

WILDERNESS EVALUATION

Jackknife – 621018

8,956 acres

OVERVIEW

History

The 2006 inventory identified this area as meeting the criteria for a potential wilderness area (PWA) as described in Forest Service Handbook (FSH) 1909.12, Chapter 70. The area had not been identified in any previous inventory. The following chart depicts the current 1988 Colville National Forest Land and Resource Management Plan direction for the 2006 potential wilderness area.

Table 1--Management area percentages (rounded)

Colville National Forest						
MA1 Old Growth Dependant Species Habitat	MA10 Semi- primitive, Motorized Recreation	MA3A Recreation	MA5 Scenic Timber	MA6 Scenic/ Winter range	MA7 Wood/ Forage	MA8 Winter Range
8%	15%	1%	16%	3%	54%	2%

Location and Access

The Jackknife Potential Wilderness Area (PWA) is entirely within Ferry County approximately 12 miles northwest of Kettle Falls. It is generally located on the north side of Alligator Ridge, along the south and east of the south fork of Boulder Creek. The PWA then encompasses both sides of Thompson Ridge on the east side of the area.

The Jackknife PWA is accessed either from the Deadman Creek road system via Forest Road 9565-800 on the west side; forest road 9565-080 on the southeast side (Davis Lake Road); on the east by Forest Road 9500-705, and on the north by Forest Road 6110. Forest Trail 107 (motorized trail), which runs along the top of Thompson Ridge, bisects the east side of the area.

Geography and Topography

The Jackknife PWA is in the north central portion of the Kettle Range and lies east of the hydrologic divide between the Columbia River and the Curlew and Sanpoil Valleys.

The area is part of the Okanogan Highlands landform province, which is characterized by moderate slopes with broad rounded summits as a result of repeated continental glaciation. The broader valley bottoms are characterized by outwashed terraces. A prominent feature

is the Kettle Range dividing the Columbia River from the Curlew Valley and is an extension of the Monashee Mountains in British Columbia, Canada.

The highest point in the area is Jackknife Mountain at 5080 feet and located on the southeast side of the Jackknife Area. The lowest point is approximately 2200 feet on the north end of the area near the south fork of Boulder Creek. The area lies generally on the north side of Alligator Ridge, and south and east of the south fork of Boulder Creek; and encompasses both sides of Thompson Ridge on the east side of the area. Approximately three-quarters of the area faces north and west in the south fork of Boulder Creek watershed, while the remainder faces eastward from Thompson Ridge.

The most prominent features of the area are Alligator Ridge on the south, Thompson Ridge, and Jackknife Mountain, which sits between the two ridges.

Current Uses

Current uses include hiking, berry picking, fishing, and hunting. Motorized (ATV/jeep) use occurs along Thompson Ridge.

Appearance and Surroundings

Forest management activities are evident surrounding the Jackknife PWA. The south side of Alligator Ridge has been heavily managed with numerous roads and harvest units. This is apparent from the top of Alligator Ridge. Forest management consisting of roads and harvest units is also apparent on the north and west sides of the south fork of Boulder Creek, which is visible from most of the Jackknife PWA. Forest management on the east side on the lower slopes of Thompson Ridge is not visible from most of the Jackknife area due to the topography and vegetation.

Key Attractions

The Thompson Ridge Trail is one of few open to 4x4 and ATV use on the Colville National Forest. However, use is very low.

CAPABILITY FOR WILDERNESS

Level of Natural and Undeveloped Environment

The Jackknife PWA is a relatively natural setting but past activities are readily visible outside of the area when in the south fork of Boulder Creek watershed. Sounds of vehicles on Forest Road 6110 can be heard from most parts of the Jackknife PWA.

Grazing activities include ¼ mile of fence and use of motorized vehicles.

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. There may be localized disturbances due to grazing activities.

Noxious weed inventory data is not available for this PWA.

The Jackknife PWA is minimally impaired by light pollution from the Republic and Colville area. The entire PWA rates as Class 2 on the Bortle scale. 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.

Level of Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

Due to the narrow shape, and proximity to roads, opportunities for solitude are limited by management activities both within and outside the area. Recreation opportunity is moderate and occurs in the form of hunting, cross country hiking, trail riding, and four-wheeling. There are no outstanding primitive recreational or challenging opportunities or features in the area.

Special Features

There are seven rare plant species present in the Jackknife PWA. Three of these are listed as sensitive by Washington State; small-leaf pussytoes (*Antennaria parvifolia*), yellow sedge (*Carex flava*), and Maryland sanicle (*Sanicula marilandica*). Yellow lady's slipper (*Cyprideium parviflorum*) is listed as threatened by the State. Stalked moonwort (*Botrychium pedunculatum*) and scalloped moonwort (*Botrychium crenulatum*) are listed by the State as sensitive and as species of concern under Federal status. Peculiar moonwort (*Botrychium paradoxum*) is a Federal species of concern and a State threatened species.

The PWA has over 7,500 acres of wolverine habitat, and small amounts of habitat for Canada lynx and American marten. Goshawks nest in the area.

Manageability of Boundaries

The east side is bordered by old harvest units and miscellaneous access roads off Forest Road 9500-705, and is not highly manageable.

The south boundary (Alligator Ridge) would be an effective barrier to sights and sounds coming from that direction, and is readily discernable on the ground.

Forest Road 9565-800 on the west side of the area is discernable, but roads, with vehicular traffic, are not the best boundaries due to noise and the potential for illegal vehicle entrance into a wilderness.

The south fork of Boulder Creek is discernable and manageable as a boundary along the north side of the Jackknife PWA. Traffic along Forest Road 6110, which runs along the north side of the creek, would be a distraction to the wilderness setting. Areas of past and ongoing forest management, including harvest units and roads, north of the south fork of Boulder Creek are easily viewed on the opposite side of the canyon from much of the Jackknife PWA.

AVAILABILITY FOR WILDERNESS

Recreation

Trails include Thompson Ridge Trail #107, which is four miles in length. The trail is open to ATVs, 4 x 4s, motorcycles, hikers, horses, and mountain bikes.

The existing use on the trail in this area is very low. There is some use during the summer months but most of the activity is during the fall season for hunting access.

The use has declined since 1998 when the flood event limited access on the north end of the trail. A portion of the area is in semi-primitive motorized; this is one of five areas within the forest open to motorized recreation.

The access and the terrain limit availability for additional recreational activities, although snowmobile use is allowed in this area.

Wilderness designation would preclude use ATVs, 4 x 4, motorcycles and mountain bikes. All of the jeep trails in the Colville National Forest are located in four PWAs. If all of these areas are designated for wilderness, jeep riders will be displaced from the forest unless alternate trails are developed.

The Jackknife PWA is most closely associated with Colville and Kettle Falls, and the small community of Boyd. The Colville and Kettle Falls tourism websites promote outdoor recreation opportunities in the general vicinity, but do not specifically promote this PWA. A certain amount of existing use on the 4x4 trail is tourism-based; however, this use level is reported as low. If the area is designated as wilderness, use would shift towards non-motorized uses. The trail in this area is high in elevation, affords some views, and is relatively close to the Davis Lake Campground-- all three being factors that would offer some appeal to hikers and stock users. However, the scenery is largely of altered landscapes and fails to offer a sense of remoteness and naturalness that is possible from other nearby areas on the forest. Based on these factors, the area is not likely to become a tourism draw if the area is designated as wilderness.

In considering the relative trade-off between wilderness designation and providing for other backcountry recreational uses, wilderness designation of this PWA would not augment hiking or equestrian opportunities, and it would displace motorized use. Despite being one of only a few 4x4 trails on the forest, this area is not likely to contribute significantly to the mix of regional recreation opportunities either with or without wilderness designation due to the small relative size and lack of attractions.

Table 2--Miles of recreation trails

Motorized Trails	Non-motorized Trails	Snowmobile Trails
4	0	0

Wildlife

The Jackknife area contains low-to-mid-elevation habitats and the wildlife species present reflect this: nearly all bird and small mammal species that occupy low-and mid-elevation

habitats on the forest probably inhabit the area during some part of the year. Portions of the area lie within a lynx analysis unit, though the habitat is marginal or nonexistent.

Precluding timber harvest from creating foraging habitat would not result in a significant loss of lynx habitat. None of the species that require secluded habitat currently reproduce in the area. Woodland caribou probably did not occupy the area within the past century; grizzly bears occupied the area prior to the loss of the salmon fishery in Lake Roosevelt due to Grand Coulee Dam; gray wolves inhabited Ferry County, and the area is too low in elevation to support wolverine denning habitat. Northern goshawks have nested in the area. With an extensive road system from timber harvest activities south of the area, the greatest benefits from designating the area as wilderness would be preventing road construction, benefiting those species that depend on secluded habitat and high quality forage (less affected by noxious weeds, which often spread along new roads).

The entire area contains summer range for mule and white-tailed deer. Winter range occurs on the drier habitats on the northern and edge of the northeast side, and portions of the ridge that runs along the south edge, bends northward and bisects the northeastern portion. Fire exclusion has allowed an understory of shade-tolerant trees to develop in many of these stands, which decreases some stands' habitat quality for deer. Projects like timber harvest and prescribed fire to open stands to improve forage or remove the understory to improve cover would be feasible in winter range. If the area were designated wilderness, using harvest to manage stands to improve big game forage and cover would not be an option: the forage base would continue to decline as the forest grows more closed. Though mule deer do not require secluded habitat, they tend to live longer and thus the males achieve larger antlers in areas away from roads with vehicle traffic. These larger-antlered males are more prized by hunters. Secluded habitat is less of a concern with white-tailed deer.

The open stands of Douglas-fir on the ridges also support blue grouse. Projects that improve deer winter range in these areas would have an ancillary, positive effect to blue grouse habitat. Prescribed fire could be used as the primary management tool on the ridges and saddles, so wilderness designation would not change potential management.

Late-succession stands occur in the western portion, and other portions of the north-facing bowl in the west side support large trees. Wilderness designation would prevent these areas from being harvested, though again because periodic ground fires have not frequented these drier sites the understory of shade-tolerant trees have grown thick. In order to enhance late-succession habitat, the understory needs to be thinned or removed either via fire or harvest. Using fire without associated harvest probably would result in a stand-replacement fire.

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	NA	NA	NA
Canada lynx	6	1	<1
Wolverine	7,539	2	1
American marten	28	2	<1

Water and Fish

The Jackknife PWA is located entirely in the Kettle River Subbasin (4th HUC). The PWA contains tributaries to the South Fork Boulder Creek (6th HUC). Existing habitat condition or the existence of fish subpopulations within these tributaries is unknown. The South Fork runs along or near the western boundary of this PWA. Fish habitat in the South Fork Boulder Creek has been negatively impacted by a past debris flow, riparian roads, overgrazing of riparian vegetation by livestock and past timber harvest. Stream habitat complexity is low. The North Fork Boulder subwatershed has been analyzed for vegetation and road conditions. When vegetation conditions and road related effects are considered cumulatively, this subwatershed was rated poor. This is due to past harvest activities and high road densities.

The South Fork combines with the North Fork to form Boulder Creek. This larger watershed also contains a hybrid swarm of interior redband/coastal rainbow trout and brook trout. It constitutes a 6th field HUC that flows into the Kettle River subbasin. Approximately 98 percent of the 6th field watershed is located above a natural falls that blocks upstream fish passage to focal species that may reside or travel through the lower Kettle River. No pure focal species are known to reside in Boulder Creek or its tributaries above these falls.

It is not clear whether the Jackknife PWA contains fish bearing habitat due to lack of surveys in the small tributaries. However, this habitat is not considered essential to the recovery of the bull trout, which has been observed within the Kettle River in the past.

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. The adverse effects of such actions could extend beyond the boundaries of the PWA and continue throughout the 6th field HUCs.

Range

The area contains four domestic livestock grazing allotments. This allotment is grazed under a deferred rest rotation management system. There is a quarter mile of fence. The permittees are allowed to use motorized vehicles within the area.

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
6	80	8	0

Vegetation and Ecology

Very little of the Jackknife PWA is south-facing. About half of the area is north-facing, with about a quarter being east-facing and a quarter west-facing. Because much of the area is in lower elevations, almost two-thirds qualify as dry forest, but not the driest plant associations within that group. Douglas-fir is the dominant overstory species along with western larch, lodgepole pine, ponderosa pine, and grand fir in various lesser roles. Wet areas (drainages) on the north and east facing slopes feature western redcedar, along with Engelmann spruce. Some subalpine fir can be found in the highest elevations of the area.

The lower elevations feature Douglas-fir/ninebark and Douglas-fir/ninebark-twinflower dry plant associations. Common understory plants include Oregon grape, ninebark, serviceberry, and snowberry. The higher elevations and north-facing slopes are more dominated by Douglas-fir/snowberry and Douglas-fir/big huckleberry plant associations, which feature plants such as huckleberry, twinflower, snowberry, Oregon grape, and serviceberry in the understory.

Only about a quarter of the area qualifies as wildland urban interface (WUI), with the majority of this being on the eastern edge of the Jackknife PWA. This part of the Jackknife area features broken ground with many interspersed rock outcrops. This feature makes it difficult for wildfire to spread broadly across the landscape, and has historically reduced the size of fire starts in the area.

The Healthy Forest Restoration Act (HFRA) authorizes direction to implement fuel reduction projects in the WUI. The HFRA prohibits authorized projects in wilderness areas. The portion of dry/mesic forest within the WUI increases this concern to forego the ability to treat the fuels mechanically if designated wilderness.

Little of this area is less than 20 percent slope. This fact combined with the topography that features rock outcrops and steeply notched side-drainages, has hindered road development in the past.

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 ft³/ac/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 4--Stand data percentages

Suitable for Timber Harvest	Forest Groups		WUI	
	0%	Parkland	0%	Total WUI
Cold Dry		0%	WUI in Dry and Mesic Forest	82%
Cold Moist		25%		
Mesic		9%		
Dry		63%		
Non-forest		3%		

Fire

The area in which the Jackknife PWA is located has a high occurrence of wildfires due to the frequency of summer lightning storms tracking through that portion of the forest. There is little evidence of major fire visiting this area in the past hundred years or more, thus surface fuel loading is high and ladder fuels are significant in the dry forest types, relative to historical conditions.

Some of the reasons why several of the area’s lightning fires have remained small can be attributed to good access from nearby roads and the existence of rock outcrops interspersed throughout the PWA. Large fires starting outside of the PWA however, could enter and burn through with significant intensity due to high fuel loadings.

The eastern edge of Jackknife PWA is within WUI and that portion would be considered a moderate priority to receive fuel treatments. One possible fuel treatment scenario: prescribed fires conducted with high fuel moisture conditions could reduce some concentrations of heavier fuel loadings.

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 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 is the major tree species in Jackknife, and many of the largest, oldest individuals have been killed. 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.

Douglas-fir dwarf mistletoe and western larch dwarf mistletoe probably occur in approximately 50 percent of the Douglas-fir and larch stands in the Three Rivers 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 Three Rivers Ranger District. 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 roadless 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 roadless 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-firs.

Threatened, Endangered, and Sensitive Plant Species

There are seven rare plant species present in the Jackknife PWA. Three of these are listed as sensitive by Washington State; small-leaf pussytoes (*Antennaria parvifolia*), yellow sedge (*Carex flava*), and Maryland sanicle (*Sanicula marilandica*). Yellow lady's slipper (*Cypripedium parviflorum*) is listed as threatened by the State. Stalked moonwort (*Botrychium pedunculosum*) and scalloped moonwort (*Botrychium crenulatum*) are listed

by the State as sensitive and as species of concern under federal status. Peculiar moonwort (*Botrychium paradoxum*) is a federal species of concern and a state threatened species.

Noxious Weeds

Noxious weed inventory data is not available for this PWA.

Minerals and Soils

Soils within the area are derived from volcanic ash, loess deposits, and glacial till. Steeper south and west aspects have less evidence of ash deposition due to past erosion. The ash material overlies rocky granitic glacial till.

The Jackknife PWA is located in the eastern part of the Kettle Metamorphic Core Complex, a significant structural feature where relatively deep crustal rocks have been exhumed as a result of major extensional tectonics. The area including and east of Thompson Ridge is underlain by pre-Tertiary layered metamorphic rocks, namely marble and quartzite. The area west of Thompson Ridge is underlain by pre-Tertiary gneiss. A small Tertiary granitic pluton is exposed in the far eastern part of the area.

A review of historic claim records indicates that a limited amount of prospecting and exploration has occurred in the northeast corner of the area. There are no significant historic prospects or mines within the area and at present (4/2008), there are no active claims within the Jackknife PWA. The eastern edge of the area, east of Thompson Ridge, has a high potential for the occurrence of uranium (Grant, 1982; Bernardi and others, 1982). Furthermore, in the southern part of the area near Jackknife Mountain, there is a low to moderate potential for the occurrence of gold and silver (Grant, 1982). The remainder of the area has a low or unknown potential for locatable minerals.

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 no potential for the occurrence of coal and oil and gas resources and a low or unknown potential for geothermal resources.

Cultural and Heritage Resources

There are three known cultural resources within the Jackknife PWA. Historic themes for these sites are associated with homesteading and trapping. 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.

Land Uses and Special Uses

The area has an ongoing permit for livestock grazing.

Private Lands

Private lands within ¼ mile of the northeast corner of the area are owned by local ranching interests. Additional private lands exist approximately ¾ mile south of the Jackknife PWA along county roads in the Deadman Creek watershed. There are no private lands within the Jackknife PWA.

Over 20 percent of the PWA is within the wildland urban interface where restoration of forest stands is a concern.

NEED FOR WILDERNESS

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

The Jackknife PWA is approximately 45 air miles west of the 41,335 acre Salmo-Priest Wilderness on the Colville National Forest, and 80 air miles east of the 41,335 acre Pasayten Wilderness. These wilderness areas are close enough for the local population to access within three hours. The Pasayten Wilderness is much closer to the major population center of Seattle than is the Jackknife PWA. The Jackknife PWA is about equal in distance from Spokane as the Salmo-Priest Wilderness. This area is only a fraction of the size of the Pasayten Wilderness and less than a fourth the size of the Salmo-Priest Wilderness.

There are only two small congressionally designated wilderness areas within a three-hour drive of the Spokane area. In ranking this PWA for its potential to provide a high quality wilderness recreation setting it ranked as low. The area is relatively accessible, but the surrounding setting is highly modified, and the trail system within the PWA is limited.

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

Much of the use is from northeastern Washington residents. Seattle, an eight-hour 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 through 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 and crowding in the Salmo-Priest Wilderness.

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

There are seven other PWAs within fifteen air miles of the Jackknife PWA (Bald Snow, South Huckleberry, Deer Creek, Hoodoo, Owl Mountain, Profanity, and Twin Sisters), which encompass an additional 111,253 acres. This acreage, in combination with other Colville National Forest 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.

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

Wildlife

The PWA has over 7,500 acres of wolverine habitat, and small amounts of habitat for Canada lynx and American marten. Goshawks nest in the area. The wildlife sustainability index is 6.3 (a low relative ranking) and the habitat connectivity index is 8.4 (also a low relative ranking).

Fish

This habitat is not considered essential to the recovery of the bull trout or the sustainability of other aquatic focal species. This is due to the fact that the interior redband trout in Boulder Creek has hybridized with coastal rainbow trout and a pure population above the falls is unknown. In addition, bull trout naturally can not access most of the habitat in this watershed. The analysis indicates that this PWA should be considered a *low* priority for wilderness classification due to the lack of natural access to this PWA for focal species and the existing hybridization of interior redband trout and poor habitat conditions.

Table 5--South Fork of Boulder 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	0.5	<1	-1.00	-0.30	3
Westslope cutthroat trout	0	0	-1.00	-0.30	3
Interior redband trout	0	0	-1.00	-0.30	3
Pygmy whitefish	0	0	-1.00	-0.30	3

Threatened, Endangered, and Sensitive Plant Species

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 ranked as moderate 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

Designated wilderness is under-represented in the Okanogan Highlands ecoregion.

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 17 percent (approximately 1,480) 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 ranks as moderate for the portion of this area with underrepresented cover types, and also 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. Such finer scale cover types represented in this PWA include sparse amounts of cottonwood and aspen.

In particular, the forb lands cover type, which comprises approximately 1,800 acres in this PWA, and the ponderosa pine cover type, which comprises 1,400 acres, would make a significant contribution within the eastern Washington planning area.