

# WILDERNESS EVALUATION

## HALL MOUNTAIN – 621020

**7,919 acres**

### OVERVIEW

#### History

This Potential Wilderness Area (PWA) was originally part of the Grassy Top Roadless Area, and it was initially inventoried in the first Roadless Area Review and Evaluation (RARE I). It was not selected as wilderness. In the second Roadless Area Review and Evaluation (RARE II) the area was not recommended for wilderness designation. Timber harvest activity in the area has eliminated a portion of it from a roadless condition.

The 2006 inventory divided the Grassy Top IRA into two areas. This area was detached from the larger IRA, and is now called Hall Mountain Potential Wilderness Area. This narrative only pertains to the portion that is now called Hall Mountain PWA. The portion that is still attached to the larger portion on the Idaho Panhandle National Forest is still called Grassy Top PWA and is described in its own Wilderness Evaluation document.

The 2006 inventory removed approximately 7,797 acres from previous inventory due to nonconforming uses such as road construction and logging; 122 acres were added to the previous inventory as they met the criteria for a potential wilderness area as described in Forest Service Handbook (FSH) 1909.12, Chapter 70. The following chart depicts the current 1988 Colville National Forest Land and Resource Management Plan direction for the 2006 inventoried area.

**Table 1--Management area percentages (rounded)**

<b>MA1 Old Growth Dependant Species Habitat</b>	<b>MA11 Semi- primitive, Non- motorized Recreation</b>	<b>MA2 Caribou Habitat</b>	<b>MA3A Recreation</b>	<b>MA5 Scenic Timber</b>	<b>MA6 Scenic/ Winter range</b>	<b>MA7 Wood/ Forage</b>
6	28	9	2	25	1	28

#### Location and Access

The area is located in northern Pend Oreille County, Washington, 90 miles north of Spokane, Washington. Primary access is seven miles from Ione, Washington, seven miles west of the area. Access is via the North Fork Harvey Creek Road (Forest Road 1935035) and the Johns Creek Road (Forest Road 2200500). The North Fork Harvey Creek Road is accessed from the Harvey Creek Road (Forest Road 1935000) from the Sullivan Lake Road (County Road 9345). The Johns Creek Road is accessed from the Nordman-Metaline

Road (Forest Road 2200000) from the Sullivan Lake Road. The Sullivan Lake Road is accessible from State Highway 31 in two places.

### **Geography and Topography**

The Selkirk Mountain Range lies between the Okanogan Highlands landform province on the west and the Rocky Mountain Trench on the east. The Hall Mountain Proposed Wilderness Area (PWA) lies west of the Pend Oreille River and Sullivan Lake. The geologic structure in the area is complex due to repeated continental glaciation.

The dominant topographic feature of the area is Hall Mountain. From Hall Mountain the area lies south across Noisy Creek, over a steep ridge and down to Harvey Creek.

The area extends east from Hall Mountain along the ridge towards Grassy Top Mountain, and falls away to the west down to Sullivan Lake. Elevations range from 2,600 feet at Sullivan Lake to 6,222 feet, a mile and one-half away, at Hall Mountain. Cirques on the north side of Hall Mountain indicate there were mountain glaciers in the geologic history of this area.

### **Current Uses**

Primary recreation use is hiking, horseback riding, mountain biking, primarily concentrated on or near the trails. In the fall, the area is used by hunters. Bighorn sheep provide opportunities for wildlife viewing on Hall Mountain.

### **Appearance and Surroundings**

The general appearance of the area is of a rolling to steep mountainous terrain. Hall Mountain forms a scenic backdrop on the east side of Sullivan Lake. The contrasts in seasonal colors and the textures of the vegetation around Hall Mountain provide a mosaic of views from the lake area.

This area offers a wide variety of spectacular scenery from the Hall Mountain trails, and the Sullivan Lake Trail. The trails pass through a wide variety of vegetation types and their associated ecosystems. From the top of Hall Mountain, there are long distance views to the north into Canada, west across the Pend Oreille valley and south up the Pend Oreille valley.

### **Key Attractions**

There are opportunities for observing Rocky Mountain bighorn sheep on Hall Mountain in the spring and fall. In past winters the bighorn sheep came to a feeding station which was maintained by the Washington State Department of Fish and Wildlife (WDFW) just outside the PWA. During the winter hundreds of people came to view the bighorn sheep at the feeding station. The feeding program was terminated and the structures removed in 2002 when it was determined that the program was no longer consistent with WDFW management objectives and posed a hazard to the safety of the animals and visitors coming to view them.

In addition to the bighorn sheep on Hall Mountain, black bear, deer, elk, cougar, bobcat, moose, and many small animals and birds common to the Colville National Forest may be

found in the area. Most of this unit has been identified as grizzly bear habitat, and caribou habitat in the upper elevations.

Hall Mountain is the predominant natural feature within the unit and is the visual focal point from most vantage points looking into the area. It is the terminus of a 2.5 mile long trail which provides panoramic views of the area.

The north side of the mountain is a visual contrast of steep, rocky slopes and ravines.

Noisy Creek is the only major stream within the unit. It has no fishery potential. There are no lakes within the area. Sullivan Lake lies immediately to the west of the PWA. The Sullivan Lake Trail is a National Recreation Trail.

## **CAPABILITY FOR WILDERNESS**

### **Level of natural and undeveloped environment**

The area is generally natural appearing and undeveloped.

The Hall Mountain PWA lacks a sense of remoteness due to a variety of sights and sounds. Motorboats can be heard on Sullivan Lake all the way to the top of Hall Mountain, and traffic along the road can be heard. Clearcuts are visible in the Noisy, Harvey, Pass, and Johns Creek drainages, and old mining roads are present in the lower portion of Noisy Creek.

The last major natural change evident in the area was when most of the area burned over in one of the major fires of 1926 and 1929. The largest influence of humans has been the control of wildfires in the last 45 years. This influence is encouraging succession to continue toward a climax condition.

Introduced species include bighorn sheep. Noxious weed inventory data is not available for this PWA.

Water quality data is not available for most of the PWA, however due to the relatively low-level disturbance water quality is assumed to be high. Sullivan Lake is classified by the Washington State department of Ecology as Category 2, waters of concern, which means there is some evidence of a water quality problem, but it does not require a water quality cleanup plan.

The Hall Mountain PWA is mostly impaired by light pollution from the Metaline and Ione area. The eastern portion of the PWA (7 percent of the PWA) rates a Class 2 on the Bortle Scale, whereas the western portion (93 percent of the PWA) rates as a Class 3. A Class 2 Typical Truly Dark Sky represents the darkest skies viewed in the continental United States. The summer Milky Way is highly structured to the unaided eye. Any clouds in the sky are visible only as dark holes or voids in the starry background. No light domes from population centers are visible. A Class 3 Rural Sky has some indication of light pollution on the horizon. Clouds may appear faintly illuminated in the brightest parts of the sky near the horizon, but are dark overhead. The Milky Way still appears complex. Light domes from population centers may appear on the horizon (10-15 degrees above horizon). Visual

observing is still relatively unimpaired. Time-lapse photography could be impaired by light pollution.

### **Outstanding opportunities for solitude or primitive and unconfined recreation**

Hikers on the Noisy Creek Trail (Trail 588) may experience a sense of solitude due to the primitive setting of the trail and the dense stands of timber through which the trail passes.

The north slope of Hall Mountain provides cross-country hiking through dense conifer stands. Physical solitude is a very real possibility here, although some noise from developed sites on Sullivan Lake and nearby logging may be audible. From the top of Hall Mountain only a small part of nearby Sullivan Lake is visible. The noises that reach the top of the mountain are offset by the panoramic views and visual isolation from signs of human disturbance. Primitive recreation opportunities in this area include hiking, horseback riding, mountain biking, hunting, wildlife photography, panoramic scenery, nature study, and some camping. The streams are not large enough for water sports or fishing. Winter activity is limited by the steep terrain, deep snow, and amount of access.

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### **Special Features**

Habitat for the threatened grizzly bear and the endangered caribou is being managed in this area. A large portion of the area is identified as potential habitat for grizzly bear in the Sullivan-Hughes grizzly bear management unit.

Habitat for pileated woodpeckers, American marten, goshawks, and wolverine exist in this area. Three to four hundred acres have been set aside in this area as a management area for old growth dependent species. This area will eventually support a climax vegetation community and its associated wildlife.

There has been some scientific study of the bighorn sheep herd on Hall Mountain.

There is a rock feature known to be of spiritual importance to American Indian tribes.

### **Manageability of Boundaries**

The west and south boundaries are in acceptable locations for managing this area. These boundaries avoid existing or potential uses that might result in demands to enter the area with non-conforming activities or structures. The greater portion of these two boundaries can be accurately described and easily found on the ground. The boundaries limit use inappropriate to PWAs; however, they are not located where they could shield the user from the sights and sounds of human activity.

The north and east boundaries are in poor locations to stop non-conforming use or to act as a shield from sights and sounds of human activity. These two boundaries skirt the edges of existing timber harvest units where recurring activity will be scheduled. The boundaries follow along side hills, cross major draws and ridges in non-locatable places. The location factors make management of the areas adjacent to these boundaries difficult.

## **AVAILABILITY FOR WILDERNESS**

### **Recreation**

The Sullivan Lake Trail (Forest Trail 504) is the highest use day hiking route on the Sullivan Lake Ranger District. The trail connects two popular developed campgrounds and offers scenic views of Sullivan Lake and a variety of flora and fauna. This trail is part of the national recreation trail system. The trailheads for the Sullivan Lake Trail are easily accessed by vehicle. Trails 533 and 540 are primarily used to access Hall Mountain, which is an easy day hike with spectacular scenic views and the opportunity to view Rocky Mountain bighorn sheep. Trail 588 connects to Trail 540 and provides access to Hall Mountain from the Noisy Creek Campground. Snowmobile use is allowed in parts of the Hall Mountain PWA. Mountain bike use is allowed on the trails in the Hall Mountain PWA.

The PWA is separated from the Grassy Top PWA by one dirt road, which in turn is separated by one dirt road from the Salmo Priest Wilderness. Thus, travelers could complete a large circumnavigation of the Sullivan Creek drainage by trail by using these three areas combined.

The Hall Mountain PWA is most closely associated with the small communities of Ione, Metaline Falls, and Metaline. These communities are all located along the 280 mile International Selkirk Loop, which likely accounts for much of their tourist traffic. Because these communities are small, they have limited resources for promoting tourism. The Metaline Chamber of Commerce promotes a wilderness setting: their tourism brochure is entitled, "Experience North Pend Oreille Valley: Where pristine wilderness meets rural communities with much to offer visitors". Tourism marketing promotes walking, hiking, fishing, hunting, wildlife viewing and cross-country ski trails, but does not specifically promote this PWA. Because the Sullivan Lake Trail is a National Recreation Trail that also increases the profile of the area, as does its proximity to Sullivan Lake and the Salmo Priest Wilderness. These factors, coupled with the scenic beauty of the area, the trail opportunities, and bighorn sheep viewing opportunities, would likely draw media publicity if the area were to be designated as wilderness. There would likely be a moderate increase in tourism-based use most likely drawing from the Spokane area.

In considering the relative trade-off between wilderness designation and providing for other backcountry recreational uses, due to the low use by mountain bikers wilderness designation could provide a positive benefit to the region by augmenting what the Salmo-Priest Wilderness offers. A drawback, however, would be managing the existing pattern of high use on the Sullivan Lake Trail, including potential limits on group size.

**Table 2--Miles of recreation trails**

<b>Motorized Trails</b>	<b>Non-motorized Trails</b>	<b>Snowmobile Trails</b>
0	10	0

## Wildlife

Suitable habitat for the threatened grizzly bear (Sullivan-Hughes grizzly bear management unit) and the endangered mountain caribou (Thunder-Hall Caribou management unit) is in this area. The grizzly bear and caribou, along with a wide variety of game and non-game species of wildlife, provide an excellent opportunity for both consumptive and non-consumptive use of this resource. Gray wolves may occasionally use the area, but at this time animals seen on the Colville National Forest are transient, moving over large areas. Habitat is available for Canada lynx within this PWA. Two lynx analysis units (LAUs) have been mapped within this area: Hall LAU and Harvey LAU. Habitat also exists for wolverine.

Habitat improvement opportunities in this area would be primarily from creating openings in the dense timber stand to provide more food. Projects improving the extent and condition of riparian habitat could also enhance habitat for many non-game species. Improvement of habitat for bighorn sheep would be through creating large openings and planting grass, not trees, at the higher elevations. Habitat for caribou could be created by converting lodgepole pine stands to climax forest types. Habitat for grizzly bear could be enhanced through creating openings vegetated with grasses, forbs, and shrubs and interspersed with cover. A mosaic of habitats to benefit all of these species could be developed, however, it would not be easily managed to provide timber rotations. Roads would need to be closed to provide seclusion habitat. Wilderness designation would preclude manipulation of wildlife habitat.

Potential management activities necessary to maintain threatened, endangered, or sensitive species include:

**Grizzly Bear:** 1) provide seclusion by minimizing new roads in the area, 2) maintain or enhance habitat through the use of prescribed fire, regulated timber harvest, or letting some natural fires burn, and 3) vegetation seeding or planting.

**Selkirk Mountain Caribou:** 1) maintain arboreal lichen producing habitat at high elevations, 2) regulate fires in subalpine habitat, 3) provide seclusion, and 4) use prescribed fire, timber harvest, or natural fires to convert lodgepole pine stands above 4,200 foot elevation to climax forest types.

A herd of Rocky Mountain bighorn sheep has been established on Hall Mountain since the 1970s. This population was originally introduced by the Washington State Department of Fish and Wildlife to serve as a breeding herd and to provide animals for transplanting to other areas.

Habitat for pileated woodpeckers, American marten, and other old growth dependent species exist in this area.

The PWAs provide varying levels of habitat for focal wildlife species. To help evaluate the habitat that these areas provide, the following information was provided: the focal species emphasized in the area, the amount of habitat for each focal species, the priority ranking for the habitat (based on conservation assessments and recovery plans), and the proportion of the total habitat available on the forest that is within the PWA.

**Table 3--Availability of habitat for federally listed Threatened and Endangered wildlife species, and R6 focal species**

Wildlife Species	Acres of Habitat	Habitat Priority Ranking (1=high, 2=mod., 3=low)	Percent Total Forest Habitat in Evaluation Area
Grizzly bear	7352	1	NA
Canada lynx	407	2	2.3
Wolverine	7,352	2	1
American marten	426	1	2

## Water and Fish

The Hall Mountain PWA is located in the Pend Oreille River subbasin (4<sup>th</sup> HUC). The PWA contains tributaries of Harvey Creek within the Harvey Creek watershed (6<sup>th</sup> HUC) and tributaries of Pass and Sullivan Creeks within the Sullivan Creek watershed (6<sup>th</sup> HUC).

One major stream, Noisy Creek, bisects the area and runs into Sullivan Lake one-half mile outside this area. Noisy Creek contains an extremely small population of westslope cutthroat trout. The stream goes subsurface in sections during the summer to winter period. Some small sections remain with year round surface flow but the fish population is isolated due to the intermittent nature of the drainage.

Noisy Creek flows into Sullivan Lake, which, in turn, flows into Sullivan Creek. The Sullivan Creek watershed is considered to be core habitat that is essential for the recovery of the threatened bull trout in northeastern Washington. This watershed also contains designated critical habitat for the recovery of this species downstream of the PWA. There have been no observations of bull trout in the portion of the watershed within and adjacent to the PWA. The most recent observation, in 1994, was a 20-inch female bull trout while snorkeling below Mill Pond Dam.

The Sullivan Creek watershed is also designated as a priority watershed within the Colville Land and Resource Management Plan as amended by INFISH. This designation indicates that these watersheds have excellent habitat and/or strong assemblages of native fish with a priority on bull trout. The stream habitat conditions in Noisy Creek have not been surveyed.

The boundary of the Grassy Top PWA is bordered by North Fork Harvey Creek, Harvey Creek, and Middle Fork Harvey Creek on the west and south, and Pass Creek on the north. The area encompasses primarily intermittent and perennial non fish-bearing streams. Harvey Creek contains one of the largest pure westslope cutthroat trout populations on the forest. Harvey Creek supports both resident and adfluvial life forms of the cutthroat trout. Harvey Creek also provides spawning habitat for 12 to 14 thousand Kokanee salmon each year as well as pygmy whitefish, a sensitive species, from Sullivan Lake.

Harvey Creek, Sullivan Lake and Sullivan Creek together comprise the Sullivan Creek watershed. Mill Pond Dam on Sullivan Creek presently is a blockage to upstream fish passage, isolating the westslope cutthroat trout and preventing any upstream migration of bull trout or other species. This dam is scheduled for surrender and upstream fish passage is expected to be restored at a later date.

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Pass Creek drains into the Sullivan Creek watershed, which is designated as a priority watershed within the Colville Land and Resource Management Plan as amended by INFISH. This designation indicates that these watersheds have excellent habitat and/or strong assemblages of native fish with a priority on bull trout. The stream habitat conditions range from excellent to fair

All 6<sup>th</sup> field watersheds have been analyzed for vegetation and road conditions. When vegetation conditions and road related effects are considered cumulatively, the Harvey Creek and Sullivan creek watersheds were rated as fair. This rating is due primarily to high road densities.

This habitat in the Harvey and Sullivan Creek portions of the PWA is considered important core area habitat necessary for the recovery of the bull trout within northeastern Washington. Although a large portion of both watersheds is not within the PWA, several tributaries are located in the PWA and could have significant effects on downstream water quality and instream habitat in lower Harvey and Sullivan Creeks.

Wilderness designation would protect the basic ecological functions of these tributaries. This objective could also be accomplished without Wilderness designation if the proposed PWA remained in an unroaded condition. If management actions, such as road building and timber harvest, are approved by the Regional Forester or Chief in the future within this PWA, a degradation of riparian and aquatic processes is expected. The adverse effects of such actions could extend beyond the boundaries of the PWA and continue throughout the 6<sup>th</sup> field HUCs.

There are no existing power withdrawals, proposed impoundments or known Federal Energy Regulatory Commission permits or licenses outstanding.

There are no water source protection areas.

**Range**

This area has little potential for domestic stock use because of the steep terrain and lack of water. There are no active grazing allotments located within this PWA.

**Table 4--Percentage of grazing suitability areas and current allotments**

Percent Area Suitable for Cattle Grazing	Percent Area Currently in Cattle Allotments	Percent Area Suitable for Sheep Grazing	Percent Area Currently in Sheep Allotments
2	0	8	0

## Vegetation and Ecology

This area is covered by forests, grasslands and shrub vegetation types. About 80 percent of the area is covered by forests. These forested areas are a mixture of mature and immature stands. Most of the younger stands are nearing 85 years old and are the result of large fires in the late 1920s. The forest vegetation types include: Douglas-fir/ponderosa pine type on some south aspects; cedar/hemlock type in the draws and north and east aspects; subalpine fir/Engelmann spruce type at higher elevations and the ridge between Noisy and Harvey Creeks; and subalpine fir/whitebark pine type on the top of Hall Mountain. Trees in this forested area are extremely dense. There are grassy openings on the west and south faces of Hall Mountain, which contain a mixture of grass species along with some forbs, legumes and shrubs.

Ecosystems present include Douglas-fir/ninebark, western hemlock/pachistima, grand fir/pachistima, subalpine fir/beargrass, subalpine fir/menziesia, fescue grassland, and forbfield.

A significant amount of this area is wildland urban interface (WUI). The Healthy Forest Restoration Act (HFRA) authorizes direction to implement fuel reduction projects in the WUI. The HFRA prohibits authorized projects in wilderness areas. There is a concern that 62 percent of the area is in WUI, and much of that is dry forest. With its proximity to the developments at Sullivan Lake, wilderness designation would preclude reducing the fuels with mechanical means.

## Timber Harvest Suitability

The underlying criteria for determining timber harvest suitability are found in the Forest and Rangeland Renewable Resources Planning Act of 1974, 36CFR219.12, and Forest Service Handbook 1909.12, Chapter 60.

For the Colville and Okanogan-Wenatchee National Forests, the general criteria for timber suitability that will be used for timber harvest suitability are:

- Is it forest land (10 percent crown cover minimum, productivity  $>20 \text{ ft}^3/\text{ac}/\text{yr}$ ).
- The area has not been withdrawn from timber harvest or production.
- Soil, slope, or other watershed conditions will not be irreversibly damaged (based on soil attributes for erosion, instability, or compaction potential, slopes  $>65$  percent, and certain land types)
- Reforestation can be assured within five years (lack of shallow soils, low frost heave potential, low surface rock, plant community type, certain land types, and elevation  $<5,500$  feet)
- Economic and technologic viability (less than 0.5 miles from existing transportation system, species value or condition, volume availability, logging systems)

In consideration of all the criteria for determining timber harvest or timber production suitability and not just the fact that harvestable species can grow at a specific location, it appears this PWA does not have conditions that pass all the criteria. The main criterion for failure is that unacceptable resource impacts would likely occur due to road construction activities. This does not preclude helicopter operations that could fly material over

sensitive areas to adjacent road systems. However, in most if not all cases helicopter logging and the associated expenses (such as manual slash treatments) would not be an economically viable option.

**Table 5--Stand data percentages**

Suitable for Timber Harvest	Forest Groups		WUI	
	0%	Parkland	0%	Total WUI
Cold Dry		0%	WUI in Dry and Mesic Forest	29%
Cold Moist		77%		
Mesic		1%		
Dry		20%		
Non-forest		1%		

### Fire

A large fire burned a portion of the south-facing slope of Hall Mountain in 1920. In 1926, a major fire burned over the entire PWA with varying degrees of intensity. Fuel loading ranges from about five tons per acre on the open face of Hall Mountain to 125 tons per acre in areas within the Noisy Creek drainage. Over the past decade, suppression action has been taken on two small fires (less than ¼ acre in size) in this PWA.

The heavy fuels are in the Noisy Creek draw and in some of the overstocked timber stands, which grew after the 1926 fire. Fire hazard is generally low to moderate with the moderate rating being on the south and southwest facing slopes.

### Insects and Disease

The Wilderness Act of 1964 allows for the control of insects and disease, but taking such actions in wilderness is rare. Forest Service wilderness policy (Forest Service Manual 2324.11) directs the agency “to allow indigenous insect and plant diseases to play, as nearly as possible their natural ecological role”. Policy also directs the agency to “protect the scientific value of observing the effect of insects and disease on ecosystems and identifying genetically resistant plant species”, and finally, “to control insect and plant disease epidemics that threaten adjacent lands or resources.”

An aerial survey of this PWA was completed in 2007. The most significant insect impact in the vicinity of the Hall Mountain PWA has been attacks of western balsam bark beetles on subalpine firs. About 29,000 trees have been killed in the vicinity of the PWA since 2000. Blowdown and root disease may play an important role in the buildup of western balsam bark beetle populations. When beetle populations are high, they can more easily attack and kill healthy trees. Removing blowdown may be a way of reducing tree-killing by these beetles.

Pockets of balsam woolly adelgid activity have been reported several times since 2005. Balsam woolly adelgid is a European insect that was introduced to North America in the early 1900s. Any true fir can be a host, but subalpine fir is the most susceptible species on the district. The result of feeding by this sucking insect is branch gouting and flagging, growth loss, wood degradation, and eventual tree death. Twenty-three species of predators

were introduced between 1957 and 1964 in order to control this insect. Five of these species are established but do not appear to be reducing the balsam woolly adelgid population in any significant way. There is considerable difference in individual tree susceptibility.

Fir engravers kill several thousand grand firs every year. Fir engraver activity is often associated with root disease. They are also attracted to trees under stress from drought, defoliation or other damage. Trees that are attacked may be killed outright, or they may survive with top-kill.

Mountain pine beetles (*Dendroctonus ponderosae*) have killed a few hundred western white pines and whitebark pines every year. Whitebark pine mortality due to mountain pine beetles has been increasing in many places, possibly due to the combined effects of white pine blister rust and generally warmer winter temperatures. Efforts to breed rust-resistant whitebark pines are currently underway. Reducing access to stands of whitebark pine could complicate the logistics of cone caging and collection.

The Douglas-fir beetle (*Dendroctonus pseudotsugae*) outbreak that began in the late 1990s had subsided by 2002, though some Douglas-firs are killed by bark beetles every year. Douglas-fir beetle outbreaks typically last about four years, and occur when severe blowdown or similar disturbance provides abundant breeding material. Removing blowdown Douglas-firs before the beetles complete their life cycle can substantially reduce the size of an outbreak. Douglas-fir blowdown that occurs in wilderness cannot be removed, and can be a source of beetles.

Western larch dwarf mistletoe probably occurs in approximately 50 percent of the larch stands in the Sullivan Lake planning areas.

White pine blister rust caused by *Cronartium ribicola* was introduced into the Sullivan Lake area in the early 1920s following its introduction into Vancouver, British Columbia in 1910. The disease occurs in essentially every stand of western white pine and whitebark pine on the Pend Oreille Valley Ranger District. The very first efforts to survey Ribes and develop practices of controlling the disease in western North America were tested on the Sullivan Lake District in the late 1920s. The disease is the greatest threat to 5-needle pines but it does not threaten the existence of five-needle pines. Western white pine regenerates naturally well on the District. Many of the white pines have some degree of genetic resistance because white pine stands in the area have been exposed to inoculum for 80 years. The most susceptible trees were eliminated decades ago. Lower crown pruning has been employed as an effective method of managing white pines to reduce losses to the disease on the District.

Armillaria root disease caused by *Armillaria ostoyae* is currently not a major cause of tree mortality in the potential wilderness areas. The fungus is undoubtedly present in most of the stands especially those with Douglas-fir and/or grand fir but it is in equilibrium with the hosts. If stands in the potential wilderness areas were to be logged or if other mortality agents were to kill large numbers of firs armillaria root disease would become a serious tree killer. The fungus gains energy from colonized roots and stumps and spreads to infect and kill adjacent trees, especially Douglas-fir.

**Threatened, Endangered, and Sensitive Plants**

There are no known rare plants present in the area; however, intensive surveys have not been made.

**Noxious Weeds**

Noxious weed inventory data is not available for this PWA.

**Minerals and Soils**

Soils in this area are extremely varied. Generally, they are a complex of rock outcrops and sandy to silt loams. There are numerous rock outcrops on the west face of Hall Mountain. There are many rock outcrops on the ridge between Noisy Creek and Harvey Creek. There is evidence of past mass failures (landslides). Soils usually consist of a thin layer of weathered volcanic ash over glacial till, colluvium or alluvium. The weathered volcanic ash soils have a high water holding capacity.

The Hall Mountain PWA is located within the eastern part of the Kootenay Arc, a highly faulted and folded sequence of Middle and Late Proterozoic and Early Paleozoic rocks. The subject lands are predominantly underlain by complex assemblage of faulted metasedimentary rocks, namely meta-argillite, metasiltite, quartzite, metaconglomerate, phyllite, and calc-silicate rock, as well as limited metavolcanic rocks. These rocks have been intruded by granodiorite of the Cretaceous Hall Mountain pluton in the eastern part of the area in the headwaters of Johns Creek.

Historic claim records indicate that the central and southern parts of the area have experienced significant prospecting and exploration in the past. Most reported mineral occurrences and historic prospects/mines are located within or adjacent to the PWA in the lower reaches of the Noisy Creek drainage above Sullivan Lake and at the far northern tip of the area. At present (3/2008), there is one active claim in the N.W. ¼ of Section 34 in T. 38 N. R. 44 E. either in or along the southern boundary of the Hall Mountain PWA.

**Cultural and Heritage Resources**

There are four known cultural resources within the Hall Mountain area. One site is the remnant foundation of the Hall Mountain lookout. One site is a rock feature known to be of spiritual importance to American Indian tribes. There are the remains of a Civilian Conservation Corps camp. The remaining sites are historic cabins of unknown thematic association. Unless a site has been determined to be ineligible for the National Register, it is managed as a significant site until such a determination is made. Cultural sites are protected by law; however, a wilderness designation or a roadless designation would afford additional protection to cultural sites from ground disturbing activities.

**Land Uses and Special Uses**

Past management consideration for the area included an agreement with the U.S. Air Force which permitted use of the area for training of survival instructors. The area was dropped as a training area when the special use permit was reissued in 2001.

## **Private Lands**

There are no private lands within the boundaries of the PWA.

## ***NEED FOR WILDERNESS***

### **Location and size of other wildernesses in the general vicinity, and distance from area and population centers**

The nearest designated area managed in a roadless condition is the Salmo-Priest Wilderness which contains 41,335 acres. This wilderness is one air mile from the Hall Mountain PWA and is located within the Colville and Idaho Panhandle National Forests. The nearest population center is Spokane. The drive time from Spokane to the Salmo-Priest Wilderness is approximately two hours. The drive time from Spokane to the Hall Mountain PWA is approximately 1.5 hours.

There are only two relatively small, congressionally designated wilderness areas within a three-hour drive of the Spokane area, including the nearby Salmo-Priest Wilderness. In ranking this PWA for its potential to provide a high quality wilderness recreation setting it ranked as high. The area is relatively accessible. In concert with considering the addition of the Grassy Top PWA and thereby augmenting the existing wilderness the combined acreage provides high quality destinations that would attract wilderness users. In addition, interconnected trail systems would facilitate both day trips and overnight use. If considered in isolation this rating would still rank as high.

### **Present visitor pressure on other wildernesses, trends and changing patterns of use**

Use of the Salmo-Priest Wilderness is fairly light. Wilderness use was monitored during the summer of 2004 through the National Visitor Use Monitoring Program. Only 18 visitors to the wilderness were encountered during 21 days of sampling. Much of the use is from northeastern Washington. Residents of Spokane also have access to the Idaho Panhandle National Forest for recreation. Travel time and distance to unroaded areas in Idaho are comparable to the areas located on the Colville National Forest. There are 215,898 acres proposed for roadless allocations, and 148,961 acres are recommended for wilderness designation on the Idaho Panhandle National Forest. Seattle, a ten-hour driving distance from this area, is the closest major metropolitan area. The abundance of prime backcountry recreation (including wilderness) close to Seattle precludes heavy use from that area.

The projected population increase for the period of 2000 to 2030 in Ferry, Pend Oreille, Stevens, and Spokane Counties ranges from 40 to 67 percent. With this increase in population comes the potential for overuse of and crowding in the Salmo-Priest Wilderness.

### **Extent to which non-wilderness lands provide opportunities for unconfined outdoor recreation experiences**

There are six other PWAs within 15 air miles of the Hall Mountain PWA (Abercrombie-Hooknose, Grassy Top, Harvey Creek, Lost Creek, Salmo-Priest adjacent, and South Fork Mountain) which encompass an additional 70,865 acres on the Colville National Forest. This acreage, in combination with other roadless areas including wilderness, totals approximately 226,000 acres. The roadless areas identified in RARE II constitute about twenty percent of the Colville National Forest.

Another consideration is off-highway vehicle recreation, which has increased tenfold in the last 30 years and is projected to continue increasing in the future. This use often conflicts with non-motorized recreation in the Forest, creating need for areas where motorized recreation is prohibited.

### **The need to provide a sanctuary for those biotic species that have demonstrated an inability to survive in less than primitive surroundings for the need for a protected area for other unique scientific value or phenomena**

#### **Wildlife**

Hall Mountain PWA is adjacent to large areas of limited human access including the formally designated grizzly bear recovery area. Grassy Top PWA has habitat for Selkirk mountain caribou, grizzly bear, Canada lynx, wolverine, and American marten. The wildlife sustainability index is 11.6 (a moderate relative ranking) and the habitat connectivity index is 6.6 (a low relative ranking).

Motorized access via the 2200500 road system is restricted seasonally (2200500 lower section in spring and 2200500 upper section in fall) to provide seclusion habitat during critical periods of grizzly bear use.

#### **Fish**

The habitat within the two watersheds within the PWA is considered essential to the recovery of the bull trout. This PWA contains primarily tributaries that are important to future water and instream habitat quality in Pass, Sullivan, and Harvey Creeks. Bull trout have also been observed in lower Sullivan Creek below Mill Pond Dam. This PWA contains a very small portion of Pass Creek, a tributary to Sullivan Creek. The habitat condition, for this watershed, is considered to be *fair*. This PWA also contains the headwaters of the Middle Fork of Harvey Creek, a tributary to Harvey Creek and eventually to Sullivan Creek. The habitat condition, for this watershed, is considered to be *fair*.

The 6<sup>th</sup> field HUCs in this PWA also provide suitable habitat for resident and adfluvial westslope cutthroat trout subpopulations; approximately 25 percent of the available habitat on the Forest. While the PWA contains only a small portion of these subpopulations, activities in the PWA could influence habitat conditions and water quality for those subpopulations located downstream. These are important factors that influence the future sustainability of these isolated subpopulations.

The Harvey Creek watershed also includes Sullivan Lake. This body of water provides 64 percent of the habitat occupied by pygmy whitefish on the Forest. This population is one of only two populations on the Forest and one of seven in the state of Washington. A few whitefish have been captured during spawning season in lower Harvey Creek. It is unclear how much of the population spawns in the lake versus spawning in Harvey Creek. Habitat conditions within the portion of the PWA in this watershed could influence the long term sustainability of the pygmy whitefish.

It is understood that habitat conditions for TES species within the 6<sup>th</sup> field HUCs is fair. However, as a result of this analysis, the importance of this PWA to future water and habitat quality in potential and existing bull trout habitat and sustainability to three subpopulations of westslope cutthroat trout and one population of pygmy whitefish indicates that this PWA should be considered a high priority for wilderness classification.

**Table 6--Sullivan Creek watershed**

<b>Focal Species</b>	<b>Miles of Habitat</b>	<b>Percent Total Forest Habitat in Evaluation Area</b>	<b>Vegetation Score</b>	<b>Overall Road Density Score</b>	<b>Habitat Priority Ranking (1=high, 2=mod., 3=low)</b>
Bull trout	3.2	3	0.01	-1.00	2
Westslope cutthroat trout	28	16	0.01	-1.00	2
Interior redband trout	0	0	0.01	-1.00	3
Pygmy whitefish	0	0	0.01	-1.00	3

**Table 7--Harvey Creek watershed**

<b>Focal Species</b>	<b>Miles of Habitat</b>	<b>Percent Total Forest Habitat in Evaluation Area</b>	<b>Vegetation Score</b>	<b>Overall Road Density Score</b>	<b>Habitat Priority Ranking (1=high, 2=mod., 3=low)</b>
Bull trout	0	0	0.01	-0.40	2
Westslope cutthroat trout	16	9	0.01	-0.40	2
Interior redband trout	0	0	0.01	-0.40	3
Pygmy whitefish	1291 (acres)	64	0.01	-0.40	3

**Threatened, Endangered, and Sensitive Plants**

An analysis was completed to prioritize which PWAs would contribute the most to providing refugia for those plant species on the species of interest/species of concern (SOI/SOC) list. The analysis ranked three factors. The first factor, the total number of sites occurring within the PWA, ranked as low for this PWA. The second factor, which also ranked as low for this PWA, examined the degree of rarity of any SOI/SOC species present, and also recognized the importance of individual PWAs in supporting a high incidence of populations relative to Washington State as a whole.

PWAs are generally unsurveyed for rare plants due to a relative lack of projects occurring in these areas. Thus an additional factor examined the potential for the PWA to support SOI/SOC species. Based on databases, first the SOI/SOC plant species were identified that are present within a five mile radius of the PWA, but are not known to occur within the PWA. Then the PWA was analyzed to see if the potential habitat for these species occurs within the PWA. Based on this analysis, this PWA ranks as high.

Finally, a composite score was assigned to each PWA based on combining each of the rankings described above. This PWA ranks overall as moderate priority for preserving rare plant refugia with a wilderness designation.

**Ability to provide for preservation of identifiable landform types and ecosystems**

This area is classified as Okanogan Highlands using Bailey's Ecoregions classification and is underrepresented in the wilderness system. The area is part of the Selkirk Mountain Range.

An analysis compared vegetative cover types that are under-represented in wilderness on the National Forest System in Region 6 with those same cover types present in the PWA. Large-scale cover types were available through existing data layers and represent approximately 26 percent (approximately 2,100 acres) of the vegetative cover of this PWA. These types include alpine meadows, forb lands, non-alpine meadows, ponderosa pine, and western red cedar. Taken as a whole, the contribution of underrepresented vegetation types ranks as high for the portion of this area with underrepresented cover types, but as moderate for the number of acres that are represented within this PWA relative to the other PWAs in the planning area.

Some under-represented cover types fill microhabitats such as riparian areas or perched water tables. Quaking aspen, common in this PWA, represent such a fine scale cover-type.

In particular, the western red cedar cover type, which comprises approximately 1,700 acres in this PWA, would make a significant contribution within the eastern Washington planning area, as would the quaking aspen.