

WILDERNESS EVALUATION

Sawtooth - 608027

178,186 acres

OVERVIEW

The original Chelan Inventoried Roadless Area consisted of portions lying both north and south of Lake Chelan. The area north of Lake Chelan is contiguous with the original Sawtooth IRA and has now been added to the Sawtooth Potential Wilderness Area (PWA). For wilderness evaluation purposes, contiguous PWAs should be evaluated together. The evaluation will continue to distinguish between the original IRAs with subtitles of North Lake Chelan Portion and Sawtooth Portion. The Sawtooth portion will be further delineated into three areas for specific portions of the evaluation. They are the North Cascade Scenic Area, the Twisp River Area, and the Sawtooth Backcountry Area. However, tables displaying resource conditions and need will consider all portions together.

History

North Lake Chelan Portion

This portion of the PWA is 27,247 acres. This area was originally suggested for scenic area consideration in 1915 as the Chelan-Sawtooth area. In 1984, a portion of that area became part of the newly created Lake Chelan-Sawtooth Wilderness. The remaining portion became the motorized Sawtooth Backcountry in the 1990 Wenatchee National Forest Land and Resource Management Plan that allowed for motorized trail use in the roadless area.

Sawtooth Portion

The area was originally inventoried as six separate roadless areas totaling approximately 186,000 acres during RARE I. The areas were Lucky Jim (11,900 acres), Middle Creek (14,400 acres), Midnight Mountain (17,600 acres), Sawtooth (96,800 acres), Twisp River (30,800 acres), and Wolf Creek (14,500 acres). Between 1972 and 1979, timber sales and roads, along with new roadless area inventory criteria, reduced the total size of these areas by approximately 8,000 acres. The areas were combined during RARE II including that portion of the Liberty Bell area south of the North Cascades Highway. The RARE II process did not recommend the area for wilderness designation. The Washington State Wilderness Act of 1984 designated approximately 36,000 acres of the PWA as part of the North Cascades Scenic Area and approximately 96,200 acres as a portion of the newly established Lake Chelan-Sawtooth Wilderness. That portion within the North Cascades Scenic Area can have management activities if the existing scenic and recreational values are maintained. Between 1979 and 1984, approximately 6,000 acres were impacted by roads and timber harvest. Since 1984, approximately 1,160 acres were impacted by roads and timber harvest.

Since the 1989 and 1990 Land and Resource Management Plan decisions, approximately 1,322 acres were removed from previous inventory (combining both portions) due to nonconforming uses such as road construction and logging; 30,074 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 management allocations for the 2006 potential wilderness area. Percentages are rounded.

Table 1-- Okanogan National Forest Land and Resource Management Plan (1989)

MA30	MA31	MA32	MA33	MA34	MA37	MA38	MA42	MA46	MA47	MA48
12%	10%	15%	1%	32%	3%	1%	1%	20%	4%	1%

Table 2--Wenatchee National Forest Land and Resource Management Plan (1990)

EW1	EW3	GF	RE2A	RM1	ST2
10%	24%	1%	56%	7%	1%

Location and Access

North Lake Chelan Portion

The area is adjacent to the Lake Chelan-Sawtooth Wilderness and Lake Chelan in Chelan County on the Chelan Ranger District. Access to the North Lake Chelan portion is via the Grade Creek Road and Summit, Safety Harbor, Fish Creek and Prince Creek Trails.

Sawtooth Portion

The area is located from northwest to southwest of Twisp along the western edge of the Methow Valley Ranger District. The area consists of a moderate size block of land east of the Lake Chelan-Sawtooth Wilderness; strips of land along the lower elevations of the Lake Chelan-Sawtooth Wilderness; and a moderate size block of land north and west of the Lake Chelan-Sawtooth Wilderness. Most lands are located in Okanogan County except for a small portion in the Washington Pass-Rainy Pass area, which is located in Chelan County. From Twisp or Winthrop, access is over State Highways 20 and 153, and county and national forest roads in Cedar Creek, Wolf Creek, Bridge Creek, Twisp River, Buttermilk Creek, Libby Creek, North Fork Gold Creek, Crater Creek, Foggy Dew Creek, and South Fork Gold Creek.

Geography and Topography

North Lake Chelan Portion

This area is dominated by glacially carved Lake Chelan. The original area ranges from Dutch Harbor to Point-No-Point to the Sawtooth ridge. It now includes additional acreage that extends down lake to Antilon Creek that is bounded at the top by the Grade Creek Road. The topography on the lower slopes is characterized by glacial deposit, glacially rounded bedrock, and some hanging valleys. The non-glaciated upper segments are

dominated by very rough broken and craggy rock features. Elevations range from about 1,100 to 8,400 feet.

Sawtooth Portion

The northern portion of the area consists of rugged mountains with deep valleys tracked by avalanche paths. Several cirque lakes dot the higher country. Sharp ridges divide major drainages. The southern portion of the area ranges from more gently rolling hills to deep V-shaped valleys and somewhat sharp, well-defined ridges. Outcrops of bedrock are common on steep southern slopes. Elevations range from 2,400 feet to approximately 9,000 feet on Gardner Mountain.

Current Uses

North Lake Chelan Portion

The current use is for dispersed recreation. The most popular use is motorized trail riding with two-wheel dirt bikes, followed by boat-in camping, hunting and fishing, horseback riding, backpacking, and limited mountain biking in descending order of popularity. There is also a Forest Service repeater located on Old Maid Mountain, several water transmission lines, and an isolated cabin on Uno Peak. Intermittent mineral exploration activity in Miner's Basin has occurred for many years. Several grazing permits were active in the area in the Buttermilk, McFarland, and Horsethief Allotments; however, all permits were waived and allotments are currently inactive. Outfitter guides are active in the area, particularly in the fall during hunting season. Outfitters currently include primarily horse and burro packers, though other types (including helicopters) have operated in the past.

Sawtooth Portion

Recreation is the primary use in the area and the Sawtooth Range has a statewide reputation for outstanding recreation opportunities. **North Cascades Scenic Area:** The North Cascades National Scenic Area is recognized nationally. Use levels throughout the area are moderate to high especially on trails and around lakes. Day hiking and backpacking are the most popular summer activities, with backcountry skiing and snowmobiling occurring at low to moderate use levels in winter and spring. The Liberty Bell and Early Winters Spires areas are regionally significant rock climbing destinations. Several outfitter-guides provide services including backpacking, horseback riding, mountain climbing, hunting, and backcountry and helicopter-assisted skiing. **Twisp River Area:** Most trails within this area are used by hikers, backpackers, and horseback riders enroute to destinations within the adjacent Lake Chelan-Sawtooth Wilderness. Use on these trails range from low to moderate. The Midnight Mountain area is most commonly used during hunting season. Established dispersed camps are accessed by several user-maintained trails. Overall, recreational use is low. The Little Bridge and Wolf Cattle and Buttermilk Sheep allotments are within this area. Currently, timber harvest is allowed. **Sawtooth Backcountry Area:** Scenic high country trails in the southern portion of the area provide for two wheeled motorized dirt bikes, mountain bikes, hikers, and horseback riding. Use is moderate. The area includes portions of the Rainy Creek Unit of the Hunter-McFarland cattle allotment. Approximately 12 mining claims are present in the southern portion of the Sawtooth PWA.

Appearance and Surroundings

North Lake Chelan Portion

This area has a moderate to high visual variety of landform including knife ridges, a moderate amount of vegetation, rock forms, a few scenic lakes, and subalpine meadows, cirque basins, lateral moraines, hanging valleys, and waterfalls. The area lies on the north side of Lake Chelan facing south, southwest, and west. It includes the upper drainages of the Middle and East Fork of Prince Creek, Safety Harbor Creek, and the lower elevations of all the creeks between Falls Creek and Antilon Creek. Vegetation is broken on steep open slopes with broad ridgetops and numerous densely vegetated creek drainages. Evidence of old and recent burns in the Safety Harbor, Lower Grade, Camas, Coyote, Gold, Poison, and Mitchell Creek drainages create a varied landscape. Lakes include Cub and Boiling.

The area is primarily viewed as foreground and middle-ground from scenic Lake Chelan, the Sawtooth trail, and other trails along the drainage bottoms.

Boundaries are the Lake Chelan-Sawtooth Wilderness to the west, the Sawtooth ridge to the north and northeast, Lake Chelan to the south and southwest, and roaded (Grade Creek Road #8200) land to the east.

Sawtooth Portion

Much of the area gives the appearance that changes occurred primarily due to forces of nature. Spectacular scenery and geologic formations can be found, especially in the Sawtooth backcountry and North Cascades Scenic Area. Lower elevations are forested, rising to sub-alpine meadows and lakes, open ridges and peaks. Major impacts on the natural integrity and appearance of the area is the evidence of heavily used camp spots, helispots, and old mine workings. A portion of the area in the Little Bridge Creek drainage and on the north side of Twisp River was helicopter logged in the 1980s. The canopy closure blends with unharvested areas. Stumps are visible and beginning to rot within the logging units, but are not substantially noticeable in areas of public use.

Boundaries include the Lake Chelan-Sawtooth Wilderness to the west and south, and the North Cascades National Park; also to the west. The northern boundary is State Highway 20. Several parcels of private land in the northeast share a common boundary with the area.

Key Attractions

North Lake Chelan Portion

High mountain meadows that include Prince Creek and Safety Harbor Creek drainages, and Boiling and Cub Lakes are key attractions. These are among the few high elevation lakes accessible by motorized two wheel trail bikes. Safety Harbor, Mitchell Creek, and Deer Point boat-in campgrounds are also key attractions. Lake-oriented wildlife viewing opportunities (e.g. bighorn sheep and mountain goats) are growing in popularity.

Sawtooth Portion

North Cascades Scenic Area: Key attractions in the area are Liberty Bell Peak, Early Winters Spires, Silver Star Peak, Blue Lake, Lake Ann, Rainy Lake, Maple Pass, Cedar Creek Falls and Easy Pass. A short section of the Pacific Crest Trail occurs within the area and is a major recreational route. **Twisp River Area:** Key attractions are the thirteen trails that pass through the PWA to access the Lake Chelan–Sawtooth Wilderness. **Sawtooth Backcountry Area:** Key attractions include Cooney, Martin, Eagle and Crater Lakes, Angels Staircase, and Merchants Basin.

CAPABILITY FOR WILDERNESS

Level of Natural and Undeveloped Environment

North Lake Chelan Portion

Human influence within and around the area has been considerable with a moderate impact on resources. Existing structures and activities include: Remnants of an old electrical transmission line along Lake Chelan; developed campsites at Deer Point, Mitchell Creek, and Safety Harbor; docks; private land including year around homes and isolated roads; water transmission lines; three miles of old road; a trail that currently leads to a small concrete dam; a hunting cabin; old mine diggings, buildings and equipment; abandoned wood, and a metal water flume; cattle and sheep grazing allotments and associated developments (corrals, drift fences, counting “V’s”, etc.); trails open to motorbikes; firebreaks; and backcountry facilities such as log tables, Wallowa toilets, hitch racks, steel fire-rings, and bulletin boards. The Safety Harbor fire of 1970 created a large dozer line which is still evident. A radio repeater is located on Old Maid Mountain.

Rainbow trout have been introduced into some drainages. They have established self-sustaining populations, and have also interbred with native cutthroat trout in some areas. Introduction of both native and non-native fish to formerly fishless lakes and streams in the area has likely impacted native amphibian and invertebrate populations.

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. Mitchell Creek has 1.7 miles classified by the Washington State Department of Ecology as Category 1, which means the water meets tested standards.

An irrigation diversion dam is still present in Safety Harbor Creek, but water is no longer diverted. Dams are also present in several other creeks just above the Grade Creek Road and the PWA boundary. These dams also no longer divert water, but some effects of the former system do influence the streams within the PWA.

The PWA has a water source protection area totaling 13,981 acres of stream that contributes to a community water system for Chelan Ridge area.

Weeds are prevalent at the lower elevations, particularly cheatgrass that has invaded much of the lakeshore area due to past effects from winter horse and cattle grazing on these low-elevation, south-facing slopes. Knapweed occurs along some trails. A long history of

heavy sheep grazing has also affected plant composition and soil integrity in the lower elevations, in Safety Harbor Creek, and in the high elevation meadows.

Eurasian milfoil has established in some shallow lakeshore areas, particularly near developed campgrounds such as Mitchell Creek.

The offsite intrusions may include the sounds and sight of motorboats and aircraft along Lake Chelan, and the occasional glimpses of Grade Creek Road #8200. This zone has had a long history of human influence and activity.

The North Lake Chelan portion of the Sawtooth PWA is partially impaired by light pollution from the Chelan area. The central and northern portions of the PWA (96 percent of the PWA) rates a Class 2 on the Bortle Scale, whereas the southern portion (3 percent of the PWA) rates as a Class 3 with the very southern tip (less than one percent of the PWA) rated a Class 4. 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. Visual observing is still relatively unimpaired. 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.

Sawtooth Portion

The 150-acre Wolf Creek Research Natural Area (RNA) is located within the area and provides an example of the bitterbrush/bunchgrass community. In addition, other plant communities are represented within the RNA.

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

North Cascade Scenic Area: Most of the area is unmodified by humans and appears natural. There are trails throughout the area that range from primitive unmaintained trails to the paved accessible Rainy Lake Trail. Campsites associated with the trails are generally noticeable but are undeveloped without constructed features. There are substantial areas between trails that are largely unmodified. Highway 20 can be seen from portions of the area and the sound of traffic can be heard for some distance from Highway 20. **Twisp River Area:** Several hundred acres were helicopter logged during the 1980s in the Canyon Creek portion, and another hundred acres in the head of Little Bridge Creek. A portion of the area near the Scatter and Slate trails were also helicopter logged during this time. Stumps would be the most obvious intrusion from the timber sale activities. **Sawtooth Backcountry:** The area is primarily natural appearing with trails and undeveloped campsites the most obvious human influence. A few campsites do have fire grates and/or hitchrails, but they are not permanent modifications.

Off-site intrusions include the sight and sound of Highway 20 from locations in the North Cascades Scenic Area.

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 within the Sawtooth portion. Foggy Dew Creek has 1.6 miles and Gold Creek has 2.0 miles classified by the Washington State Department of Ecology as Category 1, which means the water meets tested standards. Lamont Lake and Wing Lake are also classified as a Class 1. There may be localized disturbances due to grazing activities.

There are several known noxious weed species present in the PWA.

The Sawtooth portion of the Sawtooth PWA is minimally impaired by light pollution from the Twisp and Winthrop areas. The entire Sawtooth portion of the Sawtooth 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

North Lake Chelan Portion

The area has a variety of terrain features that provide a moderate amount of challenge for summer recreation access. It provides a rather significant winter recreation challenge as all trails are non-motorized and ungroomed trails, and provides great opportunities for solitude in this season.

Due to the high, open, and less rugged topography in the upper basins, good opportunities exist for primitive recreation off the developed trail system. Cross-country backpacking, hiking, fishing, horseback riding, and hunting are popular activities. High elevation backcountry cross-country skiing holds good potential; however, winter access to the area is difficult. Summer and fall motorized trail bike activities offer access along system trails to reach off-trail activities.

Opportunities for solitude are limited along the lakeshore part of the PWA. Boat and floatplane traffic along the lake corridor reduce opportunities for solitude during the summer. Traffic in the winter is much lower, with very little potential for disturbance to the lakeshore area. Private land inclusions occur in several areas along the lakeshore. While human activities at these sites currently intrude little on primitive recreation opportunities, property development is likely to increase in the future, which would reduce opportunities for solitude and primitive or unconfined recreation in the vicinity of the properties.

Sawtooth Portion

North Cascade Scenic Area: During the summer, opportunities for solitude are generally low at key attractions within the North Cascade Scenic Area. Opportunities for solitude off trail would be moderate to high throughout the area. Primitive recreation opportunities are moderate to high and include hiking, backpacking, rock climbing, and mountaineering.

Twisp River Area: Opportunities for solitude are low along the Twisp River corridor and high in the Midnight Mountain area where there are no key attractions. Opportunities for primitive recreation are low to moderate. **Sawtooth Backcountry Area:** Opportunities for solitude would be low to moderate at most key attractions during the summer season. Opportunities for solitude would be high off trail and during spring, fall, and winter throughout the area. Primitive recreation opportunities are high and would include hiking, backpacking, horseback riding, and packing with stock.

Special Features

North Lake Chelan Portion

Lake Chelan is the deepest gorge in North America and is a primary scenic attraction in Washington State. Pacific fishers have been reported in this portion of the PWA on several occasions. This portion of the PWA may be part of a remnant stronghold for this species. Wolverines have been reported near high elevation cirque basins. Wolves have been reported both on the low elevation roadless winter range, and in the upper elevations during the fall. The area is within the Lower Chelan Grizzly Bear Management Unit. This portion of the PWA offers a unique link between high elevation summering habitats in both the PWA and adjacent wilderness, and low elevation unroaded winter range along Lake Chelan. Bighorn sheep, extirpated with the introduction of domestic sheep at the turn of the century, were reintroduced to the area in 1999 and appear to be thriving in this unroaded grassland/shrub steppe habitat. Bald eagle sightings occur in this area, primarily in the winter months. Western gray squirrels, a Washington State threatened species and a Forest Service sensitive species, is known to occur here. The western gray squirrel is limited to three isolated populations statewide, with an estimated total of 468 to 1,405 individuals.

The lower quarter mile of Safety Harbor Creek provides important spawning habitat for Kokanee, a land-locked salmon.

Several rare plant populations are known to occur within this portion of the PWA including Salish fleabane (*Erigeron salishi*) and pale alpine forget-me-not (*Eritrichium nanum* var. *elongatum*). The Mount Bigelow/Hoodoo Basin area appears to be a botanical hot spot.

Prehistoric cultural resources have been found within the lower portions of the PWA, including some possible American Indian encampments sites. At least one site is a potentially significant cultural resource. There is one National Register-eligible site, the Crow Cabin. The Coyote Creek incline, a unique historic feature associated with early logging and with later construction of the Lake Chelan Reclamation District irrigation flume, is located just west of Coyote Creek, in the southern portion of the unit. There are remnants of former mining operations in Miners and Horsethief Basins.

Sawtooth Portion

A population of Kotzebue's grass of Parnassus (*Parnassia kotzebuei*) in the Twisp River area, is one of two known populations in Washington State. The Sawtooth portion of the PWA contains unique sites that are suitable as wolverine natal denning habitat. The PWA

provides both high Source Habitat Priority scores and high Habitat Connectivity Scores for American marten, Canada lynx, wolverine, and grizzly bear.

The Cultural Resource Overview of the Twisp-Winthrop-Conconully Planning Unit (Bennett, 1979) identified evidence of several cabins, a lookout, and a fossil deposit in the Sawtooth portion of the PWA.

Manageability of Boundaries

North Lake Chelan Portion

The north lake area lies adjacent to and east of the Lake Chelan-Sawtooth Wilderness. It is bounded on the south by Lake Chelan, on the north by the Methow Valley Ranger District boundary along the Sawtooth Ridge, and by a roaded area to the east. The area consists of the Safety Harbor Creek drainage, the upper portions of the East Fork and Middle Fork of Prince Creeks, and an area along Lake Chelan between Safety Harbor Creek and Antilon Creek. All boundaries are easy to define and locate on the ground, with the exception of the line between Safety Harbor and Antilon. This line does not follow any prominent geographic feature, but instead forms a narrow band flanked by the Grade Creek Road to the north and following the forest boundary along the shore of Lake Chelan and around private shoreline properties to the south. The area does include about three miles of an old road in Safety Harbor Creek drainage that has reverted to a motorized two wheel trail-like appearance after many years. This route is presently closed to four-wheeled vehicles. Off-site intrusions include the motorized use along the Lake Chelan corridor and the sights and sounds of the existing road system to the east of the area. The boundaries are relatively manageable as the steep terrain generally precludes physical intrusions. Possible exceptions include limited off-trail hill-climbing snowmobile use during the winter.

Sawtooth Portion

If this portion was added to the wilderness area, it would require changing boundaries from generally readily defined ridges (except in the Twisp River area) to less defined features such as contour lines with the exception of the northern boundary of the PWA which is defined by Highway 20. This would affect the capability to manage these additions as wilderness. In addition, a narrow finger of wilderness would be created between the North Cascades Scenic Area and Stephen Mather Wilderness in the North Cascades National Park.

WILDERNESS AVAILABILITY

Recreation

North Lake Chelan Portion

The area has value for unroaded types of recreation activities, both motorized and non-motorized. The motorized portion of the Sawtooth PWA receives relatively low use compared to other motorized areas in the state due to other areas being more readily

accessible, however the area has a very devoted user base due to the opportunity to access subalpine areas with motorbikes and mountain bikes. This unique opportunity is not common in Washington (the Dark Divide on the Gifford Pinchot National Forest also offers a subalpine motorized setting, but does not have the extensive system of lakes found in the Sawtooth PWA). Current use on the Lake Chelan-Sawtooth Wilderness is more than that of the Sawtooth PWA. The level of conflict between motorized and non-motorized users of this area currently appears to be low.

If designated as wilderness, the Crow Cabin and a cabin near Uno Peak would no longer be available for public occupancy.

The town of Chelan and Lake Chelan area is a tourism-based community. Web-based information strongly promotes the natural beauty of the area, the vast amount of protected lands, and the remote up-lake communities. While most visitors remain down-lake, a significant amount of use occurs up-lake as well. A relatively small percentage of visitors access the Sawtooth PWA; most primarily use the area for hiking or boat-in camping. The marketing of outdoor recreation primarily features cross-country skiing, downhill skiing, boating, and snowmobiling. Promotional materials don't directly mention the Sawtooth PWA. The Sawtooth PWA provides the scenic backdrop viewed from Lake Chelan.

If designated as wilderness, there would likely be a modest increase in the number of hikers due to media publicity, which would be offset by the loss of motorized and mountain bike use. Overall access to this area is a limiting factor that keeps use levels relatively low in most areas. Outfitter guides with large parties would also be limited by wilderness designation.

Sawtooth Portion

Semi-primitive recreation opportunities were fragmented into areas allowing non-motorized use versus motorized use with the passage of the Washington State Wilderness Act of 1984. The most significant acreage of semi-primitive, non-motorized opportunities are located between the North Cascades Scenic Area and North Cascades National Park, and in the Upper Cedar Creek, Little Boulder Creek, Upper Bridge Creek, Scaffold Creek, Crater Creek, and Middle Fork Gold Creek drainages. Most of these areas are adjacent to the Lake Chelan-Sawtooth Wilderness. Semi-primitive motorized recreation and mountain biking opportunities are provided in the Foggy Dew and Martin Creek drainages. Local stock users also make use of the area, and day use is on the rise. Several outfitter guides prefer using the Lake Chelan-Sawtooth PWA because they can take larger groups than are allowed in the nearby wilderness.

Wolf Creek is eligible for inclusion into the National Wild and Scenic Rivers System under a recreation classification. The potential classification for Wolf Creek from the forest boundary to the wilderness boundary is recreational river.

Many trails pass through the area and provide access to the Lake Chelan-Sawtooth Wilderness, Chelan Ranger District, and North Cascades National Park. The area includes the Eagle Lake, Blue Lake, and Cedar Creek National Recreation Trails. The area also provides high quality backcountry skiing opportunities.

Winthrop has a western theme town tourism-based economy. Twisp also heavily promotes tourism. Winthrop area promotional materials focus more on the town and its businesses;

however, there is a strong linkage between tourism of this area and the national forest. The area is part of the scenic Cascade Loop and is a gateway to the North Cascades National Park. Opportunities for hiking in the PWA appeals to both tourists passing through the area (the Rainy Lake Trail is paved and has a steady stream of traffic) as well as destination-oriented trips into the high country. The Methow Valley has also gained notoriety as a destination mountain biking area with much of the use occurring on the groomed ski trails. The trails of the Chelan-Sawtooth PWA complement what the area has to offer. The Twisp area relies more heavily on promoting the outdoor environment; the Chamber of Commerce website portrays the Lake Chelan-Sawtooth area in photos without actually describing specific locations or opportunities.

If designated as wilderness there could be a shift in tourism-based spending. The area would likely attract more backpacking use, much of which is tourism-based. However, gain in revenue would be offset by the loss of the only motorcycle trail system on the district. Mountain bike use of the area is also tourism-based.

North Cascades Scenic Corridor: Recreation is the primary use in the area. The North Cascades National Scenic Area has a national reputation. Hiking and backpacking use levels throughout the area are moderate to high, especially on trails and around lakes. There is a continuous upward trend in day hiking use in the North Cascades Scenic Area. Liberty Bell, and the Spires are popular climbing areas. The current use at key attractions presently exceeds encounter standards used for wilderness areas on the Methow Valley Ranger District. The Rainy Lake Trail is an extremely popular paved universally accessible trail and would not be retained as such under wilderness designation. This trail also has interpretive signs, benches, and a fishing platform constructed of gabions and bounded by a railing. Due to the popularity of this trail, a picnic area was constructed at the trailhead.

The area receives low to moderate snowmobile use. As snowmobiles have become more powerful in recent years, incursions from the North Cascades highway corridor into the Lake Chelan-Sawtooth Wilderness are beginning to occur. Under wilderness designation, snowmobile use would continue on the highway but would be prohibited off-highway. This may reduce the likelihood of snowmobile incursions from the corridor into the adjacent existing wilderness. Outfitter-guide services include backpacking, horseback riding, mountain climbing, hunting, and backcountry and helicopter-assisted skiing. Wilderness designation would significantly reduce the permit area for the heli-skiing outfitter guide.

Twisp River Area: As most trails located in this area lead into the Lake Chelan-Sawtooth Wilderness and are currently used by hikers and stock users with only occasional mountain bike use, wilderness designation would not change recreational opportunities or use patterns. In the fall, the area surrounding Midnight Mountain is used by hunters. There are user-established campsites with caches that would not be allowed under a wilderness designation.

Sawtooth Backcountry Area: Approximately 22 miles of trail for motorized vehicles in the Foggy Dew-Crater Creek area has been constructed with state of Washington off-road vehicle funds. These trails provide the best high elevation off-road vehicle opportunities in an unroaded setting in eastern Washington. Designating the area as wilderness would eliminate this opportunity. The trail system is also popular with mountain bikers, hikers,

and stock users. Mountain bike use would also be eliminated while the hiker and stock use would likely increase with wilderness designation.

Both Portions Combined

Table 2--Miles of recreation trails (portions combined)

Motorized Trails	Non-motorized Trails	Snowmobile Trails
76	97	0

When examining the distribution of recreational opportunities across the region, even though the motorized and mountain bike use here is relatively low, the ability to provide a motorized trail system in a subalpine environment outweighs the potential benefit of adding wilderness recreation opportunities, which are already well supplied in this environment both locally and across the Cascade range. However, the loss of this area to motorized and mountain bike use would be far less significant than some of the other PWAs in the planning area (Manastash, Devils Gulch, Entiat-Chelan, and Lost Creek.) This system affects the eastern portion of the PWA.

In addition, retaining some large backcountry areas where outfitter guides have less restriction on group size serves the public need for places where large groups can go. The eastern portion of the Sawtooth PWA offers one of the higher quality opportunities in the planning area for this type of trip.

Adding the Twisp River portion of the area to the existing Lake Chelan-Sawtooth Wilderness would enhance management of recreation by preserving the continuity of the primitive recreation setting. Similarly, the portion of the area near Washington and Rainy Pass would complement overall management of the existing wilderness; however, certain trails such as the Blue Lake National Recreation Trail and the Rainy Lake National Recreation Trail would be difficult to manage as wilderness due to the high level of use. While the loss of helicopter skiing in this area is a key tradeoff, the recreating public as a whole could be better served with wilderness designation.

Wildlife

North Lake Chelan Portion

Due to the wide range of elevations within this portion of the PWA (from lake level at 1,100 feet to over 8,400 feet at the top of Mt. Bigelow), the types of habitat (and associated focal wildlife species) present varies widely as follows:

Boreal forest at the highest elevations (Canada lynx); forest mosaic resulting from past fires (northern goshawk); medium-large trees/all communities scattered throughout the area (Cassin's finch); medium-large trees/cool moist forest in valley bottoms and around headwater basins (pileated woodpeckers and American martens); medium-large trees/dry forest in the upper elevations along the lakeshore section and mid-elevation portions of Safety Harbor Creek (white-headed woodpeckers); open forest/all communities scattered throughout the lakeshore area and in areas affected by past fires (western bluebird, fringed myotis); open forest with ponderosa pine and big leaf maple in draws (western gray

squirrel); open forest post-fire in higher severity burned areas with more snags (Lewis' woodpecker, black-backed woodpecker); cliff habitats along Sawtooth Ridge and in Big Goat Mountain/Ferry Peak vicinity (peregrine falcons, and also mountain goats); Cirque basins/talus in headwater drainages and Sawtooth Ridge (wolverine); Woodland/grass/shrub habitats along lakeshore (golden eagle, possibly lark sparrow); grass/shrub and grassland habitats along the lakeshore (bighorn sheep and northern harrier); coniferous riparian areas at mid and upper elevations of Safety Harbor Creek (tailed frog); riparian large tree habitat along lakeshore and in valley bottoms (bald eagle); shrubby deciduous riparian habitat in draws and along streams throughout the area (red-naped sapsuckers); pond/small lake habitat in Prince Creek (spotted frog); marsh/wet meadow in headwater basins and around high elevation lakes (possible common snipe); and open water habitats along Lake Chelan (eared grebe).

The Ferry Peak lynx analysis unit is located in this portion of the PWA.

With the exception of the marshy and open water habitats, all of these habitats have been and will continue to be affected by frequent fire. Though some of the upper elevation area is suitable for wildland fire use, the lower elevations are not due to the flashy fuels, private land inclusions, and location of wildland urban interface at the downwind end of the area. Designation of the area as wilderness would limit other fuels management options, which would ultimately reduce the availability of wildlife species dependent on forested habitats (due to repeated high severity fire). It would somewhat increase the availability of wildlife species dependent on open grassland habitats that would likely result from a lack of active fuels management.

Lynx are known to be present on the north shore of Lake Chelan, though much of the late-successional habitat burned in the 2002 Rex Creek Fire. Some patches of habitat are still present, particularly at the upper elevations and valley bottoms. As the habitat regenerates, it is likely that high quality lynx foraging habitat will develop.

High elevation meadows and cliffs are present in the area and offer specialized habitats for species such as mountain goats and peregrine falcons. This portion of the PWA includes the Safety Harbor potential bald eagle recovery territory. No bald eagles are known to nest in the area but summer sightings do occasionally occur. Winter sightings are common all along the lakeshore within the PWA as bald eagles take advantage of both winter-kill on the roadless winter range, and waterfowl concentrations along the lakeshore.

Pacific fishers have been reported in this portion of the PWA on several occasions. This portion of the PWA may be part of a remnant stronghold for this species. Wolverines have been reported near high elevation cirque basins. Wolves have been reported both on the low elevation roadless winter range, and in the upper elevations during the fall. The area is within the Lower Chelan Grizzly Bear Management Unit. This portion of the PWA offers a unique link between high elevation summering habitats in both the PWA and adjacent wilderness, and low elevation unroaded winter range along Lake Chelan. Other than the trail bike and fall hunting use, this portion of the PWA offers mule deer and their predators (potentially the gray wolf and perhaps other rare forest carnivores) and relatively remote, contiguous summer and winter range.

As discussed in the capability section, this portion of the PWA also offers a unique opportunity to provide year long habitat for several species that require remote habitat

conditions. Gray wolves, wolverine, Pacific fisher, and possibly even grizzly bears may become more available if the area were designated as wilderness due to the consequent reduction in motorized use that would result. Lack of motorized activity in this portion of the PWA could improve habitat connectivity between summer and winter ranges. Mountain goat ranges could also possibly expand. Currently, mountain goats currently are rarely, if ever, seen in adjacent roaded areas, and are not commonly seen near motorized trails.

Ungulate populations in the area have been the subject of many interagency wildlife improvement projects over the past 25-30 years, including mountain goat population augmentation efforts, bighorn sheep reintroduction, and habitat improvement projects for both bighorn sheep and mule deer. Past hunting and shepherding activities have had large impacts on mountain goat, bighorn sheep, and carnivore populations. The lakeshore portion of the PWA offers a large expanse of unroaded critical winter range for bighorn sheep and mule deer. The majority of the north shore mule deer herd ends up in this portion of the PWA, particularly during harsh winters when as many as 1,100 deer have been sighted in the area between Deer Point and Gold Creek.

Sawtooth Portion

The area provides suitable habitat for the gray wolf, which is federally listed as endangered; the grizzly bear, lynx, and northern spotted owl, which are federally listed as threatened; and the wolverine, which is listed by the Forest Service as sensitive. Unique topographic sites that are suitable for wolverine natal dens are present in the Sawtooth area. Lynx, wolverine, and northern spotted owl are known to occur in the area. Gray wolf and grizzly bear are suspected to occur. The Sawtooth area is adjacent to the Lake Chelan-Sawtooth Wilderness and is important for wide-ranging species that require large areas with minimal human disturbances, such as grizzly bear, gray wolf, and wolverine. Together, the Sawtooth and Liberty Bell areas connect the Pasayten and Lake Chelan-Sawtooth Wildernesses and North Cascades National Park resulting in a large, continuous block of remote, undeveloped habitat for these species.

Mountain goats inhabit portions of the area. Steep, rocky outcrops and cliffs provide necessary security cover for them. Approximately 3,200 acres are in winter range for mule and white-tailed deer. Open, south-facing slopes with bitterbrush and other shrubs provide vital winter forage for deer. Mixed conifer old growth provides productive habitat for several species of wildlife. Snag habitat for cavity dwellers is abundant due to recent insect and disease outbreaks and large wildfires.

The PWAs provide varying levels of habitat for focal wildlife species. To help evaluate the habitat 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 Habitat	Habitat Priority Ranking (1=high, 2-mod, 3=low)	%Total Forest Habitat In Evaluation Area
Grizzly Bear	120,605 (potential gain of 57,517 ac of core area)	2	10 (Oka), 1 (Wen)
Canada Lynx	14,652	1	10 (Oka), 2 (Wen)
Wolverine	119,605 (potential gain of 57,517 ac of source habitat)	2	10 (Oka), 1 (Wen)
American Marten	3,968	3	12 (Oka), <1 (Wen)

A key issue relative to the sustainability of wildlife habitats is the identification of the amount of dry forest that is in a late-successional habitat area (LSHA). LSHAs that occur in dry forests can be at high risk of high severity wildfire, insects and disease that reduce the sustainability of the late-successional habitats. Active management such as prescribed fire and thinning may be needed to restore these habitats and enhance their sustainability.

Table 4--Acres of dry forest habitats that are present within the evaluation area and also within a late successional habitat area

Late Successional Habitat Area	Acres of Dry Forest
Sawtooth	Approx. 6,000

Water and Fish

Of the 62,483 acres in the proposed Sawtooth PWA, all but 27 acres occur in ten different subwatersheds. The 27 acres not described in detail here are slivers of land located on the edge of the Fisher and North Fork Bridge Creek subwatersheds. The ten different areas of sizable acreage analyzed in detail are located in the following subwatersheds (6th field Hydrologic Unit Code): Upper Bridge Creek, 6,516 acres; Prince Creek, 7,419 acres; Lone Fir Creek, 324 acres; Safety Harbor, 11,349 acres; Big Creek, 1,816 acres; Falls Creek, 4,777 acres; Mitchell Creek, 5,036 acres; Antilon Creek, 145 acres; Granite Creek, 22,783 acres, and Panther Creek, 2,290 acres. In these ten watersheds, the U.S. Forest Service manages the following percentages in each subwatershed: Upper Bridge Creek (22 percent); Prince Creek (100 percent); Lone Fir (84 percent); Safety Harbor (100 percent); Big Creek (86 percent); Falls Creek (78 percent); Mitchell Creek (90 percent); Antilon Creek (43 percent); Granite Creek (100 percent); and Panther Creek (22 percent). Much of the proposed Sawtooth PWA borders a long section of the Lake Chelan northwest shoreline; subwatersheds and their drainages deliver flows to Lake Chelan, which is barriered to migratory ocean fish. The Panther and Granite subwatersheds drain into the Methow subbasin.

When compared against unmanaged subwatersheds in good condition on the Okanogan and Wenatchee National Forest, vegetation condition is similar to expected condition and road management effects are low in the Upper Bridge Creek, Prince Creek, Safety Harbor

Creek, Granite Creek, and Panther Creek subwatersheds. Considering changes in vegetation and road density in combination, all of these subwatersheds were rated good. Stream reach data has not been collected in sufficient quantity for analysis; therefore watershed conditions have not been evaluated for these subwatersheds.

Stream reach conditions in the Mitchell Creek subwatershed that respond to natural and human caused disturbances were evaluated as fair because collected stream data values were lower than expected values measured in high functioning stream habitat elsewhere on the Okanogan and Wenatchee National Forest. Subwatershed vegetation conditions were somewhat altered from expected natural forest conditions; analyzed road effects were moderate. Vegetation condition and road effects considered cumulatively were rated fair. When vegetation condition and road effects were combined with measured stream responses to summarize overall subwatershed condition, this subwatershed was rated fair.

When compared against unmanaged subwatersheds in good condition on the Okanogan and Wenatchee National Forest, some vegetation condition has changed from expected condition and road management effects are moderate for Lone Fir Creek, Big Creek, Falls Creek, and Antilon Creek subwatersheds. Considering changes in vegetation and road density in combination, these subwatersheds were rated fair. Stream reach data has not been collected in sufficient quantity for analysis; therefore, watershed condition has not been evaluated for these subwatersheds.

There are no existing power withdrawals, proposed impoundments, or known Federal Energy Regulatory Commission permits or licenses for the Sawtooth PWA.

North Lake Chelan Portion

This potential wilderness area includes a long section of the Lake Chelan shoreline and contains several small Lake Chelan tributary streams. The most important of these include: the lower reaches of Grade, Coyote, and Falls Creeks, Mitchell, Gold, and Poison and all of Safety Harbor Creek. The short (30-400 meters) fish-accessible segments of these streams provide habitat for native cutthroat and introduced rainbow trout. Falls Creek hosts an important remnant population of pure westslope cutthroat trout between the Grade Creek Road and the barrier falls at its mouth (Archibald and Haskins 2002, Howell and Spruell 2003). The middle and upper reaches of Safety Harbor Creek host a robust population of cutthroat and rainbow trout. Recent studies (DE&S 2000) have shown Grade, Safety Harbor, and Prince Creeks to be subject to gradient and depth barriers to the upstream passage of fish in the spring of some years. This may account for the reduced trout populations noted in 1999-2000, e.g. the Grade Creek trout population was 63 percent of the 1982 trout population and The Safety Harbor Creek trout population was 32 percent of the 1982 population.

Safety Harbor Creek is used for spawning by Kokanee (land-locked sockeye salmon, also called "silvers") that mature in Lake Chelan. Kokanee spawning is limited to about one-quarter of a mile above its mouth. Since annual spawning surveys began in 1981, the number of spawning Kokanee in Safety Harbor Creek has ranged from a low of 2 in 2004 to a high of 3,132 in 1989 (Stone and Fielder 2004). During the same time period, the number of Kokanee spawners in Grade Creek has ranged from none in recent years to 184 in 1984.

The middle fork of Prince Creek hosts a population of trout which is fairly heavily fished. The east fork of Prince Creek has an insignificant amount of fish production.

Cub Lake and Boiling Lake on the Middle Fork of Prince Creek are well-known camping sites and recreational fisheries because of easy trail access. A cutthroat trout population is present in Cub Lake. Boiling Lake, at the headwaters of the middle fork of Prince Creek, supports an introduced trout population.

Sawtooth Portion

Habitat in the Methow subbasin was designated as critical habitat by the National Marine Fisheries Service in January 2006. Precipitation accumulating in the Panther and Granite subwatersheds provides cool clean water to the Methow subbasin. Federally listed bull trout, steelhead, and spring Chinook salmon presently occupy habitat in Early Winters Creek and the Twisp River. Steelhead and bull trout presently occupy habitat in Foggy Dew Creek. Steelhead and spring Chinook salmon presently occupy habitat in Gold Creek. Granite and Panther Creek subwatersheds provide a sizable volume of the Twisp River and Methow River flows during spring runoff. Most spring runoff originates from snowmelt, with peak flows typically occurring during May and early June. Summer thunderstorms may cause streams to rise for a few hours depending on the intensity of the storm. Water originating in the Granite and Panther subwatersheds is used for limited domestic consumption, irrigation, recreation, and stock water purposes.

The Sawtooth PWA is split between the Skagit and Methow River basins. The portion on the Methow River side is located in the upper Methow, Early Winters, and Twisp River key watersheds, as designated by the Northwest Forest Plan. Major drainages within and adjacent to the roadless area include Methow River, Twisp River, Early Winters Creek, Gold Creek, Libby Creek, and Wolf Creek on the east side, and Granite Creek on the Skagit River side. Federally threatened bull trout and summer steelhead and endangered spring Chinook salmon use the Methow River, Twisp River, Early Winters Creek, and Gold Creek for spawning and rearing. Bull trout and spring Chinook both spawn and rear in Wolf Creek and summer steelhead spawn and rear in the lower portion of Libby Creek. Bull trout are present in Granite Creek on the Skagit River side. The streams with summer steelhead and spring Chinook salmon are designated as critical habitat. Westslope cutthroat are present in many of the streams in this potential wilderness area. A significant portion of the Early Winters Creek, upper Methow River, and Gold Creek watersheds are in the Sawtooth PWA, providing high quality water essential for the viability to listed fish in these systems.

Water quality and habitat conditions in the PWA are excellent. Water from the roadless area is important for fish and wildlife habitat, and is used for limited domestic consumption, irrigation, recreation, and livestock purposes.

Range

North Lake Chelan Portion

Historic allotments (Buttermilk, Horsethief, and McFarland) are no longer active; however, a part of the historic Buttermilk allotment is active on the Methow Ranger District, which borders this portion of the PWA. Past grazing effects are still evident on the landscape, particularly at lower elevations along the lakeshore, and in high elevation meadows and ridges.

Sawtooth Portion

The area includes portions of the Rainy Creek Unit of Hunter-McFarland, Wolf, and Little Bridge Cattle Allotments and the Buttermilk Sheep Allotment. Approximately 50 percent of the Rainy Creek Unit, 35 percent of the Wolf Allotment, 30 percent of the Little Bridge Allotment, and 40 percent of the Buttermilk Allotment are classified as suitable for grazing.

The Rainy Creek Unit is managed with a varying season alternate year system of grazing. Wolf Creek is under a Coordinated Resource Plan with rest rotation grazing. Little Bridge is managed under a five pasture rest-rotation grazing system. On approximately 26,461 acres of suitable range there are about 1,500 animal unit months of forage removed.

Table 5--Percentage of grazing suitability areas and current allotments (both portions combined)

Percent Area Suitable for Cattle Grazing	Percent Area Currently in Cattle Allotments	Percent Area Suitable for Sheep Grazing	Percent Area Currently in Sheep Allotments
9	21	29	0

Vegetation and Ecology

North Lake Chelan and Sawtooth combined

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.

Generally, the priority for restoration treatments occurs within the wildland urban interface (WUI) or within the dry or mesic forest groups. Because WUI represents about one quarter of the potential wilderness area, the prohibition on restorative treatments is a concern. The concern is increased, however, by recognizing that dry forest occupies over one quarter of the WUI area.

Table 6--Stand data percentages (both portions combined)

Suitable for Timber Harvest	Forest Groups		WUI	
	0%	Parkland	23%	Total WUI
Cold Dry		8%	WUI in Dry and Mesic Forest	57%
Cold Moist		35%		
Mesic		0%		
Dry		27%		
Non-forest		7%		

Threatened, Sensitive and Endangered Plant Species

There are eight rare plant species known to occur in this area. These eight species are: tall false dandelion (*Agoseris elata*), boreal bog sedge (*Carex magellanica ssp. Irrigua*), pale blue forget-me-not (*Eritrichium nanum var. elongatum*), Kotzebue’s grass of Parnassus (*Parnassia kotzebuei*), weak saxifrage (*Saxifraga rivularis*), goblin’s gold (*Schistostega pennata*), Salish fleabane (*Erigeron salishii*), and western lady tresses (*Spiranthes porrifolia*).

Noxious Weeds

Current problems in the lower elevation winter range include infestations of cheatgrass, some knapweed and other weeds along some trails on the North Lake Chelan side.

North Lake Chelan Portion

Vegetation and Fire

Much of this area was burned in the 1970 Safety Harbor fire and again in the Rex Creek fire of 2001, and the Deer Point fire of 2002. The fires have left some areas relatively untouched creating a mosaic of forested conditions. Much of the Coyote Creek drainage remains unburned by the Deer Point or Rex Creek fires, though it was burned in the 1970 Safety Harbor Fire. Nearly one-third of the area is non-vegetated rock.

Mature timber areas are dominated by Douglas-fir with ponderosa pine and lodgepole pine being important associated species. Subalpine fir and larch occur at higher elevations, as well as some whitebark pine. Acres burned in 1970 have dense buckbrush and lodgepole pine on the north slopes (this will likely occur after the 2001 and 2002 fires). Forests on more harsh aspects that were originally stocked by ponderosa pine and Douglas-fir are not revegetating as quickly. Planting has not been done due to access problems. Historic timber inventory plots show some of this area to be very productive with a site index of 100. (Site index average for the forest is 70 for dry and 83 for wet.)

Annual fire occurrence is moderate and primarily caused by lightning. Fuel accumulations are moderate due to exposed rock at lower elevations and alpine meadows at higher elevations. Heavy fuel accumulations continue to build in more moist sites such as Safety Harbor Creek valley bottom, and some shaded north aspects. Areas burned in 1970 were burned in 2001 or 2002 and are regenerating very slowly.

As a result of past fires, very little suitable timber is presently available in this portion of the PWA. Active fuels management will be necessary to maintain future timber harvest options.

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.”

A large portion of this PWA (both the North Lake Chelan portion and the Sawtooth portion) is comprised of a parkland forest group and is known to support stands of whitebark pine. Due to a combination of anthropogenic causes (introduced white pine blister rust, global warming, and fire suppression leading to high severity wildfires) coupled with predation from native mountain pine beetles, whitebark pine stands are at risk across their range. 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.

Aerial insect and disease surveys were completed in 2008 in the vicinity of the Sawtooth PWA. Insect populations are widespread across this PWA, which spans four insect and disease analysis areas. The findings are summarized here.

The most extensive damaging agent reported was mountain pine beetle. On the Chelan side, nearly 5,000 acres were mapped, and an estimated 117,670 lodgepole pines killed. Nearly 10,000 whitebark pines and over 10,100 pole-sized ponderosa pines were also reported killed. An outbreak of mountain pine beetles has been ongoing in this area since 2003. To date an estimated 482,800 pines have been killed, which represents about 40 percent of the available host. This outbreak extends into the Prince Creek analysis area, and northeast over the Sawtooth Ridge onto the Methow Valley side (Sawtooth Backcountry) where about 13,000 acres were mapped and an estimated 130,000 lodgepole pines, 13,500 ponderosa pines and 4,300 whitebark pines killed. Smaller pockets of mountain pine beetle are also found in the Twisp River and Early Winters portions of the PWA.

About 5,000 acres of defoliation by western spruce budworm was mapped in the Sawtooth Backcountry. Large areas were mapped in upper Foggy Dew Creek, Hunter Creek, and the North Fork of Libby Creek. This is the third year that defoliation has been detected in this area, and the extent has increased substantially every year. Much heavier populations are established in the Twisp River (about 12,500 acres of defoliation were mapped, which is an increase over the 11,100 acres mapped in 2006). The Early Winters area had about 6,500 acres mapped, which is considerably less than the 9,400 acres mapped in 2006. Spruce budworm have also spread up into the North Cascades Scenic Highway corridor. Since light defoliation is difficult to detect from the area, usually only heavily defoliated areas are mapped. Ground surveys confirm that light to moderate defoliation extends well beyond the areas mapped by aerial survey. Western spruce budworm prefers to feed on grand fir and Douglas-fir, but will also feed on spruce, subalpine fir and western larch. Western spruce budworm populations have been increasing throughout the Forest since 1999. Given this overall trend, it is likely that the Hungry Hunter area will have heavier defoliation in 2008. Indirect control through silviculture is the most effective way of reducing budworm impacts over the long term. Stands with a large percentage of preferred host species will support an outbreak longer than stands with less host species. Multi-storied stands will also sustain outbreaks longer than single-storied stands, since they will provide dispersing larvae with readily available food and shelter from predators.

Several pockets of fir engraver activity were mapped in the Early Winters area, totaling about 2,500 acres. In the North Cascades Scenic Highway corridor, about 4,200 acres were mapped, and an estimated 7,700 true firs killed or top killed. Defoliation by western spruce budworm makes true firs more susceptible to fir engraver attack. An estimated 4,700 true firs were killed or top killed.

Other much small insect populations in the Sawtooth PWA include of western balsam bark beetle, Douglas-fir beetle, balsam woolly adelgid, and spruce beetle.

A portion of this PWA is comprised of a parkland forest group and is known to support stands of whitebark pine. Due to a combination of anthropogenic causes (introduced white pine blister rust, global warming, and fire suppression leading to high severity wildfires) coupled with predation from native mountain pine beetles, whitebark pine stands are at risk

across their range. 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. Vegetation cover manipulation and reforestation in wilderness require approval of the Chief of the Forest Service. The Regional Forester can approve pesticide use.

Sawtooth Portion

Vegetation and Fire

The majority of the lands suitable for timber harvest support mature mixed conifer and lodgepole pine stands.

The overall fire frequency and impact from past fires is quite low due to the sparse nature of the vegetation found above 5,000 feet in elevation. Vegetative communities below 5,000 feet have sustained the majority of the lightning and person-caused fires.

The communities most affected by past wildfires are lodgepole pine; those least affected are the true fir-old growth types found in the northern portion of the area.

Most wildfires that occur within the area have a positive effect on most of the resident game and non-game wildlife species found within the area by creating new browse and by reducing the flammable concentrations of natural fuels that tend to accumulate when all wildfires are extinguished. The survival of the mountain goat population depends on fire to create favorable browse conditions on established summer and winter range areas.

Insects and Disease

High levels of mortality in lodgepole pine and moderate levels of mortality in ponderosa pine have been observed during annual surveys. Mortality was caused by endemic populations of western pine beetle and mountain pine beetle. The remaining stands of lodgepole pine are susceptible to mountain pine beetle. During the late 1970s and early 80s extensive areas were infested by the western spruce budworm. Top killing and mortality occurred in many infested stands. Dwarf mistletoe is common in Douglas-fir stands. The nature and extent of root rot diseases is not known.

Minerals and Soils

North Lake Chelan Portion

Bureau of Land Management (BLM) LR2000 mining claim data (12/02/2004) indicate that there are no mining claims currently located within or adjacent to the potential wilderness area, though there have been active claims in the Miner's Basin area as recently as the late 1980s. This part of the PWA has had a long history of mineral exploration and activity (e.g. Kopper King claims).

This area is dominantly underlain by granitic rocks of Mesozoic age, but is also underlain in part by Upper Jurassic-Lower Cretaceous metamorphosed sedimentary and volcanic rocks. The area has not been studied in detail by the U.S. Geological Society or the U.S.

Bureau of Mines, although it does have reported occurrences of limestone and pumicite. Limekiln Point (in private lands) is located in the lakeshore portion of the potential wilderness area, and appears to have historically been a source of lime. Neither occurrence types have been sufficiently investigated to determine whether the deposits have commercial value; however, no interest has been expressed for either. None of the area is classified “prospectively valuable” for leasable minerals. There are no existing leases nor are there any pending lease applications or expressions of interest.

About 75 percent of the soils have formed from granitic rocks; however, most of them have some volcanic ash mixed into the surface layer. Most of the other soils have formed in deposits of volcanic ash and pumice (depths vary from 6 inches to as much as 30 feet). The granitic soils tend to be mostly on the very steep and rugged lands, whereas the ash and pumice soils will tend to occur on the flatter landscapes. The ash soils are easily displaced once the protective vegetation has been removed. Ash soils tend to be very dusty when dry. Granitic soils are usually good for all weather use because they rarely become slippery when wet or dusty when dry.

Sawtooth Portion

The geology of the Sawtooth portion of the PWA is complex and varied. The area straddles the Ross Lake fault zone, a complex series of significant northwest-southeast trending faults, which generally separates mixed metamorphic and igneous rocks on the southwest from sedimentary and volcanic rocks on the northeast. The area offers very diverse mineral potential and includes approximately 8,000 acres of lands with high, 35,000 acres of lands with moderate to high, and 44,000 acres of lands with low to moderate potential for the occurrence of locatable minerals. Probable exploration targets include high grade copper, lead, zinc, tungsten, and gold/silver veins; large, low grade base and precious metal deposits; possible volcanogenic massive sulfide deposits; and uranium occurrences (Grant, 1982). Approximately 70 percent of the high, 20 percent of the moderate to high, and 50 percent of the low to moderate mineral potential areas lie within the North Cascades Scenic Highway Corridor. At present (5/2008), there are three active lode claims in T. 30 N., R. 21 E. Sections 7, 8, and 18 along Sawtooth Ridge between Fox Peak and End Mountain. An active placer claim along the Twisp River is located along the boundary of the PWA in T. 33 N., R. 19 E. Section 11. Additionally, there are two active lode claims and one active placer claim near the townsite of Gilbert at the head of the Twisp River in T34N R18E Sections 11 and 12.

The area has no potential to a moderate potential for the occurrence of coal and oil and gas resources and a low to moderate potential for geothermal resources. Approximately 4,800 acres of land within the area have been leased or were the subject of lease applications for oil and gas. However, those cases have since been relinquished or terminated and lands within the PWA are not the subject of any current expressions of interest, lease applications, or leases for coal, oil and gas, or geothermal resources.

Cultural Resources

North Lake Chelan Portion

Prehistoric cultural resources have been found within the lower portions of the PWA, including some possible American Indian encampments sites. At least one site is a potentially significant cultural resource. The lower elevations were likely used as hunting areas during the fall and winter, and as root and bulb gathering grounds in the spring. Higher elevations were likely used for both hunting and berry gathering. There is some potential for undiscovered prehistoric resources within the area.

Centuries before the first Euro-American contact, ancestors of the Chelan Indians made their homes along the lower margins of Lake Chelan. From these villages, individual Indians and families regularly traveled uplake, camping along the shores and making hunting and food plant gathering expeditions into the appropriate backcountry areas. However, the likeliest campsites along the lakeshore have been inundated by the installation and operation of the Chelan Dam.

Historically, the North Lake Chelan portion was used primarily for sheep grazing, hunting, trapping, and small scale mining. There is one National Register-eligible site, the Crow Cabin, within the unit and at least two reported sheep camps; and the remnants of former mining operations in Miners and Horsethief Basins. The Coyote Creek incline, a unique historic feature associated with early logging and with later construction of the Lake Chelan Reclamation District irrigation flume, is located just west of Coyote Creek, in the southern portion of the unit. Lookout sites occur at Nelson Butte and Vie Mountain. Historic homes and homesites are present on private property along the lakeshore.

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.

Sawtooth Portion

The Cultural Resource Overview of the Twisp-Winthrop-Conconully Planning Unit (Bennett, 1979) identified evidence of several cabins, a lookout, and a fossil deposit in the area.

Land Uses and Special Uses

North Lake Chelan Portion

An isolated mountain cabin (Crow Cabin) is under a special use permit and a Forest Service radio repeater is located on Old Maid Mountain. Public occupancy of the cabin would not be allowed if the area is designated as wilderness. The Sawtooth backcountry is a very active outfitter guide destination, particularly for what might be oversized parties if the area were designated as wilderness. One water withdrawal and transmission line is in Camas Creek.

Sawtooth Portion

The Wolf Creek Reclamation District was granted an easement for an irrigation ditch in Wolf Creek in the N.E. 1/4 of the N.W. 1/4 of Section 2, T. 34 N., R. 20 E. Motorized equipment is used for maintenance and could not be accomplished using primitive tools. Several outfitter guides operate under special use permits for activities which include heli-skiing, backcountry skiing, climbing, backpacking, hiking, and horseback riding. Wilderness designation of the PWA would eliminate those activities which are not wilderness compatible. Currently there are no party size restrictions in the PWA. Wilderness designation would limit the party size for both the public and outfitters.

Private Lands

North Lake Chelan Portion

There are 508 acres of private lands adjacent to the North Lake Chelan area. These are all accessed by boat and many are subdivided into multiple ownerships. Acquisition possibilities are considered to be very difficult and costly. Increased development of these lands in the future is likely.

North Cascades National Park adjoins the area. Park Service trail crews access the Stephen Mather Wilderness and the Lake Chelan National Recreation Area via the trails in this PWA. Crews would no longer be able to transport chainsaws across national forest if the area is designated as wilderness.

Sawtooth Portion

There is no private land within the area.

NEED FOR WILDERNESS

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

The PWA is located immediately adjacent to the Lake Chelan-Sawtooth Wilderness (151,435 acres) and the 634,614 acre Stephen Mather Wilderness. The nearest population center of the Puget Sound area is approximately 100 miles or four hours away. Many other wildernesses exist that are closer to the Puget Sound area and provide easier access to high elevation mountains; such as William O. Douglas (168,232 acres), Alpine Lakes (362,789 acres), Henry M. Jackson (100,356 acres), and Glacier Peak Wildernesses (570,573 acres).

A separate analysis identified where the PWAs could contribute to the wilderness recreation setting either by preserving the primitive recreation setting adjacent to existing wilderness, or by contributing assessable and attractive day use destinations (which are under heavy pressure in existing wilderness). The analysis also examined which PWAs would contribute either a unique landform to the wilderness system, or where trails access vegetation types that are underrepresented in wilderness at a regional scale.

In ranking this PWA for its potential to provide a high quality wilderness recreation setting it ranked as high. The area has many attractions including lakes, high meadows, peaks, and overall very high scenic values. The Sawtooth PWA has an extensive interconnected trail system that enters the Lake Chelan-Sawtooth Wilderness. The PWA also has extensive areas of vegetation cover types that are underrepresented in designated wilderness at a regional scale.

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

Overall, there is a continuous, slight increase in the number of people visiting nearby wilderness areas. The user groups showing the most increase are day-hikers and visitors to some off-trail destinations throughout the wildernesses, and horse users in the Lake Chelan-Sawtooth Wilderness. There is also a trend to shorter multiple-day trips.

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

North Lake Chelan Portion

The North Lake Chelan area does provide a unique high lake motorized outdoor experience, a boat-in camping experience, and provides a high lake non-wilderness destination for large outfitter guide parties. The area is also popular with backpackers who enjoy loop hike opportunities.

Motorized trail users and backpackers also use the Entiat-Chelan Potential Wilderness Area and other areas further south on the forest. Boat-in camping is also available in the Entiat-Chelan PWA on the south shore of Lake Chelan.

Sawtooth Portion

There are approximately 900,000 acres of National Forest System land outside of wilderness on the Methow Valley Ranger District. The opportunities for unconfined outdoor recreation are abundant and varied. In the summer non-wilderness portions of the district draw hikers, stock users, mountain bikers and more limited motorcycle use. Certain portions also offer regionally significant rock climbing and mountaineering. In the winter the area features outstanding cross-country, backcountry skiing, and snowmobiling. The area is within four to six hours driving time of the greater Puget Sound area and two hours from Wenatchee.

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 wolverine, grizzly bear, fisher, lynx, and wolf all benefit from less developed or primitive surroundings. Currently, there are 722,532 acres of existing wilderness (Lake

Chelan-Sawtooth Wilderness: 145,667 acres; Glacier Peak Wilderness; 576,865 acres) adjacent to these areas that actually border this PWA. Actual sightings of these species in the existing wilderness are rare, though the fisher has been reported, and wolf sightings are increasing in frequency in the general area. Other factors, other than some level of human recreational activity, are potentially limiting these species from fully utilizing these ecosystems.

Other species that benefit from the primitive surroundings include the western gray squirrel, goshawk, pileated woodpecker, northern spotted owl, mountain goat, tailed frog, and spotted frog.

For American marten (*Martes americana*), grizzly bear (*Ursus arctos*), wolverine (*Gulo gulo*), and Canada lynx (*Lynx canadensis*) the wildlife sustainability index is 136.1 (a high relative ranking excluding dry forest) and the habitat connectivity index is 145 (also high relative ranking).

Fish

Several native species in the interior Columbia River Basin have demonstrated an inability to survive in less than primitive surroundings, especially the bull trout. In addition to habitat changes on National Forest System lands, other factors off forest such as hydropower generation, hatchery programs, harvest, and changing ocean conditions further challenge the persistence of some far-ranging native species. Broad-scale assessments have demonstrated a positive correlation between unroaded areas and persisting native fish stocks. Often, assessments like these don't differentiate between wilderness and roadless areas; rather they combine the two into an "unroaded" category. These assessments show current strongholds (most secure and robust populations) are dependant on wilderness and roadless areas. Some of the more resilient native fish populations in the Interior Columbia Basin are located in unroaded areas on National Forest System lands.

For the Okanogan-Wenatchee National Forest PWAs were assigned an aquatic ranking based on federally listed and sensitive fish species that are sensitive to human disturbances. A high ranking was assigned when listed fish species occur in the PWA or when ecological process including high quality water help sustain listed fish species downstream of the PWA. All other PWAs are ranked low. This PWA is assigned a high ranking based on these factors.

Rare 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 moderate for this PWA. The second factor, which ranked as high 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 high priority for preserving rare plant refugia with a wilderness designation.

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

Both portions of the Sawtooth PWA are represented by the East Cascades Ecoregion, using Bailey's Ecoregion Classification System. This ecoregion is well represented in existing designated wilderness.

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 24 percent of the vegetative cover of this PWA (approximately 43,130 acres). These types include forb lands, non-alpine meadows, alpine meadows, western red cedar, and ponderosa pine. Taken as a whole, the contribution of underrepresented vegetation types ranks 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. The Sawtooth PWA, in fact, contributes the most acres of under-represented vegetation cover of any PWA in the eastern Washington planning area.

Some under-represented cover types fill microhabitats such as riparian areas or perched water tables. Such finer scale cover types well represented in this PWA include cottonwood and aspen.

Each of the cover types enumerated above would make a significant contribution within the eastern Washington planning area except for western red cedar.