WILDERNESS EVALUATION

Abercrombie-Hooknose - 621011

37,713 acres

OVERVIEW

History

The Abercrombie-Hooknose Potential Wilderness Area was initially inventoried in the first Roadless Area Review and Evaluation (RARE I). In the second Roadless Area Review and Evaluation (RARE II) small areas were added.

The 2006 inventory removed approximately 2,477 acres from previous inventory due to road construction and logging; 4,669 acres were added to the previous inventory as they meet the criteria for a potential wilderness area as described in 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)

MA1 Old Growth Dependent Species Habitat	MA5 Scenic Timber	MA6 Scenic/ Winter Range	MA7 Wood/ Forage	MA8 Winter Range	MA11 Semi-primitive, Non-motorized Recreation
1%	7%	1%	10%	2%	78%

Location and Access

The Abercrombie-Hooknose Potential Wilderness Area (PWA) is located in the northwestern corner of Pend Oreille County and the northeastern corner of Stevens County, 100 miles north of Spokane, Washington. Trail access is from three locations. One trail begins near Metaline, Washington, seven miles east of the area via the Flume Creek Road (Forest Road #6200-350). The secondary access into the area is via the Hartbauer Road (Forest Road #7078-300), which is west of the area. Silver Creek Road (Forest Road #7078-070) from the west side accesses a developed trailhead. There are numerous other road accesses around the perimeter.

Geography and Topography

This PWA occurs on the ridge forming the hydrologic divide between the Pend Oreille River and the Columbia River. The ridge tops are rounded with occasional sharp

definition. The lateral ridges are moderately sloped before dropping off sharply into the valleys. Elevations range from 2,800 feet to 7,300 feet.

The two tallest peaks in this area, Hooknose Mountain (7,200 feet) and Abercrombie Mountain (7,308 feet) were untouched by the continental glaciers. Cirques indicate that the mountain glaciers formed on Hooknose and Abercrombie Mountains and on Sherlock Peak. Rock outcrops on the Pend Oreille valley side of the area show scratch marks formed as the continental glaciers moved over the area. Most of this area became National Forest System land through land purchases made by the Resettlement Administration in the 1930s.

Current Uses

The primary recreation use of this area is hunting, which occurs in the fall months. Elk, deer, black bear, and grouse attract hunters to the area. Huckleberry crops are usually good although the patches are remote.

Day hikers use the following trails to reach Abercrombie Mountain: #502 – Flume Creek Trail, #117 – Abercrombie Mountain Trail, and #119 – North Fork Silver Creek Trail. Once on Abercrombie the cross-country hike to Hooknose Mountain is quite popular. Trails #117 and #119 are also open to horseback riding and mountain biking. Trail #502 is open to hiking and horseback riding only. Hikers, horseback riders, and mountain bikers use trail #139 to reach Sherlock Peak. Trail #123 (South Fork Silver Creek) also provides opportunities for hiking, horseback riding, and mountain biking.

Appearance and Surroundings

This area offers a wide variety of spectacular scenery. The views from Abercrombie and Hooknose Mountains are across the Pend Oreille valley and into the Selkirk Mountains of Idaho; across the Columbia River valley and part of the Cascade Range; north into Canada; and south down the ridge towards the upper Pend Oreille and Colville valleys.

Most of the area is surrounded by National Forest System land, which is roaded and has timber harvest activity on a regular basis. The east edge of this area borders largely on privately owned land. A finger of roaded private land expands into the south end of this area. Residential and timber harvest activity occur on this privately owned land.

Key Attractions

A small herd of mountain goats can be observed near Linton Mountain. Deer, elk, bobcat, and mountain lion inhabit the area. Grizzly bear sightings in the area have been reported for a number of years. Black bear, coyotes, moose, grouse, raptors, and numerous small birds and animals may also be found in the area.

Major peaks within the area range from 5,901 feet in the south (Baldy) to 7,308 feet near the north end (Abercrombie). Abercrombie and Hooknose are the two most prominent peaks. Their summits consist of loose piles of slate-like rocks. The area is drained by numerous streams to the east and west. Among these are Republican, Silver and East Fork Cedar Creeks to the west; and Flume, Sweet, and Cedar Creeks to the east. Hooknose Lake, one-half mile north of Hooknose Mountain, is the only sizeable body of water in the area. It is used as a campsite in the summer by hikers.

CAPABILITY FOR WILDERNESS

Level of natural and undeveloped environment

The PWA is primarily natural appearing and offers a sense of remoteness and isolation from human influences.

Natural ecological processes are the only evident influence in this area. The last major natural change was a large burn occurring in 1926. The largest human influence has been the control of wildfires over the last 45 years that has encouraged natural succession to continue toward a climax condition.

This area has rugged terrain and is relatively inaccessible. Developed access consists of five roads leading to the boundary of the PWA and five system trails within a short, 0.1 mile-long section of rail fence is in the PWA.

There are some small prospect holes where minerals were sampled between 1900 and 1940. Most of these holes are shallow, hand dug troughs that appear almost natural to the casual observer.

Several noxious weed species have been introduced into the PWA. Eastern brook trout have been introduced into Flume Creek, Pee Wee Creek, and Sweet Creek. Coastal rainbow trout have been introduced into Jim Creek, Fence Creek, and Silver Creek.

Water quality data is not available for most of the PWA, however due to the relatively low level of disturbance water quality is assumed to be high. There may be localized disturbances due to grazing activities.

The Abercrombie-Hooknose PWA is impaired by light pollution from the Metaline and Trail, British Columbia, areas. The northwestern portion of the PWA (76 percent of the PWA) rates a Class 3 on the Bortle Scale, whereas the southeastern portion (24 percent of the PWA) rates as a Class 4. 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. A Class 4 Rural/Suburban Transition Sky exhibits fairly obvious light-pollution domes over population centers in several directions. The Milky Way well above the horizon is still impressive but lacks all but the most obvious structure. Clouds in the direction of light pollution sources are illuminated but only slightly so, and are still dark overhead. Modest to serious impact to deep sky observing and imaging occurs.

Level of outstanding opportunities for solitude or primitive and unconfined recreation

This PWA possesses abundant opportunity for solitude because of its size, rugged terrain, shape, and relative inaccessibility. There is little current human activity within the area except for areas accessed by system trails.

From the ridge top, visible signs of civilization occur at a distance of four-plus air miles, which may evoke a feeling of remoteness, serenity, and solitude. The only audible human-made sounds are occasional and are from distant logging operations and airplanes. The

open ridge tops are more attractive than timber and brush fields; hence, visitors feel encouraged to explore on their own and test their individual limits and experience.

The majority of visitors enter from either side of Abercrombie Mountain. A hiker, whether hiking north toward Hooknose or south along the main ridge, can be confident of complete or near solitude.

Absence of water on ridge tops and the scarcity of other people require a strong degree of self-reliance and sound judgment on the part of the user.

This area has much opportunity for primitive recreation. Trails in the area receive most of the recreation activity. Most of the visitors do not stay on the trails after reaching the ridge top but spread out as they pick their own way along the ridge or toward one of the peaks. This is one of the principle attractions of this area, whether the visitor is hiking, camping, horseback riding, hunting, or engaged in photography.

There are no designated areas for camping due to lack of water. Camping tends to be concentrated at areas that are used year after year. Opportunities for winter sports are limited due primarily to the rugged terrain.

Special Features

Special recreation features are the dominant ridge running north and south between Abercrombie and Hooknose Mountains. The peaks of Abercrombie and Hooknose can be seen for miles around, and are featured in the hiking book, *50 Highest Peaks of Eastern Washington*. For these reasons, the trail system and access to the peaks are popular.

There are three known cultural resources within the Abercrombie Hooknose PWA. Of these, one reflects a historic homestead, while the others are all associated with the historic Flume Creek white pine logging operation. Sites associated with the Flume Creek district include a corduroy road, headgate, flume remnants, dam and associated outbuildings and refuse dumps. The Flume Creek locales have the potential to be candidates as a National Register Historic District.

The area has habitat for grizzly bear, wolverine, and Canada lynx. Grizzly bear have occasionally been sighted in the area.

Manageability of Boundaries

The east boundary follows the topographic break where the steep valley walls ease into the benches along the valley floor. There are several exceptions to this, but, because of the topography, this boundary does act as a barrier to prohibit use and shield against the sights and sounds of human activity. The south, west, and north boundaries provide moderately effective barriers.

AVAILABILITY FOR WILDERNESS

Recreation

The Abercrombie Hooknose trail system is used by hikers, horseback riders, and mountain bikers. The trails are not connected at the top of Abercrombie Mountain. Recreation users just have to pick their way around the rock pile that makes up the mountain top. The short

trails, lack of loops, poor trailhead parking and facilities, and the difficulties of some of the trail sections discourage higher levels of use. Huckleberry picking, scenic views, and hunting attract most of the visitors to this area. Day use is more common than overnight use because of the length of the trails.

Access to the Abercrombie-Hooknose PWA is limited. Five roads located outside the PWA provide motorized access to trailheads. Five trails (numbers 502,117, 119, 123, and 139) provide access within the PWA for hikers, horseback riders, and mountain bikers. Trail #117 accesses Abercrombie Mountain from the west. Trail #502 provides access for hikers and horseback riders to Abercrombie Mountain from the east.

This PWA is closed to snowmobiling. All of the trails except the #520 trail, accessed from the trailhead at Flume Creek are available for mountain bikes.

The Kettle Falls and Metaline Chamber of Commerce offices promote the opportunity for outdoor recreation activities in the vicinity, but do not directly promote this PWA. This PWA is proximate to the International Selkirk Loop drive, and hiking, horseback riding, and mountain biking are promoted in the Selkirk Loop brochure and website, however trailheads are not easily accessed from the east side of the PWA. Due to the relatively large size of this PWA, the variety of trailed opportunities, and the prominent peaks this area would be likely to receive media coverage promoting visitation if the area is designated as wilderness. However since the area is relatively remote and primarily offers day use opportunities, tourism-based visitation would probably only result in a moderate increase in use.

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 array of recreation opportunities on the forest.

Table 2--Miles of recreation trails

Motorized Trails	Non-motorized Trails	Snowmobile Trails
0	20	0

Wildlife

Presence of grizzly bear has been documented in this area. The alpine meadows around Hooknose, Sherlock, Linton, and Abercrombie Mountains have the highest potential for habitat for bear. 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. Three lynx analysis units (LAUs) have been mapped within this area: Russian, Abercrombie, and Cedar. Habitat also exists for wolverine.

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, allowing some natural fires to burn, and vegetation seeding or planting.

Gray Wolf: 1) Provide seclusion, 2) Provide habitat for deer, elk, rabbits, mice and other small animals.

Three to four hundred acres have been identified in this area as a management area for old growth-dependent species (this is commonly referred to as a barred owl management area). This area will eventually support a climax vegetation community and its associated wildlife. Habitat is available for pileated woodpecker, American marten, and goshawk. Recent surveys of the Russian lynx analysis unit (LAU) by the Washington State Department of Fish and Wildlife (WDFW) have located American marten tracks.

A small population of mountain goats resides in the Linton Mountain area. This herd was originally transplanted in 1965 from Chelan County into the area by the Washington State Department of Fish and Wildlife. In 1981, 11 more goats were transplanted from the Olympic National Park. The herd size has been declining in recent years for unknown reasons.

Habitat improvement opportunities in this area would create small openings in the dense timber stand to provide more food while maintaining cover. Projects improving the extent and conditions of riparian habitat could improve habitats for many non-game species. Habitat manipulation would be precluded by wilderness designation.

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)	%Total Forest Habitat in Evaluation Area
Grizzly bear	33,475	3	NA
Canada lynx	1,182	2	6.7
Wolverine	33,475	1	4.2
American marten	1,370	1	6.5

Water and Fish

The Abercrombie-Hooknose PWA is located in both the Pend Oreille River and Lake Roosevelt subbasins (4th HUC). The PWA contains non fish-bearing and fish-bearing tributaries within the Cedar/Jim Creek, Flume, Cedar Creek, and North Fork of Deep Creek watersheds (6th HUC).

This PWA contains the following fish-bearing streams:

Cedar Creek

Cedar Creek, in the southeast part of this area, was formerly the municipal water source for the town of Ione. The municipal dam that blocked upstream fish passage was removed in 2005. This watershed is considered to be core habitat that is essential for the recovery of the threatened bull trout in northeastern Washington. The Cedar Creek watershed also contains designated critical habitat for the recovery of this species. Observations of bull trout have been infrequent. The most recent capture in 2004, was a 12 inch juvenile bull trout (genetically pure) while electrofishing below the dam. The presence of a juvenile likely indicates some level of successful reproduction is occurring in this drainage. This watershed also contains an isolated population of pure westslope cutthroat trout, a sensitive species, in the uppermost reaches of Cedar Creek and in Jim Creek, a tributary to Cedar Creek.

The stream 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 range from excellent to poor.

Peewee/Fence Creek

This watershed contains an isolated population of pure westslope cutthroat trout, a sensitive species, throughout Peewee Creek and in Fence Creek, a tributary to Peewee Creek. The stream habitat conditions range from good to fair. There is a trail to view PeeWee Falls below this PWA. This falls is a major scenic attraction as it enters the Pend Oreille River (Boundary Reservoir).

Flume Creek

Based upon surveys in the early nineties, this watershed contained a very small isolated population of westslope cutthroat trout, a sensitive species. However, more recent surveys (1998) have not found this subspecies. The stream habitat conditions range from excellent to fair.

East Fork of Cedar Creek

East Fork of Cedar Creek, in the northwest part of this area, is a different drainage from Cedar Creek that drains the southeastern portion of this PWA. Observations of bull trout consist of two juvenile bull trout observed by Canadian biologists in 1996 just upstream from the mouth of Cedar Creek. The presence of juveniles likely indicates some level of successful reproduction is occurring in this drainage. However, biotic surveys in the reaches of the East Fork of Cedar Creek on National Forest System (NFS) lands in 1996 did not find any bull trout. It is unclear whether there is fish passage between the observation site for the bull trout in Canada and the portion of the creek on NFS lands.

The stream habitat conditions range from excellent to fair.

Silver Creek

This watershed contains an isolated population of pure westslope cutthroat trout, a sensitive species, throughout the watershed. The stream habitat conditions are excellent

except in the lowest reach of the North Fork where recreational trail use and livestock have degraded riparian and stream channel conditions.

Sweet/Lunch Creek

Sweet Creek and its tributary, Lunch Creek contain isolated population of pure westslope cutthroat trout, a sensitive species. Observations of bull trout consist of two adult bull trout observed by WDFW biologists within the last eight years just below an impassable falls approximately 0.5 miles from the mouth of Sweet Creek. The stream habitat conditions range from excellent to good. There is a roadside parking area and trail to view Sweet Creek Falls below this PWA.

All 6th field watersheds have been analyzed for vegetation and road conditions. When vegetation conditions and road related effects are considered cumulatively, the Flume Creek watershed was rated as fair; the Cedar/Jim, North Fork Deep and Cedar creek subwatersheds were rated poor. This is due primarily to past harvest activities and high road densities.

This habitat in the Cedar/Jim Creek portion of the PWA is considered important core area habitat necessary for the recovery of the bull trout within northeastern Washington. However, a portion of this watershed is not within the PWA; its tributaries are located in the PWA and could have significant effects on downstream water quality and instream habitat in Cedar Creek.

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. A degradation of riparian and aquatic processes is expected if management actions, such as road building and timber harvest, are approved by the Regional Forester or Chief in the future within this PWA. The adverse effects of such actions could extend beyond the boundaries of the PWA and continue throughout the 6th 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

Three active cattle, or cattle and horse allotments are partially located in this area. In the south, the Lost Lake Cattle Allotment uses much of the lower areas for grazing. In the middle, on the west side of the ridge, is the Silver Creek Cattle and Horse Allotment. Much of the area is of little or no value as rangeland because it is steep and brushy. Two portions of the area on open south faces are used by cattle. The Z Canyon Cattle Allotment is located in the northeast part of the area. Most of this area is not used by the cattle because of the steep slopes and dense timber. All-terrain vehicles are used to manage some of these allotments. This practice would be prohibited if the area is designated wilderness.

A wood rail fence (0.1 miles long) is located within the PWA.

Recreation stock use is usually limited to a corridor near the trails because of the topography. There appears to be forage available, with water being the limiting factor.

Table 4--Grazing suitability 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
5	42	15	0

Vegetation and Ecology

Most of this area is covered by forest, which is about 85 years old; the result of a large fire that burned through the area in 1926. There have been no major fires since that time. There are brush fields on some of the rock outcrops and areas with rocky soil. Some stands of older trees occur in the draws and on the west side of the ridge. Some of the 85 year-old timber stands have a scattered overstory of western larch, Douglas-fir, and occasional ponderosa pine that survived the fire.

Most of the area is covered by cedar-hemlock plant communities. Some of the south-facing slopes have a Douglas-fir and ponderosa pine forest type. At the higher elevations along the ridges a subalpine fir and Engelmann spruce forest type occurs. Large stands of aspen are interspersed among other forest types. A high elevation alpine ridge-meadow vegetative cover occurs on the top of Abercrombie and Hooknose Mountains and the ridge between them. Low shrubs, bunchgrasses, moss, lichen and trees (with the typical Krummholtz form) make up the vegetative cover on the alpine ridge meadows. Plant communities present in the area include Douglas-fir/ninebark, western hemlock/*pachistima*, western red cedar/pachistima, subalpine fir/*pachistima*, subalpine fir/*menziesia*, subalpine fir/whortleberry, fescue grasslands, and forbfields.

Options to utilize mechanical treatments to manage vegetation would be precluded. Generally, the priority for restoration treatments occurs within the WUI or within the dry, mesic forest groups. Because WUI represents about one third of the PWA, the prohibition on restorative treatments is a concern. The concern is reduced, however, by recognizing that dry and mesic forest represents a small percentage of the area.

Table 5--Stand data percentages

Suitable for Timber Harvest	Forest Groups		WUI	
0%	Parkland	4%	Total WUI	32%
	Cold Dry	0%	WUI in Dry and Mesic Forest	23%
	Cold Moist	83%		
	Mesic	1%		
	Dry	11%		
	Non-forest	1%		

Fire

Most of this PWA burned in the 1926 fire, resulting in extensive even-aged stands.

The fuel loading for the area is less than 20 tons per acre to over 100 tons per acre. A fire started under normal circumstances will spread less than two chains per hour and have flame lengths of less than four feet in most of the area. Because of this fuel loading and rate of spread, the area is considered a low to moderate hazard for fires.

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 extensive insect activity detected by aerial survey was mountain pine beetle in lodgepole pine. Since 2005, over 132,000 lodgepole pines have been killed by these beetles. Mountain pine beetles can attack and kill many species of pines, but are most closely associated with lodgepole pine. Lodgepole pine stands that are older than 80 years, with an average dbh of eight inches or greater are highly likely to experience outbreaks. Additional risk factors are basal area over 120 square feet per acre, and low elevation.

When a mountain pine beetle outbreak occurs in a lodgepole pine stand, the beetles preferentially attack the largest diameter trees. Over the course of an outbreak, 85 percent or more of the large diameter trees will be killed, and progressively smaller proportions of the small diameter trees (Cole and Amman 1980). Thinning can reduce the proportion of a stand that will be killed by beetles, but stocking must be reduced to less than 80 square feet of basal area to be effective (Mitchell et al 1983). A light thinning in small diameter stands may just hasten the development of eight-inch diameter trees without keeping densities below a beetle susceptibility threshold (Cochran and Barrett 1998).

The high ridgeline between Abercrombie Mountain and Hooknose Mountain is comprised of a parkland forest group and is known to support stands of whitebark pine. Both mountain pine beetles and white pine blister rust were detected in whitebark pines near Russian Ridge. 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. 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 five-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.

These whitebark pine stands are of inherent value as a plant community, for providing important habitat for wildlife including the federally listed grizzly bear, and for their aesthetics in contributing to the social setting. Wilderness designation would limit restoration options for these stands. Manipulations would only be considered in order to protect the composite wilderness resource, and only as a last resort to preserve naturalness at the expense of trammeling.

There are extensive stands of western larch in the planning area, especially east of the Ambercrombie-Hooknose Ridge. Western larch dwarf mistletoe probably occurs in approximately 50 percent of the larch stands.

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-firs and/or grand firs 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 sensitive plants present in the area. Intensive surveys have not been made for rare plants; however, the area has a high potential for rare plants based on available habitats. A plant unique to a few high areas on the Colville National Forest, yellow heather (*Phyllodoce glanduliflora*), is found on Abercrombie Mountain.

Noxious Weeds

The area has not been surveyed for noxious weeds. St. Johnswort (*Hypericum perforatum*), plumeless thistle (*Carduus acanthoides*), orange hawkweed (*Hieraciam aurantiacum*), and yellow hawkweed (*Hieraciam caespitosum*) are established in some locations.

Minerals and Soils

The soils in this area are extremely variable and are formed mainly from colluvium and residuum with volcanic ash and loess deposits. The high ridge between Abercrombie and Hooknose Mountains has very thin, rocky soil. Soil productivity in these areas is very low. Rock outcrops are prominent along the eastern edge of the area and on the west side of Abercrombie and Hooknose. Talus slopes form the headwalls of many of the cirques. In the stream bottoms and in areas of less than 40 percent slope, the soil is deeper and has a variable depth layer of weathered volcanic ash. There are some highly productive soils in these areas. The soils formed from the volcanic ash have a high water holding capacity. Cambrium quartzite, phyllite, limestone and dolomite dominate the rock geology of the area.

Springs and seeps are restricted in their locations due to the rock outcrop, but are distributed throughout the area. Soil conditions around the small lakes formed in the cirque

valleys are thin and sterile, as typical in similar areas throughout the Selkirk Mountain range.

The Abercrombie-Hooknose area lies within the Kootenay Arc, a highly faulted and folded sequence of Middle and Late Proterozoic and Paleozoic rocks. The subject lands are underlain by metasedimentary and metavolcanic rocks, mainly quartzite and phyllite and to a lesser degree metalimestone and dolomite in the far western parts of the area. Igneous rocks of the Cretaceous Spirit pluton are exposed in the far southern part of the area.

Parts of the south half of the Abercrombie-Hooknose PWA have seen a significant amount of prospecting and exploration based on mining claim records and the locations of historic prospects/mines. Development and production has occurred near the western boundary of the area near Gladstone Mountain and in the southeastern part of the area along Linton Creek. In the Gladstone Mountain area, the Gladstone and Electric Point mines produced a total of 23,000 tons of lead, 28 tons of zinc, and 17,000 ounces of silver up until 1976 (Mills, 1977; Wolff and others, 2004b). In the Linton Creek area, the Oriole mine produced a total of 2,000 tons of ore with silver, copper, lead, and zinc values prior to 1942 (Derkey and others, 1990).

Much of the Abercrombie-Hooknose PWA has a low or unknown potential for the occurrence of locatable minerals but there are several important areas within the PWA that have a moderate to high potential. A U.S. Geological Survey assessment of undiscovered mineral deposits indicates that the western part of the area near Gladstone Mountain and Windy Ridge is favorable for the occurrence of Mississippi Valley lead-zinc deposits and that the majority of the area is favorable for the occurrence of porphyry-related polymetallic veins (Box and others, 1996). In the Gladstone Mountain area, there is a high potential for the occurrence of lead, zinc, and silver and there are several mines in that area with recorded production (Grant, 1982). Similarly, in the eastern part of the area near Basalt and Horsefly Hills, there is a high potential for the occurrence of lead, zinc, and silver (Grant, 1982). In the vicinity of Abercrombie and Hooknose Mountains, there is also a moderate to high potential for the occurrence of lead, zinc, and silver replacement deposits (Grant, 1982). In the southern part of the parcel near Baldy Mountain, there is a high potential for the occurrence of gold, silver, copper, lead, and zinc in quartz veins associated with emplacement of the Spirit pluton (Grant, 1982). West of Linton Mountain in the eastern part of the area along Linton Creek, there is a moderate to high potential for the occurrence of lead, copper, zinc, gold, and silver (Grant, 1982). In this area, the Oriole mine is currently being studied under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which could lead to a removal action (cleanup) at the site.

At present (3/2008), there are approximately 10 active claims in the Gladstone Mountain area in Sections 17, 18, and 20 of T. 39 N., R. 42 E. There are also large claim blocks in the Pend Oreille river valley that lie immediately east of or along the eastern boundary of the Abercrombie-Hooknose area. In places, for example in Sections 20 and 30 of T. 39 N., R. 43 E. along Linton Creek, these claim blocks overlap into the Abercrombie-Hooknose PWA.

The area has not been the subject of expressions of interest, lease applications, or leases for coal, oil and gas, or geothermal resources. The area has a low potential for the occurrence of coal and oil and gas resources and low or unknown potential for geothermal resources.

Cultural Resources

There are three known cultural resources within the Abercrombie Hooknose PWA. Of these, one reflects a historic homestead, while the others are all associated with the historic Flume Creek white pine logging operation. Sites associated with the Flume Creek district include a corduroy road, headgate, flume remnants, dam and associated outbuildings and refuse dumps. The Flume Creek locales have the potential to be candidates as a National Register Historic District.

Land Uses and Special Uses

Grazing is authorized through term grazing permit.

Private Lands

One section of State Department of Natural Resources (DNR) land is located within the PWA. The 2001 Roadless Rule currently prevents road construction across National Forest System lands to access the DNR land. Wilderness designation would also prevent road construction. The Colville National Forest has assigned this parcel a moderate priority for acquisition. Private land borders portions 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 wilderness is the Salmo-Priest Wilderness, which contains 41,335 acres. This wilderness is five air miles from the Abercrombie-Hooknose area 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 Abercrombie-Hooknose PWA is approximately 3.5 hours.

There are only two relatively small congressionally designated wilderness areas within a three-hour drive of the Spokane area, including the Salmo-Priest Wilderness. In ranking this PWA for its potential to provide a high quality wilderness recreation setting it ranked as moderate. While the area has outstanding scenic attractions and destinations, the trail system is limited, opportunities for overnight use are limited, and the area is relatively remote.

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. Spokane residents also have access to the Idaho Panhandle National Forests for recreation. Travel time and distance are comparable to the areas located on the Colville National Forest. There are 215,898 and 148,961 acres respectively proposed for PWA and wilderness allocation on the Idaho Panhandle National Forests. Seattle, ten hours driving time 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

Five other potential wilderness areas within 15 air miles of the Abercrombie-Hooknose PWA (Grassy Top, Hall Mountain, Harvey Creek, Lost Creek, and Salmo-Priest Adjacent) encompass an additional 38,873 acres. This acreage, in combination with other Colville NF PWAs and designated 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 or the need for a protected area for other unique scientific value or phenomena

Wildlife

The Abercrombie-Hooknose PWA has habitat for grizzly bear, Canada lynx, wolverine, and American marten. The wildlife sustainability index is a 46.6 (a high relative ranking) and the habitat connectivity index is a 31.8 (also a high ranking). Preservation of the area as wilderness would contribute to providing sanctuary for these species.

Fish

The habitat within the Cedar/Jim Creek watershed 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 main Cedar Creek. Bull trout have also been observed in this 6th field HUC in Sweet Creek below its impassable falls. This PWA contains the portion of Sweet Creek above the falls. The habitat condition, for this watershed, is considered to be fair.

The habitat in Cedar Creek is rated poor. However, two juvenile bull trout were observed in the lower portion of this watershed in Canada in the late 1990s. This indicates some past level of successful reproduction. The PWA contains the headwaters of this stream and therefore future management can affect downstream water quality and instream habitat where bull trout fry and juveniles may reside.

The two other 6th field HUCs within the PWA also value to bull trout although impassable falls on Deep, Flume and Peewee creeks limit habitat access to bull trout. Bull trout are so infrequent in northeastern Washington that all habitat utilized by this species becomes important to the recovery of this species.

A majority of the 6th field HUCs in this PWA also provide suitable habitat for resident westslope cutthroat trout subpopulations; approximately 17 percent of the available habitat on the Forest. While the PWA contains only a 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.

It is understood that habitat conditions for TES species within the 6th field HUCs ranges from poor to fair. However, the analysis indicates that this PWA should be considered a high priority for wilderness classification due to the importance of this PWA to future water and habitat quality in potential and existing bull trout habitat and sustainability to a subpopulation of potentially pure westslope cutthroat trout.

Table 6--Cedar/Jim Creek watershed

Focal Species	Miles of Habitat	Percent Total Forest Habitat in Evaluation Area	Vegetation Score	Overall Road Density Score	Habitat Priority Ranking (1=high, 2=mod., 3=low)
Bull trout	14	10	-1.00	-0.60	2
Westslope cutthroat trout	14	9	-1.00	-0.60	2
Interior redband trout	0	0	-1.00	-0.60	3
Pygmy whitefish	0	0	-1.00	-0.60	3

Table 7--Flume Creek watershed

Focal Species	Miles of Habitat	Percent Total Forest Habitat in Evaluation Area	Vegetation Score	Overall Road Density Score	Habitat Priority Ranking (1=high, 2=mod., 3=low)
Bull trout	0.2	<1	-1.00	-0.40	2
Westslope cutthroat trout	6.2	4	-1.00	-0.40	2
Interior redband trout	0	0	-1.00	-0.40	3
Pygmy whitefish	0	0	-1.00	-0.40	3

Table 8--Cedar Creek watershed

Focal Species	Miles of Habitat	Percent Total Forest Habitat in Evaluation Area	Vegetation Score	Overall Road Density Score	Habitat Priority Ranking (1=high, 2=mod., 3=low)
Bull trout	1.5	1	-1.00	-1.00	3
Westslope cutthroat trout	0	0	-1.00	-1.00	3
Interior redband trout	0	0	-1.00	-1.00	3
Pygmy whitefish	0	0	-1.00	-1.00	3

Table 9--North Fork Deep Creek watershed

Focal Species	Miles of Habitat	Percent Total Forest Habitat in Evaluation Area	Vegetation Score	Overall Road Density Score	Habitat Priority Ranking (1=high, 2=mod., 3=low)
Bull trout	0	0	-1.00	-1.00	3
Westslope cutthroat trout	6	4	-1.00	-1.00	2
Interior redband trout	0	0	-1.00	-1.00	3
Pygmy whitefish	0	0	-1.00	-1.00	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 5 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 Ecoregion classification, which is underrepresented in the wilderness system. This 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 20 percent (approximately 7,687 acres) of the vegetative cover if this PWA. These types include forb lands, non-alpine meadows, ponderosa pine, and western red cedar. Taken as a whole, the contribution of underrepresented vegetation types rates as high for the portion of this area with underrepresented cover types, and also as high 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. Such finer scale cover types represented in this PWA include abundant amounts of quaking aspen. Stands of birch, unusual elsewhere in Washington, are represented in northeastern Washington and this PWA.

In particular, the western red cedar cover type, which comprises approximately 5,600 acres in this PWA, and the abundant quaking aspen stands, would make a significant contribution within the eastern Washington planning area.