivable.
2743	0.8	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is brushed in not drivable.
2743A	0.3	Gated, not open to public motorized access	This road would be stored. No public motorized access would be allowed.	Road is brushed in not drivable.

*Undetermined Roads 215UC, 2236UA, 2656BUA, 2656BUAA, 2636UC, 2686AUB, 2686AUD, 2686AUA, 2686AUC, and 729UV.*

Existing condition: Generally impassable. They do not provide legal public access.

Proposed action: Approximately 2.7 miles of undetermined roads would be closed. Proposed work would remove any resource risks associated with these routes, and the road prism would be in an impassable state to discourage illegal use.

The proposed storage action minimizes impacts to other land owners in the project area and impacts to public access (to the extent feasible) while still meeting required Grouse bear management unit standards. TAPs was conducted for this project to assist with identifying roads to be stored to meet standards for the bear management unit. Access for fire protection and future management were the primary reasons roads were stored rather than decommissioned.

#### *Road Re-route and Decommission*

The re-route of a section of the Grouse Creek Road (Forest System Road 280) from the bridge over North Fork Grouse Creek to approximately the Wylie Knob trailhead is also proposed. Completion of the Grouse Creek Road re-route is anticipated in the next ten years. However, the re-route would require an agreement with Hancock Forest Management and the landowner, and we would need funding to do the work.

Lower Grouse Creek Road FSR#280 in sections 20, 21, 16, and 15 between North Fork Grouse Creek and Wylie Creek Trailhead has a history of road maintenance problems. Several locations encroach upon the Grouse Creek floodplain and frequently wash out or route flood waters down the road.

The length of the re-route is 2.03 miles, which includes 1.38 miles of road decommissioning, and 1.5 miles of new road construction. The length of existing Grouse Creek road that the reroute replaces is 1.96 miles. As part of the decommissioned length of the re-route, approximately 0.32 miles of decommissioned road through Grouse meadows would be restored, using native vegetation and would have restricted access.

### *Features Designed to Protect Rare Plants*

1. A qualified botanist would assist with project design to ensure protection of documented rare plant populations and microsites of highly suitable habitat. Any changes to the selected alternative that may occur during layout would be reviewed by the North Zone Botanist, and rare plant surveys conducted as necessary prior to project implementation. Newly- documented occurrences would be evaluated, with specific protection measures implemented to protect population viability. Such measures could include the following:
2. Any changes to the proposed action that may occur during layout would be reviewed by a qualified botanist, and rare plant surveys would be conducted as necessary prior to project implementation. Newly documented occurrences would be evaluated, with specific protection measures implemented to protect population viability. Such measures could include the following:
  - a. Dropping units from harvest activity;
  - b. Modifying unit boundaries to provide adequate buffers around documented occurrences, as determined by a qualified botanist and based on topography, extent of contiguous suitable habitat for documented occurrences and the type of treatment proposed;
  - c. Modifying harvest methods, fuels treatment or logging systems to protect rare plants and their habitats; and/or
  - d. Implementing, if necessary, Contract provisions B6.24, Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources; C6.24#- Site Specific Special Protection Measures; and B8.33, Contract Suspension and Modification.
3. Rare plants were located within the proposed activity areas. No road blading, ground disturbance (road recontouring, closure devices, staging, etc.), or broadcast weed treatment should occur within fifty feet of the plant locations. (Some, limited, spot spray or wipe-on weed treatment may occur within five feet of flagged plant locations or right up to the plant locations, if in the presence of a qualified botanist in order to verify plant identification.) A qualified botanist would assist with project design associated with the FSR215 and FSR2236 roads in order to adequately protect these rare plant locations.
  - a. One location (three individuals) of triangle moonwort (*Botrychium lanceolatum*, a G5S3 sensitive species) was found within proposed activity areas within the FSR2236 prism, in particular the first three hundred feet. Road closure activities proposed near the EO (including location of closure device) would need to be modified to prevent damage to the occurrence. During contract development and project implementation, the project botanist will be consulted to ensure adequate protection for this occurrence is provided.
  - b. One location (eight individuals) of green, triangle moonwort (*Botrychium viride*-previously *B. lanceolatum* ssp. *viride*, a G5S3 sensitive species) was found within

proposed activity areas near Grouse Creek and private lands, along the eastern extent of the FSR215 prism. During contract development and project implementation, the project botanist will be consulted to ensure adequate protection for this occurrence is provided, if closure activities are prescribed in the vicinity.

### Effects Analyses

Effects to rare plant species and associated suitable habitat as a result of Grouse BMU project proposed activities will be summarized using the following qualifiers.

- **no** or **very low** = no measurable effect on individuals, populations or habitat
- **low** = individuals, populations and/or habitat not likely affected
- **moderate** = individuals and/or habitat may be affected, but populations would not be affected, and habitat capability would not over the long term be reduced below a level that could support sensitive plant species
- **high** = populations would likely be affected and/or habitat capability may over the long term be reduced below a level that could support sensitive plant species

The following past, current, ongoing and reasonably foreseeable events within the project area were analyzed, with respect to the cumulative effects analysis for rare plants, when direct or indirect effects were confirmed:

**Table 2. Past, present, and reasonably foreseeable actions**

Action	Past	Present	Reasonably Foreseeable	Level of Cumulative Effects	Explanation
Timber harvest on NFS Lands	X	X	X	Very Low to Moderate	Timber harvest often affects both primary issue indicators- changes in canopy coverage and soil disturbance- for rare plants. Typically, silvicultural practices such as thinning or harvest mechanisms such as skyline, helicopter yarding, or operations on snow or frozen soils result in very low to low cumulative effects on rare plants. Silvicultural activities such as regeneration harvest or harvest mechanisms such as ground-based yarding can result in moderate cumulative effects to rare plants. Therefore, such activities would likely result in a range of <b>very low to moderate</b> cumulative effects on rare plants potentially affected by the Grouse BMU project.
Timber harvest on private lands and industrial lands	X			Low to Moderate	The level of impact that past timber harvest on private lands has had on rare plants is difficult to quantify. Timber harvest on private lands in the Grouse Creek watershed has likely impacted the overall base of

Action	Past	Present	Reasonably Foreseeable	Level of Cumulative Effects	Explanation
					<p>suitable habitats in which rare plants can occupy and maintain viability. Effects of timber harvest on private lands would be similar to effects of timber harvest on NFS lands (described above.) However, rare plant inventories on private lands are often lacking; therefore, presence/absence of rare plants or suitable habitat for rare plants is undocumented. As a result, we should assume that the existing condition of rare plants has been potentially affected (i.e., habitat reduced, populations negatively impacted) by private land timber harvest in the analysis area. However, impacts to rare plants or habitats on private lands do not directly or indirectly affect rare plants located within the proposed activity area. Therefore, timber harvest on private lands does not have a cumulative effect on rare plants or habitat within the Grouse BMU proposed activity area.</p>
<p>Prescribed burning for site prep and fuels treatment</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>Low to Moderate</p>	<p>Prescribed burning can affect both issue indicators- changes in canopy cover and soil/ground disturbance – for rare plants. Direct soil disturbance within the proposed activity area resulting from fireline construction is possible. However, where burning is more intense (such as in heavier ground fuels), plants can be either directly consumed by fire or indirectly affected by changes to canopy cover or potential changes to soils. Such activities would likely result in <b>low to moderate</b> cumulative effects on rare plants affected by the Grouse BMU project.</p>
<p>Public activities: firewood cutting, driving roads, camping, snowmobiling, hunting, hiking, berry picking</p>	<p>X</p>	<p>X</p>	<p>X</p>	<p>Very Low to Low</p>	<p>Again, on a very small scale, some public activities in the analysis area have the capacity to result in confined areas of soil disturbance or changes in canopy coverage (i.e., cutting/skidding firewood trees). Such activities likely result in a <b>very low to low</b> cumulative effect on rare plants affected by the Grouse BMU project.</p>

Action	Past	Present	Reasonably Foreseeable	Level of Cumulative Effects	Explanation
Road maintenance and reconstruction activities	X	X	X	Very Low	Road maintenance can have the same potential effects on rare plants as road construction and decommissioning, except that the disturbance is on a much reduced scale and the site is already disturbed by the presence of the road anyway. Such activities would have a <b>very low to low</b> cumulative effect on rare plants affected by the Grouse BMU project.
Fire suppression	X	X	X	Low	Some fire suppression activities (such as fireline construction and back-burning) have the capacity to impact rare plants, predominantly through soil disturbance. Such impacts would have a <b>low</b> cumulative effect on rare plants affected by the Grouse BMU project.
Trail construction	X			Low	Trail construction can have some effect on rare plants due to soil disturbance and displacement. However, because the scale is so limited, impacts would typically only affect individual rare plants or small subpopulations. Therefore, the cumulative effect on rare plants affected by the Grouse BMU project would be <b>low</b> .
Trail maintenance	X	X	X	Very Low	Again, although there is some possibility of soil disturbance within the proposed activity areas caused by trail maintenance activities, the scale of impacts to rare plants is very small. Therefore, the cumulative effect on rare plants affected by the Grouse BMU project is <b>very low</b> to those plants.

Action	Past	Present	Reasonably Foreseeable	Level of Cumulative Effects	Explanation
Pre-commercial timber stand improvement	X			Very Low	Pre-commercial timber stand improvement activities involve pruning and thinning young, sapling-size trees prior to canopy closure. As such, these activities have the effect of lengthening the time a stand will take to reach canopy closure, which can create the shade needed by <i>some</i> moist habitat rare plant species. However, the changes to canopy closure are considered nominal (<~10% change) and typically short-term (<10 years) in nature. Therefore, the cumulative effect on rare plants affected by the Grouse BMU project would be <b>very low</b> .
Clearing brush and trees to maintain helispots	X	X	X	Very Low	Clearing brush and trees for helispots impacts canopy cover and even occasionally creates soil disturbance in very confined areas. However the area of impacts would be extremely limited in scale, so any potential impacts to rare plants would be <b>very low</b> and would likely only impact individual plants or small subpopulations.

Action	Past	Present	Reasonably Foreseeable	Level of Cumulative Effects	Explanation
Development on private lands	X	X	X	None	<p>The level of impact that past, ongoing, and future private land development has on rare plants is difficult to quantify. However, most land development involves soil disturbance through road construction and building activities, and occasionally also involves changing forest canopy cover. Historically, many land developments were established near water, which also tends to be suitable habitat for many rare plant species, including moist and wet forest, peatland, deciduous riparian, and aquatic habitat guild rare species. Such impacts would generally be considered localized; however, due to the number and “permanency” of the impacts resulting from development, impacts to rare plants can be severe. However, no private land development is directly or indirectly affecting rare plants within the proposed Grouse BMU activity area. Therefore, <b>no to very low</b> cumulative effects would result from such activities.</p>

## Effects Common to Alternative 1 and Alternative 2

### *Threatened and Endangered Plant Species*

Field botanical surveys are routinely conducted for projects on the Kaniksu National Forest portion of the Idaho Panhandle National Forests (also referred to as the “north zone”) in potentially suitable habitats for water howellia (*Howellia aquatilis*) and Spalding’s catchfly (*Silene spaldingii*), both of which are federally listed threatened species, and no occurrences of either species have been documented to date. Activity areas in the Grouse BMU project were field surveyed in 2016, and no potentially suitable habitat for, or occurrences of, threatened or endangered plant species was found. Therefore, both no action (Alternative 1), as well as the Grouse BMU proposed action (Alternative 2) will result in no direct, indirect, or cumulative effects to threatened or endangered plant species.

### *Sensitive Species*

Surveys confirmed that no suitable aquatic, peatland, deciduous riparian, subalpine, cold forest, or wet forest habitat for sensitive plants occurs within or in close proximity to Grouse BMU proposed treatment areas. As a result, these habitats (and their associated species) will not incur direct, indirect, or cumulative effects, as a result of the Grouse BMU project. Therefore, both the no action (Alternative 1), as well as the Grouse BMU proposed action (Alternative 2) will result in no direct, indirect, or cumulative effects to aquatic, peatland, deciduous riparian, subalpine, cold forest, or wet forest habitats, or those sensitive plant species dependent upon those habitats.

## Effects Specific to Alternative 1 (No Action)

### *Sensitive Species*

Alternative 1 would maintain all current road categories as they are now. No new road construction, storage, or decommissioning activities would occur as part of this project; however, ongoing activities would continue.

As a result, the FSR280 re-route would not occur. Currently, FSR280 runs through Grouse Creek meadow, and due to its proximity to both the road and nearby dispersed and developed recreation, the meadows have become a popular spot for illegal, off-road motor vehicle use. That illegal activity has caused numerous intrusions and degradation of native meadow habitat. Therefore, if the road re-route does not occur, there would not be an opportunity to effectively eliminate illegal, off-road motor vehicle use and potentially restore the native meadow vegetation. Once restored, the meadow may provide suitable habitat for various sensitive moonwort species, as well as other moist forest and deciduous riparian dependent sensitive plant species.

## Effects Specific to Alternative 2 (Proposed Action)

### *Sensitive Species*

The Grouse BMU project would implement approximately 28 miles of road storage, 1.38 miles of road decommissioning, and 1.5 miles of new road construction activities. Storage and decommissioning activities generally involve removal of culverts and drainage structures, closure device installation (rocks, berms, gates, or other barriers), and in some cases, short distances of slope re-contouring. Decommissioning activities may also include ripping (or decompacting) of the road prism where necessary, re-distributing slash and debris on the road prism, as well as revegetation and meadow restoration efforts. New road construction activities include clearing trees and vegetation, completely disturbing a swath of vegetation and soils to build a road prism

(cut bank, travelway, and fill slope) of varying widths (depending upon side slope), and installing drainage structures to allow water to drain away from the road.

### Moist Forest Guild Habitat

Surveys confirmed suitable habitat, potentially capable of supporting moist forest habitat-dependent rare plants (especially *Botrychium lanceolatum*- both subspecies, *B. minganense*, and *B. pinnatum*), in microsites along many of the roads proposed for storage and decommissioning, as well as a few microsites along the location proposed for new road construction (as part of the FSR280 re-route). Two *B. lanceolatum* occurrences were discovered during surveys, in two distinct areas, on two different routes proposed for treatment; however, the occurrences will be protected from site-specific activities.

Existing roadside areas slated for storage or decommissioning are not generally considered to be highly suitable habitat for rare plants, although a few species occasionally occur associated with very infrequently-maintained old road prisms. In particular, *Botrychium lanceolatum* ssp. *lanceolatum*, *B. lanceolatum* ssp. *viride*, and *B. pinnatum* have been documented along unmaintained roads, especially between wheel tracks or along undisturbed cutbanks. Very infrequently, especially near wet forest habitat, *B. minganense* has also been observed. Documented, scattered populations of these moonwort species occur throughout the Sandpoint and Bonners Ferry Ranger Districts on NFS lands, generally in more favorable moist and wet forest habitats where known occurrences are protected from management activities wherever feasible. *B. lanceolatum* ssp. *lanceolatum* (S3), *B. minganense* (S3), and *B. pinnatum* (S2) are scattered but fairly well-distributed across the forest (planning area) and within the project area.

As a result, there is potential that road storage or decommissioning activities could directly affect (damage or destroy) undiscovered, individual plants of these moonwort species, or indirectly, as soil displacement caused by these road-associated activities could move or bury individual plants. Additionally, such road treatments could indirectly affect these species' habitat, at least in the short term until successional processes continue to the point that stored or decommissioned roads begin revegetating and recover some natural habitat functions. Additionally, indirectly, road storage and decommissioning could in the long-term actually provide more sensitive plant habitat, thereby increasing potential future habitat. Therefore, road storage and decommissioning activities would not likely affect the population viability, in the long term, of those species most likely to occur in those routes proposed for treatment.

New road construction, through the action of soil displacement and compaction, has the potential to directly impact undetected, individual sensitive plants in whatever habitat it occurs within. This proposed new road construction equals approximately five acres of soil disturbance, a portion of which may provide suitable habitat for moist forest -dependent sensitive plant species. Because this is new, permanent road construction, that potential loss of undetected sensitive plants and their associated habitat is expected to be long term or permanent. However, because the area of impact is a small fraction of nearby, undisturbed, suitable habitats that will remain undisturbed, and because the area was intensively surveyed with no rare plants found, the loss or impact of undetected individual rare plants is not expected to result in a loss of population viability for any sensitive plant species likely to occur in that habitat.

Therefore, the predicted direct and indirect effects resulting from implementation of the Grouse BMU project (Alternative 2) on *B. lanceolatum*, *B. minganense*, and *B. pinnatum*, as well as their associated moist forest habitat, is expected to be low to moderate.

### **Dry Forest Guild Habitat**

No populations of sensitive plants associated with dry forest habitat guilds were located within the Grouse BMU project; however, some suitable habitat that could support dry forest-dependent sensitive plants was confirmed within a few roadside microsites, as well as a portion of the new road construction area (part of the FSR280 re-route). Although those areas of suitable habitat were surveyed intensively, some dry forest dependent sensitive plants do not emerge annually or are very difficult to detect due to short above-ground lifespans. Therefore, some undetected individuals could be present in the area. In particular, there is potential habitat for *Cypripedium fasciculatum* (Region One sensitive species); however, no populations of that species in Idaho have been located north of the Clark Fork River, so that habitat potential is very slight. Additionally, this species is a G4, S3 Idaho-listed species, with regional distribution. At present, there are thirty-two populations of this species on the IPNF, two of which occur on the Sandpoint Ranger District, with several hundred individuals in these populations.

The Grouse BMU proposed road decommissioning and storage activities are not likely to have an effect on this species or the dry forest habitat on which it depends, because the primary areas of disturbance related to road decommissioning and storage occur within the road prism and drivable road surface. The potential dry forest habitat located during surveys generally occurred upslope of proposed activities or along cut banks and fill slopes- not on the drivable road surface. Therefore, direct effects to undetected, dry forest dependent sensitive plant species, or their associated habitats are unlikely. Indirectly, the proposed activities (ripping, drainage feature removal, closure device installation) have the potential to influence soil function and water availability adjacent to dry forest habitats. However, because these changes should somewhat restore hydrologic conditions to those similar to pre-disturbance, this influence is not likely to cause significant changes to habitat function or suitability for sensitive plant species occupation.

The Grouse BMU proposed road construction has the potential, through the action of soil displacement and compaction, to directly impact undetected, individual sensitive plants in whatever habitat it occurs within. This proposed new road construction equals approximately five acres of soil disturbance, a portion of which may provide suitable habitat for dry forest-dependent sensitive plant species. Because this is new, permanent road construction, that potential loss of undetected sensitive plants and their associated habitat is expected to be long term or permanent. However, because the area of impact is a small fraction of nearby, undisturbed, suitable habitats that will remain undisturbed, and because the area was intensively surveyed with no rare plants found, the loss or impact of undetected individual rare plants is not expected to result in a loss of population viability for any sensitive plant species likely to occur in dry forest habitat.

### **Past Activities and Events**

Past wildfires, mining, timber harvest on National Forest System (NFS) lands, as well as road and trail construction or maintenance may have affected rare plants and rare plant habitat through ground and vegetation disturbance and canopy removal. Few floristic surveys were conducted on National Forest System lands before 1990, so the extent of, and the effect on, rare plant populations of older projects is unknown. Timber harvest on National Forest System lands after 1990 occurred with protections for rare plants.

Timber harvest and residential development on private lands likely affected rare plants and suitable rare plants habitat, although the extent of such effects is unknown.

### Current and Ongoing Activities

Road, trail and heli-spot maintenance, as well as noxious weed treatment activities associated with roads would occur in areas with already disturbed conditions and low suitability as rare plant habitat. Therefore, no effects to dry forest habitat and low effects to moist forest habitat are expected to occur as a result of these ongoing activities.

Timber harvest and residential development on private lands may continue to impact rare plants and suitable rare plant habitat, but the effects of such activities are unknown.

### Reasonably Foreseeable Actions

Noxious weed treatment and monitoring would follow guidelines established in the Bonners Ferry Noxious Weeds Control Project EIS (USDA 1995) and Sandpoint Ranger District Noxious Weed Control EIS (USDA 1998). Effects to rare plant species were analyzed in those decision documents regarding treatments along specified roads. Generally weed treatment occurs on roads infested with weeds. Severely infested noxious weed areas and areas impacted by roads are considered as low suitability habitat for rare plants. No suitable habitat for rare plants would be impacted in the long term; however, there is potential for herbicide treatments to affect undetected sensitive plants dependent upon moist forest habitat, particularly *B. lanceolatum*, *B. minganense*, and *B. pinnatum*. Furthermore, control or containment of noxious weeds has an indirect effect on rare plants by preventing noxious weed spread into otherwise suitable rare plant habitats. Therefore, although herbicide use for the control of noxious weeds has the potential to directly affect individual plants, cumulative impacts to rare plant species would be very low to low.

## Summary Determination of Cumulative Effects Specific to Alternative 2

### *Sensitive Plants*

When combined with and considering the above past, present, and reasonably foreseeable activities, alternatives 2 **low** cumulative effects (i.e., no measurable effects) to rare plants and/or suitable habitat within the dry forest habitat guilds and **low to moderate** cumulative effects (i.e., individual plants or habitat may be impacted, but would not result in a loss of population viability) to rare plants and/or suitable habitat within the moist forest habitat guilds.

## Compliance with Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

The proposed action has been reviewed and is determined to be in compliance with the management framework applicable to this resource. The laws, regulations, policies and Forest Plan direction applicable to this project and this resource are as follows:

### Land and Resource Management Plan

#### *Land and Resource Management Plan - Guidelines*

The Idaho Panhandle National Forest Land and Resource Management Plan (forest plan) (USDA 2015) provides standards and guidelines for protection and population viability of federally listed and regionally listed plant species.

- ◆ FW-GDL-VEG-07. Evaluate proposed management activities and project areas for the presence of occupied or suitable habitat for any plant species listed under the Endangered

Species Act or on the regional sensitive species list. If needed, based on pre-field review, conduct field surveys and provide mitigation or protection to maintain occurrences or habitats that are important for species sustainability.

This guideline meets the requirements of the National Forest Management Act (NFMA) of 1976, Section 6(g)(3)(B), by providing for diversity of plant communities based on the suitability and capability of the specific land area. The entire Grouse BMU project area was assessed by the project botanist, and all potential habitat within proposed treatment areas was appropriately surveyed for rare plants. Because all known rare plant occurrences would be protected from activities proposed as part of the Grouse BMU project, all rare plant species should be sustained within the project area. Therefore, this project is in compliance with forest plan guideline FW-GDL-VEG-07.

### *Land and Resource Management Plan - Management Area Direction*

The management areas within the Grouse BMU project area are MA6 (General Forest) and MA5 (Backcountry). The remainder of the Hanna Flats GNA project area occurs within General Forest and Backcountry, which provides oversight and guidance for general forest management, including road treatment activities, proposed as part of the Grouse BMU project. All geographic and management areas described in the forest plan are also governed by the over-arching guideline (FW-GDL-VEG-07) described above which affords protection to rare plant species to assure species sustainability. Therefore, the Grouse BMU project is in compliance with all forest plan direction related to rare plants.

### **Federal Law**

Federal legislation, regulations, policy, and direction require protection of species and population viability, evaluation and planning-process consideration of threatened, endangered, and other rare plant species. The regulatory framework for these plants includes the Endangered Species Act (1973) as amended; the National Forest Management Act (NFMA) (1976); the National Environmental Policy Act (NEPA) (1969); Forest Service Manual (2672.1-2672.43); and direction from the Regional Watershed, Wildlife, Fisheries and Rare Plants (WWFRP) program and Washington Office.

The IPNF forest plan management guidelines include “Evaluate proposed management activities and project areas for the presence of occupied or suitable habitat for any plant species listed under the Endangered Species Act or on the regional sensitive species list. If needed, based on pre-field review, conduct field surveys and provide mitigation or protection to maintain occurrences or habitats that are important for species sustainability.” (FW-GDL-VEG-07, USDA 2015)

This guideline meets the requirements of the National Forest Management Act (NFMA) of 1976, Section 6(g)(3)(B), by providing for diversity of plant communities based on the suitability and capability of the specific land area. The entire Grouse BMU project area was assessed by the project botanist, and all potential habitat within proposed treatment areas was appropriately surveyed for rare plants. Design features to protect all documented occurrences from proposed activities were included as part of the project development, so the IPNF FW-GDL-VEG-07 will be met by implementation of the Grouse BMU project.

The forest plan also identifies a desired condition of “Habitat for plant species listed under the Endangered Species Act [ESA] is maintained or restored on NFS lands, thus contributing to species recovery or delisting. Ecological conditions and processes that sustain habitats currently or potentially occupied by sensitive plant species are retained or restored. The geographic

distributions of sensitive plant species in the Forest Plan area are maintained.” (FW-DC-VEG-09, USDA 2015) Neither habitat for, nor occurrences of, federally-listed threatened or endangered plant species is present within the Grouse BMU proposed activity areas. Implementation of the Grouse BMU project would not affect currently or potentially-occupied habitat for rare plants in the long-term; all ecological processes related to those habitats would be retained. Furthermore, no known occurrences of rare plants within the project area would be affected by implementation of the Grouse BMU project.

There are no federally listed threatened or endangered species suspected to occur in Bonner County or Boundary County, Idaho (USDI 2018). Furthermore, as stated, neither habitat for, nor occurrences of, threatened or endangered plant species were observed during intensive floristic surveys of the Grouse BMU project. Therefore, the project is consistent with the Endangered Species Act (1973) as amended.

Across the Idaho Panhandle National Forests, suitable habitat for sensitive plant species appears to be well distributed. Approximately 705,000 acres have been identified as having the potential to support sensitive plant species in a wide array of plant communities. To date, approximately 122,003 acres (about 17 percent) of suitable habitat has been surveyed for sensitive plants.

In 1998, sensitive species trends across the Idaho Panhandle Forests were qualitatively assessed (USDA Forest Service 1998, pp. 112-116). Of the sensitive plant species assessed, 11 species were considered to have fairly secure populations with stable trends and few observed threats; 28 species had mostly stable populations with some concerns and threats; and for 16 species there was a serious concern. Estimates for this assessment were based on the best information available, including known population size, distribution and threats.

The trends for sensitive moonworts ranged from stable (*Botrychium lanceolatum* ssp. *lanceolatum* [S.G. Gmelin] Angstrom) to serious concerns for population and habitat decline over time (*B. montanum* W.H. Wagner). A conservation assessment for sensitive moonworts in the Idaho Panhandle National Forests has been prepared (Evans and Associates 2005).

At the project level, and in accordance with Forest Service Manual (FSM) 2672.1-2672.43 and NFMA Section 6(g)(3)(E)(ii), suitable habitat has been identified and surveyed and the appropriate level of analysis conducted. All documented rare plant occurrences and their contiguous habitat would be buffered from all project activities under the action alternative. Protection measures for the documented moonwort occurrences are consistent with the most current scientific literature (Johnson-Groh and Farrar 2003).

Because all known rare plant occurrences would be protected from activities proposed as part of the Grouse BMU project, this project is in compliance with all species sustainability and environmental laws and direction pertaining to rare plant species, including NFMA, NEPA, Forest Service Manual direction (2672.1- 2672.43), and WWFRP direction.

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