

Appendix F: Evaluation of Wilderness Inventory Areas

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Introduction

This appendix presents the draft results of the wilderness evaluation process for 25 wilderness inventory areas on the Flathead National Forest (NF) (see figure F-1). Each area in the wilderness inventory was evaluated using criteria from the proposed Forest Service Handbook (FSH) 1909.12, chapter 70. The Flathead NF plan revision interdisciplinary team developed measures for these criteria that were developed to address the specific questions posed by the criteria and provide a consistent way to evaluate each area in the wilderness inventory in a comparable manner. This is a draft evaluation and will not be finalized until the Record of Decision is signed.

The forest plan revision team developed a wilderness evaluation worksheet for each area that includes a map of the area, the evaluation criteria, and associated questions and measures to address the criteria.

Public Participation

The Flathead NF engaged the public to acquire feedback and input on the inventory, evaluation, and analysis of areas for wilderness recommendation. The two formats for public input included: 1) through individual worksheets provided for each inventory area, or 2) by commenting on areas with the interactive Talking Points Collaborative Map (TPCM) tool.

The TPCM of the wilderness inventory and the wilderness evaluation worksheets were posted on the Flathead NF website on August 9, 2014, originally for a 3-week comment period, which was later extended to a 30-day comment period. During this period, the public was asked to provide feedback on the measures proposed for the wilderness evaluation. In addition, the Flathead NF requested input about the areas included in the inventory. While some measures are dependent on a geospatial analysis of our data, such as acres of maternal denning areas or percent of areas without invasive weeds, other measures are dependent on field knowledge such as the sights and sounds of the area or knowledge of outstanding geological formations in an area.

The rest of this appendix presents the wilderness evaluations for the 25 wilderness inventory areas considered, in the following order:

- Beaver Lake
- Bob North
- Canyon
- Coal
- Cold Creek
- Crane Porcupine
- Demers
- Elk Creek
- Essex
- Fatty Creek
- Glacier Creek
- Hungry Horse Reservoir East
- Hungry Horse Reservoir West
- Jim Creek
- Le Beau
- Lindbergh Lake
- Meadow Lake
- North Fork Cold Creek
- Piper Creek
- Puzzle
- Sky West
- Swan Face South
- Tuchuck
- Whale
- Woodward Creek

The following 11 table notes/footnotes apply, and are repeated, throughout this appendix.

1. Whitebark pine plus trees are defined as genetically superior trees which show natural resistance to blister rust. As part of the whitebark pine restoration program, these trees provide seed for natural regeneration and for growing seedlings in nursery for planting. Protection includes reducing adjacent fuel loads, treatment to protect from beetle attack, and thinning young (sapling) stands to increase vigor and potential to survive mortality.
2. Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest) means: Past timber harvests of all types, both regeneration harvests (clearcut, seedtree and shelterwood cuts) and intermediate cuts (e.g., commercial thins, salvage cuts). Information on timber harvests is from the Forest Service Activity Tracking System database.
3. Maintenance level 1 Roads: Roads that have been placed in storage between intermittent uses.
4. Solitude or a primitive and unconfined type of recreation. The area does not have to possess outstanding opportunities for both elements, nor does it need to have outstanding opportunities on every acre. Consider impacts that are pervasive and that influence a visitor's opportunity for solitude.
5. Rare (i.e., vegetation types) can be determined locally, regionally, nationally, or within the system of protected designations.
6. Minimally represented vegetation types is an analysis of species that are minimally represented or rare in existing Region 1 Congressionally designated wilderness. Rare plants are those listed in the *Montana Natural Heritage Program*.
7. Species richness % of total acreage was determined via state wildlife agencies of the United States. West-wide crucial habitat data Set. Western Governors' Crucial Habitat Assessment Tool: Mapping Fish and Wildlife across the West. Western Governors' Association. Published 8/7/14. Accessed 8/7/14. <http://www.westgovchat.org>
8. Acres of key conservation areas for wolverine were defined by Weaver, John L. 2014. Conservation Legacy on a Flagship Forest: Wildlife and Wildlands on the Flathead NF, Montana. Working Paper Number 43, May 2014.
9. Acres of key conservation areas for mountain goat were determined by Weaver, John L. 2014. Conservation Legacy on a Flagship Forest: Wildlife and Wildlands on the Flathead NF, Montana. Working Paper Number 43, May 2014.
10. Narrative of coarse scale key connectivity for multiple species. A variety of sources were used, including Squires et al. 2013, McKelvey et al. 2011, Waller and Servheen 2005, Weaver 2014, Ament et al. 2014, National Fish and Wildlife Foundation (in press).
11. Standard/terra trail - is defined as the predominant foundation of the trail is ground (as opposed to snow or water), which is designed and managed to accommodate ground-based trail use. INFRA Trails User Guide dated October 27, 2008, p.152.

In this appendix, for each area evaluated, there is a map of the area evaluated and the area evaluation worksheet. Figure F-1 shows all 25 areas that were evaluated.

The next step in the wilderness recommendation process is the analysis. In this step, the responsible official will determine which areas to carry forward as recommended wilderness for analysis in the environmental impact statement (EIS) for the forest plan revision. In the final step, the responsible official will review the analysis disclosed in the EIS along with all tribal, governmental, and public input and decide which areas, if any, to recommend for inclusion in the National Wilderness Preservation System.

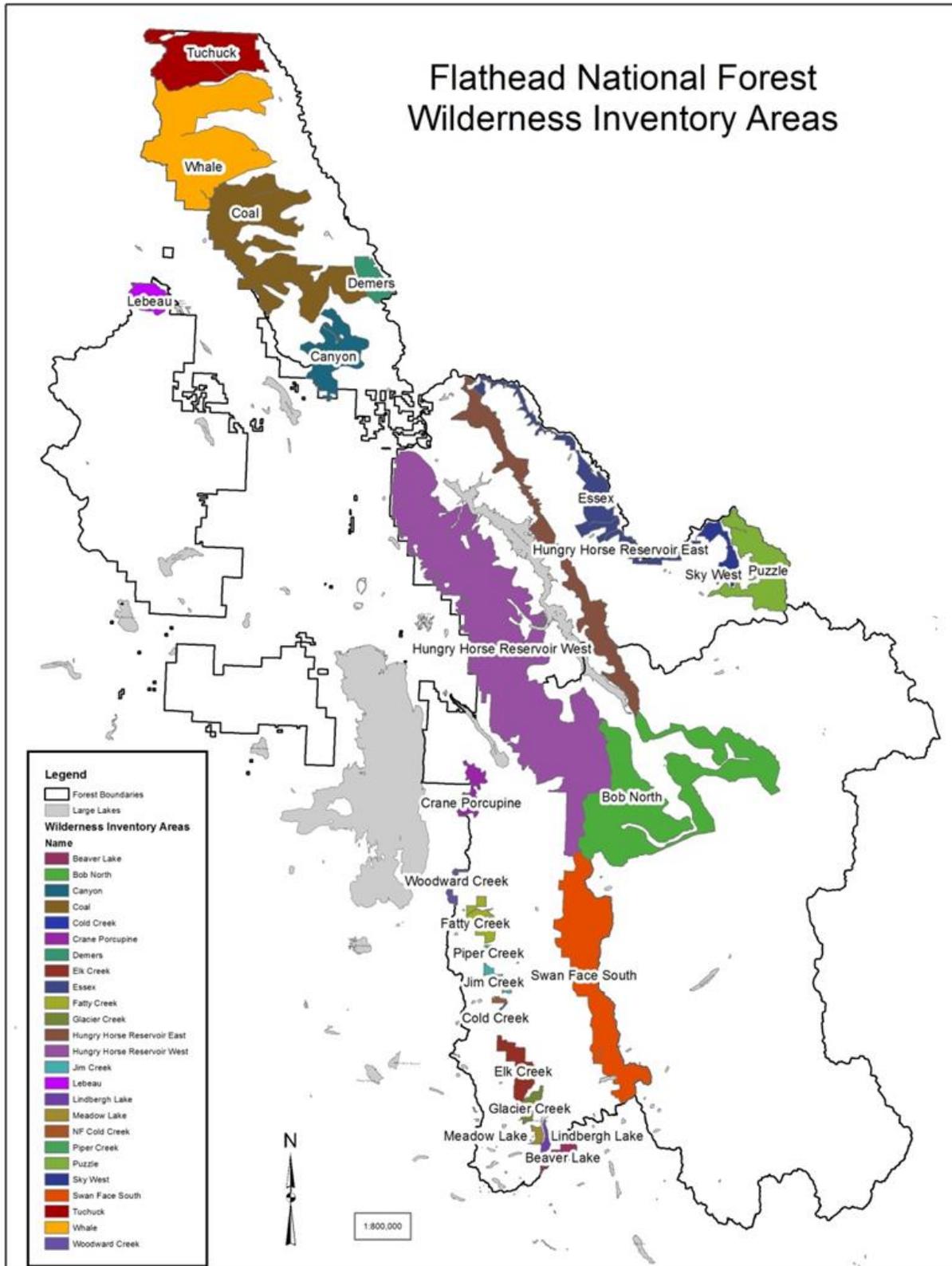


Figure F-1. Wilderness inventory areas on the Flathead National Forest

Beaver Lake Area

A total of 3,542 acres was included in the Beaver Lake wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-2 shows the Beaver Lake wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 98% lodgepole pine, subalpine fir; common types on the Flathead NF. Whitebark pine is present in the area (including whitebark pine plus trees¹) which is a candidate for threatened/endangered species listing by U.S. Fish and Wildlife Service.

Potential vegetation types: ~99% cool/cold types, supporting typical mixed conifer forests. There may be potential for mountain hemlock, a more rare type on Flathead NF.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-1. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	86%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	98%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish, plants and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads. There is a low probability of weeds within the remaining area.

Past harvest and road building is dispersed through area (490 acres). Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this

inventory area is primarily affected by natural ecological processes, including fire (~80% burned in 1919). There are long term human-caused departures from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g. dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

The primary watershed in this area is Beaver Creek. There are no bull trout in Beaver Creek; however westslope cutthroat trout are present in limited numbers. Invasive brook trout and central mud minnows are present.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-2. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest occurred during the 1950s to 1973 on gentle slopes. The harvested units are fully reforested and not visible; however, the major road that bisects the area may be evident in the foreground view, while the portions on steeper slopes may be evident when viewing from the background.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None

Improvement Type	Extent of departures
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Jocko Trail Native American Indian travel route with visible remains in and near this inventory area.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

TableF-3. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	3,453 acres (97%)
Area and % total available for winter non-motorized opportunity	200 acres (6%)

Portions of this area have outstanding opportunities for solitude due to the limited amount of open roads and trails in the inventory area. The topography consists of steep creek drainages with some rolling slopes on the southern portion of the area. There is an abundance of vegetation providing screening to sight and sound.

This area is surrounded by national forest system lands with the southeastern boundary adjacent to the Lolo NF. Adjacent to the inventory area, on the south-facing slope of the Swan Clearwater Divide is an area (West Fork Clearwater wilderness addition) being considered for wilderness designation in the Forest Jobs and Recreation Act. On the western boundary is the Mission Mountains Wilderness.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-4. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	2,719 acres (77%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	210 acres (6%)

Describe the types of primitive recreation activities in the area.

There are many opportunity for primitive and unconfined recreation in this inventory area. This area offers primitive recreation opportunities as there is no road or trail access; access is by cross-country in a remote, steep drainage. Backpacking, fishing, hunting, hiking, and viewing wildlife are some of the primitive recreation activities in this area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented/rare vegetation types⁵?

Table F-5. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	2 miles (20%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	Whitebark pine is present and estimated at 300 acres. Potentially, the area could support more whitebark pine. Genetically superior whitebark pine trees are identified and provide seed for whitebark pine tree improvement and restoration programs.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	No acres of level 3/4
Acres of key conservation areas for wolverine ⁸	582 acres (16%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Very high lynx use, high-very high composite score for grizzly bear.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-6. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	2,086 acres (59%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72 and 75.	105 acres (3%)

Describe if there are any unique geologic features in the area.

Sunset Peak is 7,146 feet which provides viewing opportunities into the Swan Valley and Clearwater drainage of the Lolo NF. There are no known caves present in this inventory area.

Question 3c

Are there historic or cultural resources of historic value in the area?

The Jocko Trail is a Native American Indian travel route with visible remains in and near this inventory area. There was a Forest Service Lookout (Sunset Point) on the divide between the Lolo and Flathead NF that was removed in 1955.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports westslope cutthroat trout that are hybridized with rainbow trout. The area has been assessed for watershed conditions under the watershed condition framework. Beaver Creek is a class 2 watershed due to some impairment which exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-7. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0 acres

Question 3f

Are there any scientific or education features in the area?

There are no known education features in the inventory area. Whitebark pine plus trees¹ have been identified in this inventory area, which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-8. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. Southern and southeastern boundary borders Lolo National Forest. A portion of the western boundary is adjacent to the Mission Mountains Wilderness. The northern boundary follows section lines.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	Lolo management areas MA 11C (roadless). Adjacent to land that was previously Plum Creek lands which have been harvested and contain roads.
Describe the current management of the area.	11 miles of closed roads; 0 miles terra ¹¹ trails; 10 miles motorized over-snow routes; 3,268 acres (92%) allow motorized over-snow. 15% MA 1 (non-forest lands); 5% MA 2 (unroaded lands for dispersed recreation); 79% MA 11C (grizzly bear habitat); 1% MA 12 (riparian area).

Measures	Outcome
Acres and % total of wildland urban interface in the area.	0 acres
Type and extent of management restrictions within the area.	No bull trout critical habitat. 3,542 acres (100%) of critical lynx habitat. 841 acres (24%) of grizzly bear security core. 0% of inventoried roadless areas

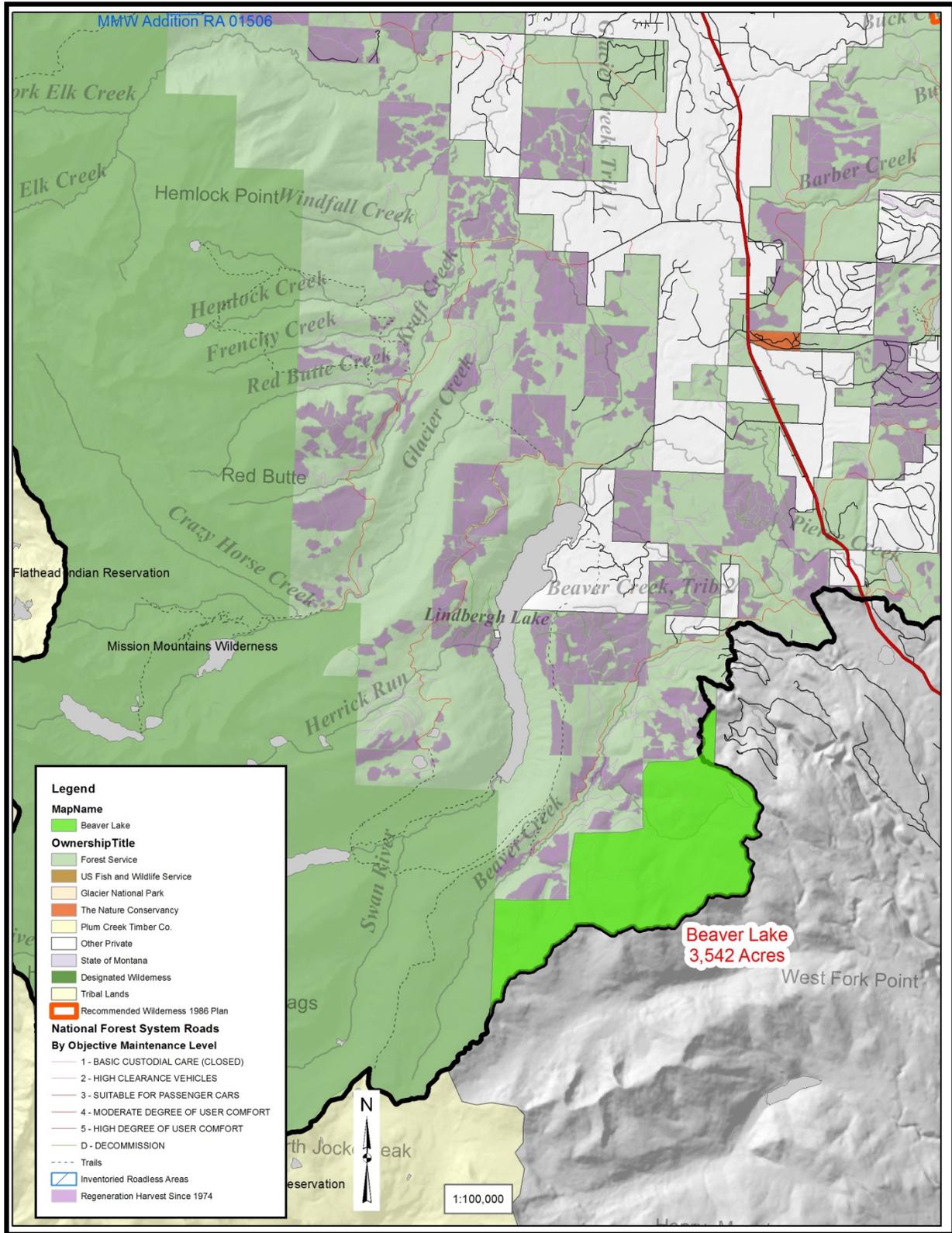


Figure F-2. Beaver Lake wilderness inventory area

Bob North Area

A total of 88,041 acres was included in the Bob North wilderness inventory area. This area is located on the Hungry Horse–Glacier View and Spotted Bear Ranger Districts. Figure F-3 shows the Bob North wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 86% subalpine fir, Douglas-fir, lodgepole pine, larch – common types on the Flathead NF. There is about 13% high elevation sparse vegetation and avalanche chutes in this inventory area.

Potential vegetation types are cool/cold types dominant, supporting typical mixed conifer types, including whitebark pine. There is a small amount of warm dry types, supporting some ponderosa pine which is a less common type on the Forest.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-9. Measures for 1b.

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	96%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish, plant and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

No non-native or parasitic wildlife species are present. There is low level of past harvest and associated roads (3,329 acres), mostly in stream bottoms bisecting west side of area (Bunker, Jungle, Addition, Tin/Soldier creeks). Forest composition, structure, patterns in harvest areas have been influenced by past

human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~40% burned 1889-1929; 8% recent fire 2000, 2007). There are long term human-caused departures from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g. dozer skid and pile), but those impact are typically scattered/disconnected spots and actively recovering.

Weeds are limited mostly to roads, except for large weed infestations in heavy use areas along the South Fork River corridor. There is low probability of weed within most of inventory area, except in areas adjacent to roads and weed concentrations.

There are numerous watersheds in this area; the primary ones are Bunker Creek, Spotted Bear River, and Addition Creek. There are no aquatic invasive species in this area. There are strong populations of bull trout in Bunker Creek and Spotted Bear River, and many of the smaller watersheds also support westslope cutthroat trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-10: Measures for 1c

Improvement Type	Extent of departures
Airstrips	Meadow Creek Airstrip
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	See response to 1b
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Most harvest occurred during the 1950-60s with some harvest in the mid-1970s in Bunker Creek area. All harvested areas fully reforested, mostly not visibly evident. There are some existing historic road templates but generally not evident, except major roads (e.g. Bunker Creek, the upper end Bent Creek) or where slopes are steeper and jammer roads exist (some units in Addition/Little, Jungle/Larch Creeks).
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	Electronic site on Stony Hill Two repeaters on Spotted Bear Mountain Snow course site adjacent to Spotted Bear Mountain trail
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	Jack-leg fence in the Bunker Park area
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	Meadow Creek Campground Cedar Flats River Access

Improvement Type	Extent of departures
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	There is a hydro dam in Bunker Creek just downstream from this area that supplies water to Spotted Bear Ranger Station.
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Spotted Bear Lookout

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-11. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	88,030 acres (100%)
Area and % total available for winter non-motorized opportunity	68,217 acres (77%)

Portions of this area provide outstanding opportunities for solitude especially as you move away from the Hungry Horse Reservoir. With much of the area moderately steep to very steep, and ranging from heavily timbered to subalpine land forms, sights and sounds are buffered and allow for the feeling of solitude. Eighty-one percent of the area is within inventoried roadless areas (IRAs) (Bear-Marshall-Scapegoat-Swan IRA #1485). To get to the wilderness areas, one usually travels several miles through this wilderness inventory area; some people view some of this area as part of their wilderness experience.

Solitude may be impacted along major access trails but this is not pervasive – as you move away from the activity, opportunities for solitude can be found. There is 1 mile of over-snow route and about 23% of the area allows over-snow vehicle use. The Meadow Creek Airstrip is within this inventory area and was allowed within the wild and scenic river corridor of the Flathead River. This may impact solitude but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-12. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	78,159 acres (89%)

Measures	Outcome
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	67,465 acres (77%)

Describe the types of primitive recreation activities in the area.

Portions of this wilderness inventory area have special importance to many people because it is adjacent to the Great Bear and Bob Marshall Wilderness areas. Primitive recreation activities in this area include horseback riding, hiking, backpacking, fishing, hunting, wildlife viewing and cross country skiing. There are 94 miles of non-motorized terra¹¹ trails in this area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-13. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	38 miles (14%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is about 240 acres mapped whitebark pine dominance type. Many thousands of acres of potential high elevation (>6,000 feet) sites suitable for whitebark pine. Mapped 15,451 acres whitebark pine potential vegetation type. Genetically superior whitebark pine trees are identified in Bill Creek and provide seed for whitebark pine tree improvement and restoration programs.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ¹⁶	The presence of a rare plant: <i>Botrychium sp.</i> (Moonworts)
Species richness % of total acreage ⁷	37,403 acres (43%) of level 3/4.
Acres of key conservation areas for wolverine ⁸	35,596 acres (40%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	8,975 acres (10%) of habitat.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Portions of this inventory area are key for wolverine, and grizzly bear; moderate for lynx. There is very high radioed lynx use in this area. East of South Fork River has lower values for all species but lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-14. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	51,877 acres (59%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	23,854 acres (27%)

Extensive limestone caves are found in the eastern portion of this area, in the vicinity of Sergeant Mountain and Spotted Bear Mountain. The Spotted Bear country is dominated by an upwarp of the Earth's crust known as the White River Syncline. Erosion ultimately wore away the center of the syncline, leaving the tilted cliffs that face each other on either side of the South Fork of the Flathead River. From the mountain range from Sergeant Mountain, to the east and the tilted walls of Picture Ridge defines its western boundary. The bending of the rock strata is particularly evident of the northern end of the syncline and is evident in the twisted bands of rock that make up the backbone of Sergeant Mountain. Elevation varies from 3,500 to 7,900 feet.

Question 3c

Are there historic or cultural resources of historic value in the area?

Spotted Bear Lookout

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-15. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

Exploration of the cave systems in the Spotted Bear River portion of this area has been ongoing for many years, with continued opportunities to provide both scientific and educational value. Grizzly bears use this area for summer habitat and winter denning sites. There is also opportunity to study and learn from the fire history and frequency. Whitebark pine and larch stands have and will continue to be studied in this area. Whitebark pine plus trees¹ have been identified, which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-16. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shaped. The eastern node is along the Spotted Bear River. The Bunker Creek Road is buffered out 33 feet from either side creating a cherry stem.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	The wild and scenic river designation of the Flathead River allows for the use of the Meadow Creek airstrip and adjacent campground. This area is within the inventory area.
Describe the management of adjacent lands.	MA 2b (unroaded), MA 11 (grizzly bear management), MA 13 (timberlands in mule deer and elk winter habitat), MA 21 (wilderness)
Describe the current management of the area.	13 miles of closed roads; 27 miles of decommissioned roads; 94 miles of terra ¹¹ trails (0 miles motorized; 7 miles allow mountain bike); 1 mile of motorized over-snow routes; 19,824 acres (23%) allow motorized over-snow. 25% MA 2 (unroaded lands for dispersed recreation); 1% MA 7 (timberlands of high scenic values); 47% MA 11A (grizzly bear habitat); 4% MA12/17 (riparian habitat); 6% MA 13 (mule and elk winter habitat); 15% MA 15/16(timber management); 2% MA 18 (wild and scenic river).
Acres and % total of wildland urban interface in the area.	1,319 acres (<1%)
Type and extent of management restrictions within the area.	21 miles of bull trout critical habitat (3 different streams). 82,092 acres (93%) of lynx critical habitat 71,679 acres (81%) are in the Bear-Marshall-Scapegoat-Swan inventoried roadless area #1485

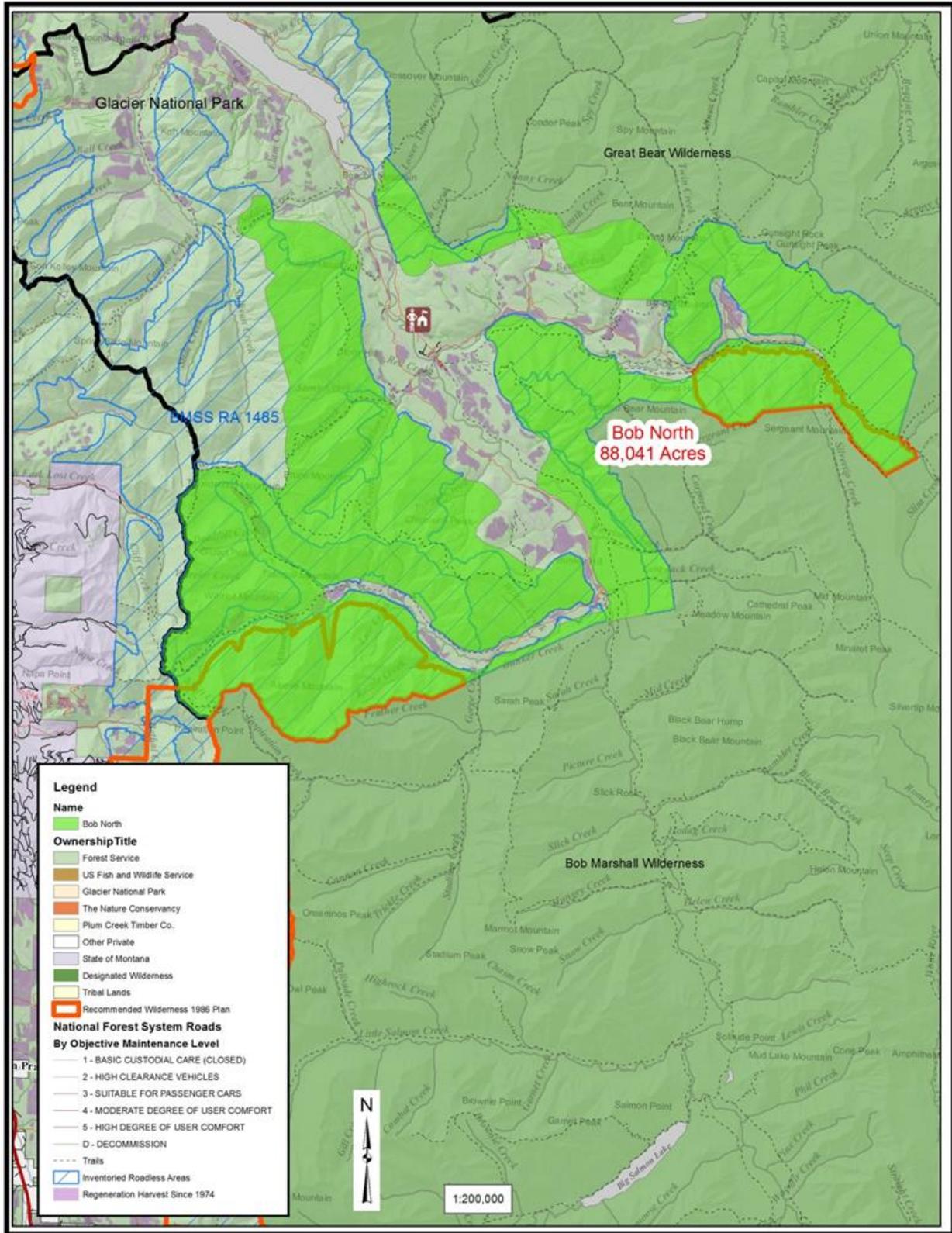


Figure F-3. Bob North wilderness inventory area

Canyon Area

A total of 18,812 acres was included in the Canyon wilderness inventory area. This area is located on the Hungry Horse–Glacier View Ranger District. Figure F-4 shows the Canyon wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 90% subalpine fir (Douglas-fir, larch) common types on the Flathead NF. There is about 10% permanent non-forest types, mainly avalanche chutes, in this inventory area.

Potential vegetation types: cool/cold moist type most common, supporting typical mixed conifer forests. There are patches of warm moist grand fir/cedar types in lower Haskill Basin with potential to support western red cedar, grand fir, western hemlock, and western white pine; rarer types on the Flathead NF. In some higher elevation (>6,000 feet) there is whitebark pine type, and possibly alpine larch.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-17. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	87%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	99%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Invasive weeds are limited to existing and decommissioned roads; there is a low probability of invasive weeds within remaining area.

Watersheds in this area include Haskill Creek, Canyon Creek and Big Creek. Haskill Creek is fishless at this elevation but supports pure westslope cutthroat trout in lower reaches off forest. Canyon Creek supports pure populations of westslope cutthroat trout but no bull trout due to a barrier falls near it's confluence with the North Fork. Big Creek supports both cutthroat and bull trout but an increasing number of cutthroat/rainbow hybrids are found. No other aquatic invasive species are found within this area.

Numerous past harvest units (2,426 acres) and associated roads are within and bisect the area. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~11% of area burned 1919; 9% in 2001). There is some long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads (including jammer roads). Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but typically those impacts are scattered/disconnected spots and actively recovering.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-18. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable. These are the non-timber harvesting treatments.	Discussed in measures for 1b, if applicable.
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Mostly (70%) harvested in 1950s and 1960s on gentle to steep slopes. These harvest units are fully revegetated to trees, shrubs and not visible, with exception of some of associated roads, skid trails/jammer roads. These roads are likely visible in foreground view, but not in mid- or background view.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	Micho Mine at the southwest boundary
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None

Improvement Type	Extent of departures
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Remains of Standard Peak Lookout.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-19. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	18,799 acres (100%)
Area and % total available for winter non-motorized opportunity	16,483 acres (88%)

Portions of this area provide for outstanding opportunity for solitude. Forty-two percent of the inventory area is located in an IRA (Standard Peak IRA #1129). The majority of the area is timbered and valley bottoms. There is adequate screening for solitude in the majority of the area, with sights and sounds of human activities more apparent in the southern portion of the area which is adjacent to private land comprised mostly of Stoltze timber lands, and a small portion of Whitefish Mountain Resort. A portion of the area in north and east was burned in the Moose Fire in 2001.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-20. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	17,942 acres (95%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	12,038 acres (64%)

Describe the types of primitive recreation activities in the area.

The area contains the majority of the Smokey Range National Recreation Trail. This trail offers hiking and horseback riding. The western portion of the trail has been lost in portions due to fire in the past. There are numerous opportunities for on-trail and off-trail hiking. Other activities include hunting, fishing, forest product gathering. In the winter, the area is used for cross country and backcountry skiing. The backcountry skiing is popular in the southern portion adjacent to Whitefish Mountain Resort because of the easy access from the ski area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-21. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	8 miles (21%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There are some whitebark pine present in the area, estimated at 25 acres of whitebark pine dominance type. There are thousands of acres that are potentially capable of supporting whitebark pine. There is about 6,300 acres of mapped whitebark pine potential vegetation type.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None
Minimally represented or rare vegetation types in region ⁶	Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	5,427 acres (29%) has level 3/4
Acres of key conservation areas for wolverine ⁸	8,648 acres (46%) very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for wolverines, key for grizzly bear, key for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-22. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high scenic public value.	12,860 acres (68%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	6,775 acres (36%)

Describe if there are any unique geologic and cave features in the area.

None

Question 3c

Are there historic or cultural resources of historic value in the area?

The remains of Standard Peak Lookout are in this area.

Question 3d

Are there high quality water resources or important watershed features in the area?

Stoltze diverts water from upper South Canyon into Trumball Creek on dry years. This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed; class 1 watersheds exhibit high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. This area includes Haskill Basin watershed which is the drinking water source for the City of Whitefish,

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-23. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0 acres

Question 3f

Are there any scientific or education features in the area?

No known unique scientific or educational features.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-24. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape with boundary following some contours, roads and buffering from harvest areas. From the northwest boundary into the interior of the polygon there is a winter motorized route #9316E that is buffered 33 feet on either side to a substantially noticeable harvest area.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	No
Describe the management of adjacent lands.	MA 3 (non-forested lands), MA 15 (timberlands), and MA 20 (Big Mountain Winter Sports Area).

Measures	Outcome
Describe the current management of the area.	<p>13 miles closed roads; 8 miles decommissioned roads; 10 miles terra trails¹¹ (0 miles motorized); 14 miles motorized over-snow routes; 2,329 acres (12%) allows motorized over-snow;</p> <p>59% MA 2 (unroaded areas); 12% MA 3 (non-forested areas); 2% MA 7 (timberlands in areas of high scenic value); 4% MA 12/17 (riparian areas); 2% MA 13 (timberlands in mule deer and elk winter habitat); 19% MA 15 (timberlands); 3% MA 20 (Big Mountain Winter Sports Area)</p>
Acres and % total of wildland urban interface in the area.	1,552 acres (8%)
Type and extent of management restrictions within the area.	<p>2 miles of bull trout critical habitat (1 stream);</p> <p>18,702 acres (99%) of lynx critical habitat;</p> <p>16,992 acres (90%) of grizzly bear security core;</p> <p>7,893 acres (42%) of Standard Peak inventoried roadless area #1129.</p>

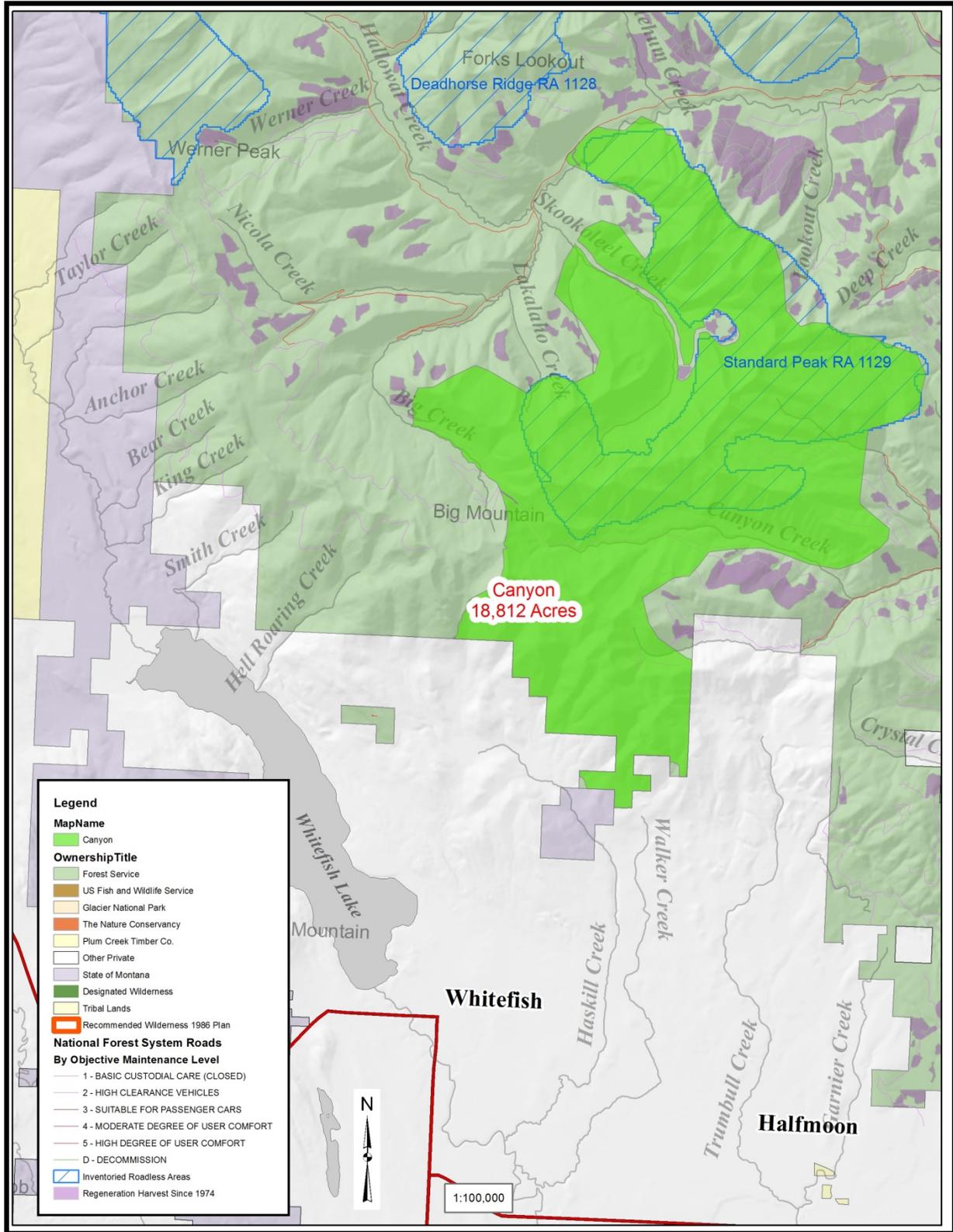


Figure F-4. Canyon wilderness inventory area

Coal Area

A total of 67,181 acres was included in the Coal wilderness inventory area. This area is located on the Hungry Horse–Glacier View Ranger District. Figure F-5 shows the Coal wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 87% subalpine fir (Douglas-fir, larch), common types on the Flathead NF. About 9% sparse vegetation, shrubs, mainly avalanche chutes. There is about 3% whitebark pine dominance type.

Potential vegetation types: cool/cold moist types dominate, supporting typical mixed coniferous forest types. There is a considerable amount of areas in cold, higher elevation sites that are capable of supporting whitebark pine, a more rare type.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-25. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	90%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There is no non-native or parasitic wildlife species present. Weeds are limited to roads. There is a low probability of weeds within most of remaining area, except within recent burn area. Heavy weed concentration exists along southeast edge, adjacent to and within the inventoried area.

Watersheds within this area include Big, Coal, Moran, Hay and Red Meadow Creeks. These watersheds contain both pure and hybridized populations of westslope cutthroat trout and bull trout. Rainbow trout and hybrids are the only aquatic invasive species found in these watersheds.

Numerous past harvest units (6,635 acres) and associated roads, are concentrated along streams that bisect the area, and in the upper basins. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~40% of area burned 1919-1929, 25% burned in 2001). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-26. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable. These are the non-timber harvesting treatments.	Discussed in measures for 1b, if applicable.
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Most (~80%) of the harvest occurred from 1950s through 1970s, predominantly on gentle to moderate slopes. These harvest units are densely stocked with trees, shrubs, and not visible. Some associated roads templates may be noticeable in foreground views, but likely not evident from mid- or background view except within recent burn area, where old road templates and jammer logging roads are visibly evident.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	Some dispersed camping sites exist
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None

Improvement Type	Extent of departures
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Remains of 3 historic lookouts on Coal Ridge, Coal Ridge Cabin, and China Basin cabin.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-27. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity.	67,121 acres (100%)
Area and % total available for winter non-motorized opportunity	59,786 acres (89%)

Portions of this area provide for outstanding opportunity for solitude. The sights and sounds of human activities and improvements are screened well by the topography or do not have impact due to distance. About 65% of the area is within three inventoried roadless areas (IRAs) (Benchmark IRA #1126, Coal Ridge IRA #1127 and Deadhorse IRA #1128).

The eastern boundary is close to the North Fork Road and in some places the boundary is adjacent to private land with residential homes which may influence solitude but would not be pervasive. The area boundary is adjacent to the Coal Creek State Forest to the east.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-28. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	60,794 acres (90%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	34,839 acres (52%)

Describe the types of primitive recreation activities in the area.

Primitive recreation activities in the area include hiking, backpacking horseback riding, fishing, hunting, forest product gathering, cross country skiing and backcountry skiing. The Pacific Northwest National Scenic Trail passes through the northern part of the area (trails #3 and #26). The western boundary of the

area is along the Whitefish Divide, with the Ralph Thayer National Recreation Trail (trail#26) running along it north to south. Other ridge top trail experiences exist on Coal Ridge and Moose Peak.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-29. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	23 miles (14%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is a large amount of existing whitebark pine dominance type, estimated at 2,000 acres, with many 1000s more acres potentially able to support whitebark pine. Large amount of higher elevation sites, suitable for whitebark pine - approximately 24,000 acres of mapped whitebark pine potential vegetation type. Genetically superior whitebark pine trees on Moose Peak are identified and provide seed for whitebark pine tree improvement and restoration programs.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None
Minimally represented or rare vegetation types in region ⁶	Presence of a rare plant: <i>Botrychium sp.</i> (Moonworts)
Species richness % of total acreage ⁷	26,006 acres (39%) of level 3/4
Acres of key conservation areas for wolverine ⁸	35,023 acres (52%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	All key for wolverines <i>except</i> for area south of Coal Creek State Forest, moderate for grizzly bear; low for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-30. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high scenic public value.	30,350 acres (45%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	22,719 acres (34%)

Describe if there are any unique geologic features in the area.

No known caves in the area. The Whitefish Divide makes up the western boundary of the area as well as Moose Peak (7,531 feet) in the south and Moran Peak (7,404 feet) in the north. The area includes higher elevation ridgelines and the upper reaches and small tributaries of Hay, Moran, Coal, and Hallowat Creeks. A few pockets of small pothole lakes exist in a few of the upper basins along the Whitefish Divide.

Question 3c

Are there historic or cultural resources of historic value in the area?

There are the remains of three historic lookouts on Coal Ridge. Coal Ridge Cabin is currently being worked on to stabilize the structure. The remains of the China Basin Cabin and an old trapper's cabin are along the Whitefish Divide in the top of China Basin.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-31. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

Narrative response for 3f: No known significant educational features in the area. Whitebark pine plus trees¹ are identified in this area which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-32. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	The area is irregular in shape. A portion of the eastern boundary is the Coal State Forest and follows state forest boundary lines which are straight lines. The upper northeastern boundary is adjacent to private land. The north boundary follows along past harvest units. There are numerous nodes in this inventory area due to excluding open roads. The western boundary follows the Kootenai NF/Flathead NF boundary line.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	Kootenai NF, MA 3 (non-forested lands), MA 15 (timberlands)
Describe the current management of the area.	<p>4 miles seasonally open road (part of RD# 1691 & 1693 to be decommissioned); 16 miles closed roads; 43 miles decommissioned or historical roads; 50 miles terra¹¹ trails (0 miles motorized); 22 miles motorized over-snow routes; 7,395 acres (11%) allows motorized over-snow.</p> <p>56% MA 2 (unroaded lands for dispersed recreation); 8% MA 3 (non-forested lands); 8% MA 12/17 (riparian habitat); 27% MA 15/16 (timberlands).</p>
Acres and % total of wildland urban interface in the area.	1,556 acres (2%)
Type and extent of management restrictions within the area.	<p>9 miles of bull trout critical habitat (6 streams). 67,107 acres (100%) of lynx critical habitat 59,115 acres (88%) of grizzly bear security core</p> <p>6,218 acres (9%) of Benchmark inventoried roadless area (IRA) #1126 13,997 acres (21%) of Coal Ridge IRA #1127 23,319 acres (35%) of Deadhorse IRA #1128 65% (43,534 acres) in IRA</p>

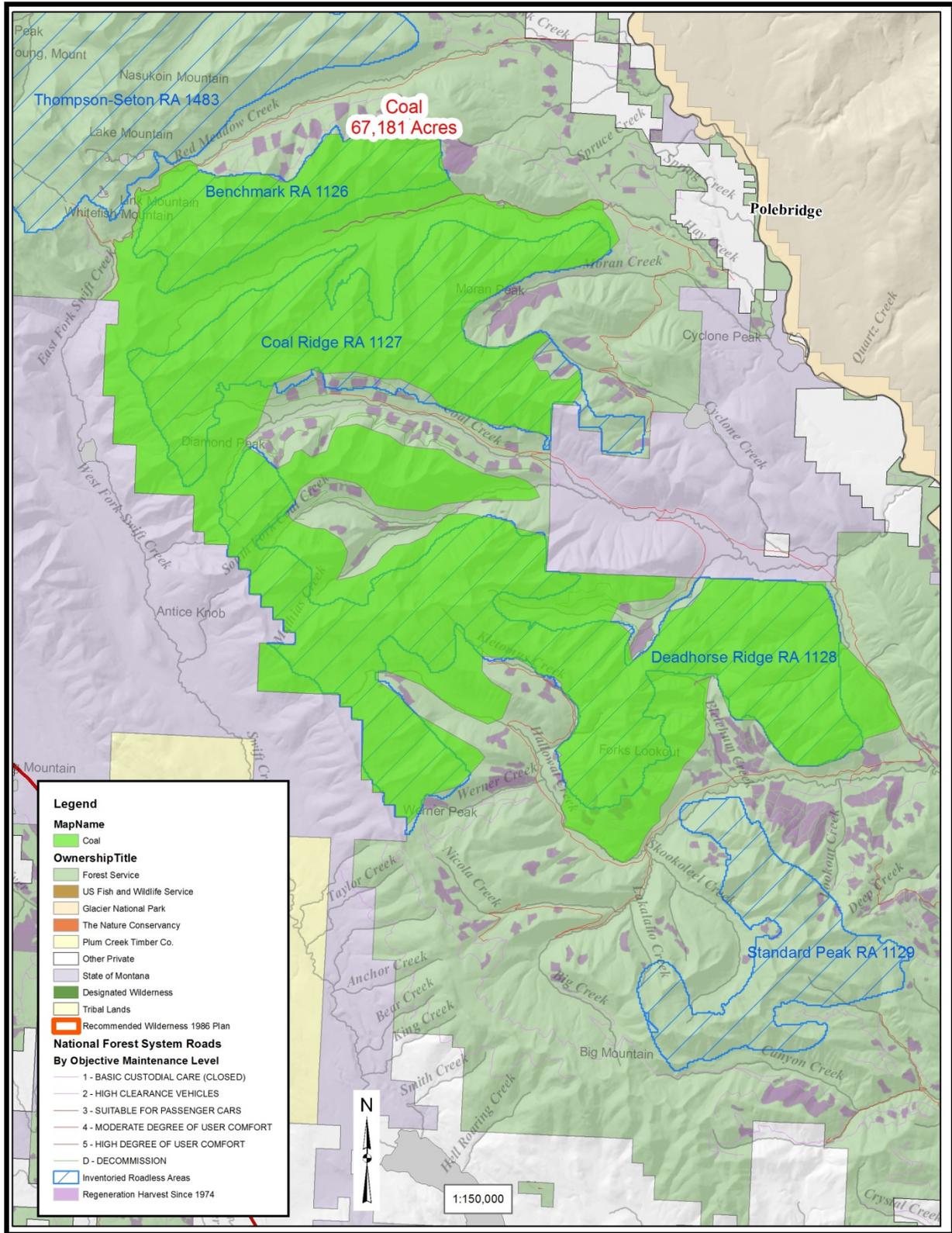


Figure F-5. Coal wilderness inventory area

Cold Creek Area

A total of 674 acres was included in the Cold Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-6 shows the Cold Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation types: 100% subalpine fir, western larch (Douglas Fir); common types on the Flathead NF.

Potential vegetation types: ~100% cool moist/moderate dry types. A small portion on the west side is >6,000 feet elevation, which has potential for whitebark pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-33. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	64%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	96%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads. There is a low probability of weeds within most of area.

Numerous past harvest units (240 acres) are spread throughout the relatively large portion of the area. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The

current vegetation within this inventory area is primarily affected by natural ecological processes. No known major fire has occurred in the past 120 years.

There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

The primary watershed in this area is Cold Creek. Invasive rainbow trout and brook trout are present. Bull trout and westslope cutthroat trout are also present.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-34. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1b
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest occurred in 1957, 1970-74 and 3 harvest units in 1987. Most of the older harvests was on gentle slopes, except for 1987 harvests. The earlier harvests units are not visible. Both the 1987 and 1974 clearcuts, are substantially noticeable, especially on steeper slopes.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.

Improvement Type	Extent of departures
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-35. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	659 acres (98%)
Area and % total available for winter non-motorized opportunity	186 acres (28%)

This area provides outstanding opportunities for solitude. All roads within the inventory area are closed yearlong and this area is adjacent to the Mission Mountains Wilderness. About 14% of this inventory area is within the Mission Addition #01505 inventoried roadless area. Topography elevation ranges from approximately 6,000 feet in the southwest corner to approximately 4,800 feet down in the Cold Creek drainage, resulting in steep slopes which provide buffering of sound. There are also large amounts of vegetation to provide screening to sight and sound. About 72% of the area is open to over-snow vehicles which may influence solitude but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-36. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	357 acres (53%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	7 acres (1%)

Describe the types of primitive recreation activities in the area.

Primitive recreation activities are available such as hiking, camping, backpacking, snowshoeing and fishing.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-37. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	1 mile (51%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	Small amount of potential habitat for whitebark pine.
Acres and number of water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	No acres of level 3/4.
Acres of key conservation areas for wolverine ⁸	3 acres (<1%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for wolverines, key for grizzly bear; N/A for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-38. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	474 acres (70%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72 75,	0 acres

Describe if there are any unique geologic features in the area.

To our knowledge, no caves are present in the inventory area. There is one large wetland or bog located in the southwest portion of the inventory area.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and hybridized westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. Cold Creek is a class 2 watershed which has some degree of impairment and exhibits moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-39. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, no scientific or education features are located within the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-40. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. Western boundary and portion of northern boundary are adjacent to the Mission Mountains Wilderness.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 15 (timberlands) and MA 22 (Mission Mountains Wilderness). Adjacent to previously Plum Creek lands which were harvested and roaded.
Describe the current management of the area.	4 miles of closed roads; 0 miles terra ¹¹ trails; 4 miles motorized over-snow routes; 488 acres (72%) allow motorized over-snow. 100% MA 15 (timberlands)
Acres and % total of wildland urban interface in the area.	0 acres
Type and extent of management restrictions within the area.	1 mile of bull trout critical habitat (1 stream). 674 acres (100%) of lynx critical habitat 96 acres (14%) of grizzly bear security core. 94 acres (14%) in the Mission Addition inventoried roadless area #01505

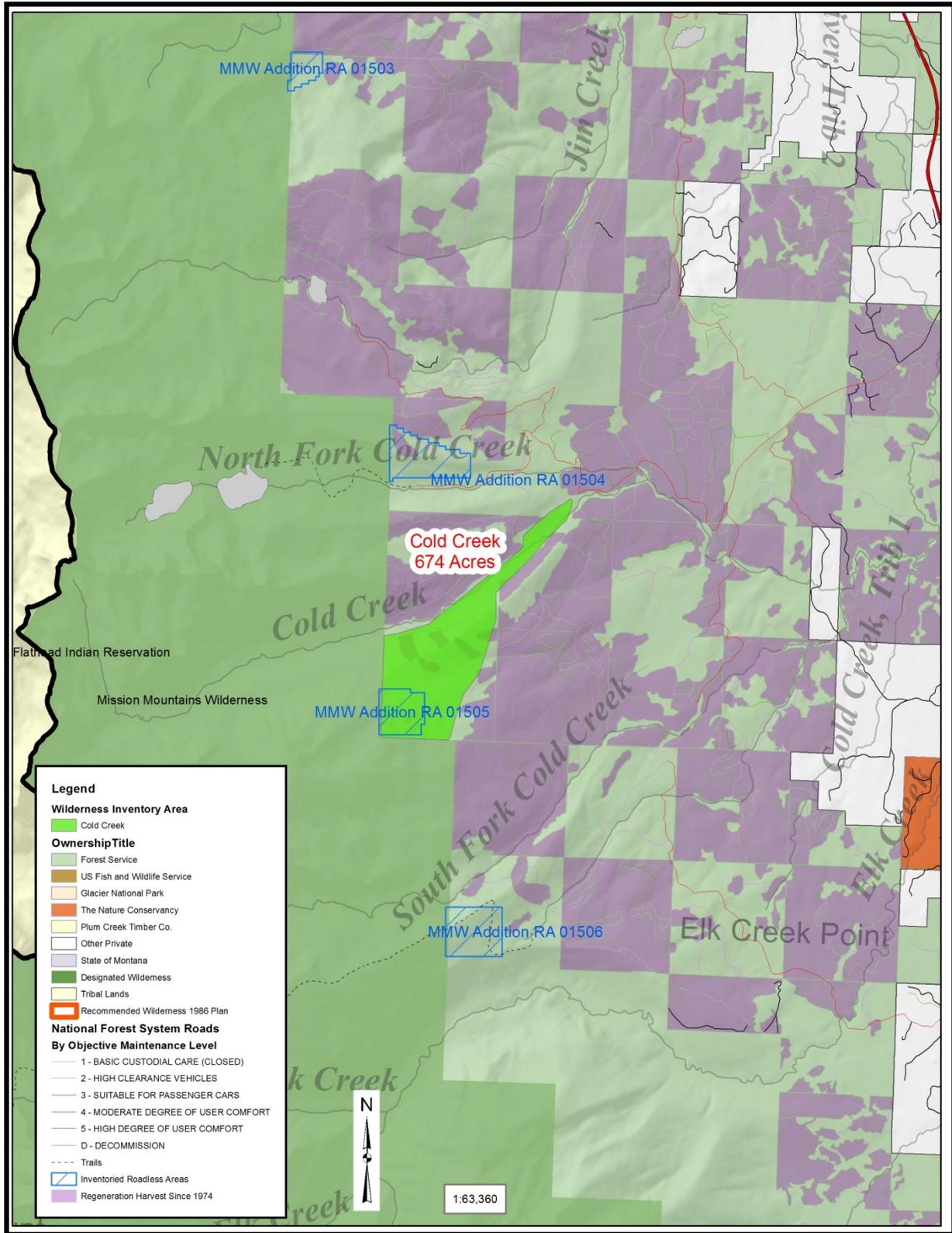


Figure F-6. Cold Creek wilderness inventory area

Crane Porcupine Area

A total of 5,338 acres was included in the Crane Porcupine wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-7 shows the Crane Porcupine wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 99% lodgepole pine, larch, Douglas-fir, subalpine fir; common types on the Flathead NF.

Potential vegetation types: cool types, supporting typical mixed conifer forest types. The elevation extends down to about 3,800 feet, and warm-moist grand fir, western red cedar, western hemlock, and western white pine potential vegetation types occupy much of these areas, supporting typical mixed conifer forest types.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-41. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	79%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	98%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	99%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There is no non-native or parasitic wildlife species present. Weeds are limited to roads. There is a low probability of weeds within remaining area.

There are numerous past harvest area across nearly 20% of area (1,112 acres). Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes; though past fire suppression has probably influenced current vegetation conditions in some areas (~50% of area burned 1919; no recent fire). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

The primary stream in this area is Porcupine Creek. Invasive brook trout are present and there are no bull trout or westslope cutthroat in this area.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-42. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest occurred in the 1950s to early 1970s, on gentle to steep slopes. Harvest areas are fully reforested. Associated historic road templates and skid trails/jammer roads may be visible in foreground view, especially in steeper units.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.

Improvement Type	Extent of departures
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-43. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	5,297 acres (99%)
Area and % total available for winter non-motorized opportunity	8 acres (0%)

This area provides very high opportunities for solitude with many of the roads on FS lands closed yearlong. The topography consists of rolling slopes and an abundance of vegetation which provides buffering of sound and sights. Over-snow vehicles are allowed on 100% of the area and may influence solitude during the winter. There is 11 miles of groomed over-snow routes within the area. The area is close to private lands near the southeast shore of Swan Lake and there may be noise from motor boats on Swan Lake but it would not be pervasive. The Flathead Indian Reservation borders much of the western boundary.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-44. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	4,985 acres (93%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	0 acres (0%)

Describe the types of primitive recreation activities in the area.

The area provides opportunities for primitive recreation such as cross-country hiking, wildlife viewing, hunting and fishing. There are no trails within the inventory area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-45. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	None.
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	No known existing whitebark pine dominance type. The area in the south half above 6,000 feet potentially could support whitebark pine.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	No acres of level 3/4
Acres of key conservation areas for wolverine ⁸	1 acre (<1%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Moderate-high for lynx; high for connectivity between Mission and Swan Range.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-46. Measures for 3b

Measures	Outcome
Acres and % total of distinctive scenic class 1 and 2, which have a high public value.	4,074 acres (76%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	0 acres

Describe if there are any unique geologic features in the area.

To our knowledge, no caves or unique geologic features are present.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

Brook trout is the only salmonid present. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-47. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

None

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-48. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular configuration. Tribal lands adjacent to the western boundary. Boundary follows past harvest units and roads.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 15 (timberlands); tribal lands
Describe the current management of the area.	<1 mile of seasonally open road (part of RD# 498 to be decommissioned); 10.5 miles closed roads; 7 miles of decommissioned or historical roads; 11 miles motorized over-snow routes; 5,328 acres (100%) allow motorized over-snow; 100% MA 15 (timberlands)
Acres and % total of wildland urban interface in the area.	155 acres (3%)
Type and extent of management restrictions within the area.	No bull trout critical habitat. 4,831 acres (90%) of lynx critical habitat. 3,184 acres (60%) of grizzly bear security core. 0% in inventoried roadless area

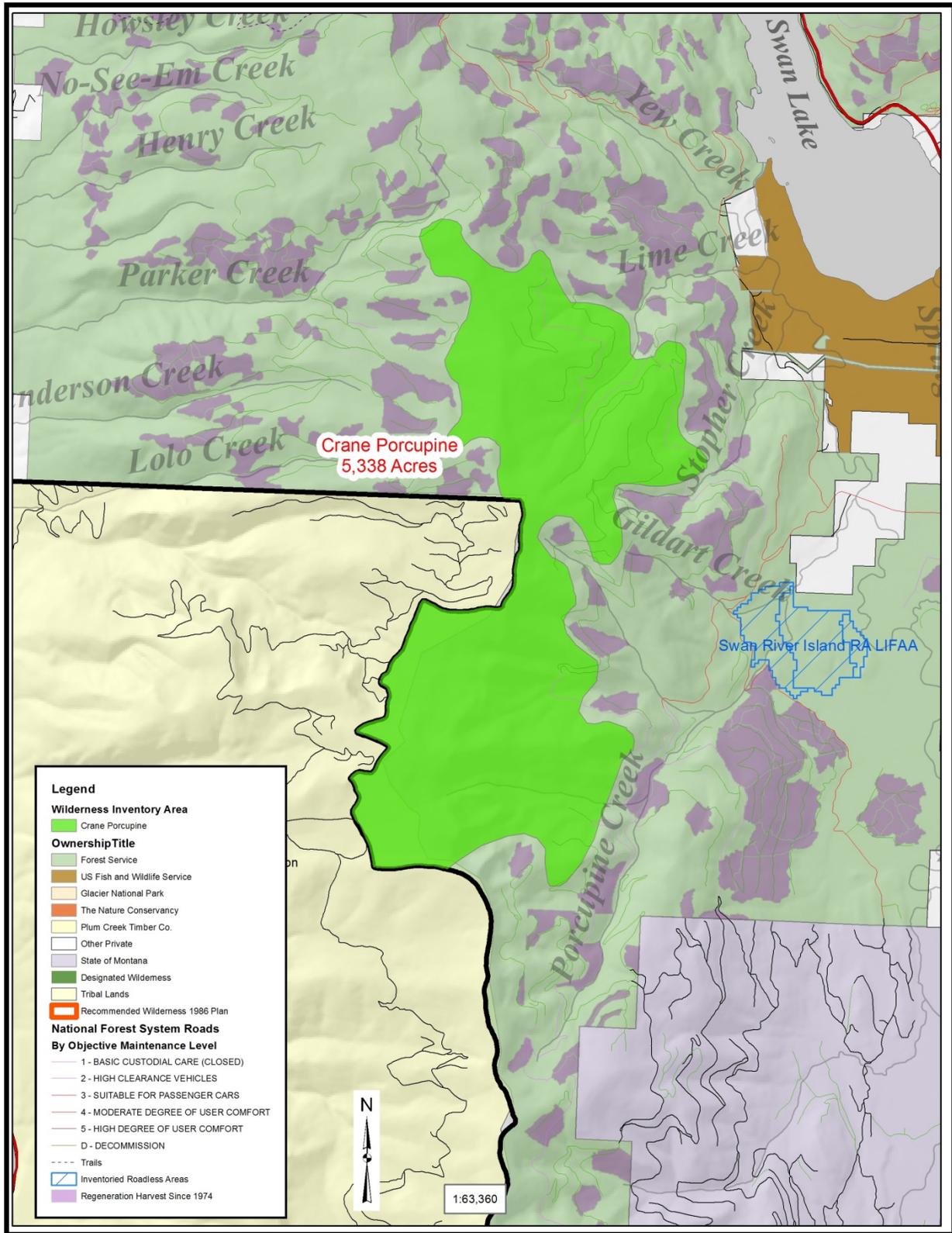


Figure F-7. Crane Porcupine wilderness inventory area

Demers Area

A total of 6,959 acres was included in the Demers wilderness inventory area. This area is located on the Hungry Horse–Glacier View Ranger District. Figure F-8 shows the Demers wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

The existing vegetation dominance types is 99% lodgepole (Douglas-fir, larch) in the area; common types on the Flathead NF. Potential vegetation types: 90% cool types, supporting mostly lodgepole pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action plan lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-49. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	84%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads, and small areas adjacent to roads (trailheads, gravel pits). There is a high potential for weeds within area due to recent severe fire and warm-dry vegetation types.

The westside of this area drains into Langford Creek and Swamp Creek, a tributary to Coal Creek. There is a small degree of hybridization of westslope cutthroat trout with rainbow trout in Langford Creek. Swamp Creek supports pure westslope cutthroat trout. Bull trout are not present in these streams. There are no other aquatic invasive species in these watersheds.

Past harvested areas total 1,130 acres. There was a high severity fire in 2001 that killed 90%+ of trees. Very little harvest took place prior to the fire; salvage of fire-killed trees accounts for nearly all harvest area. Fire severity and effects are largely considered natural, except in some areas of southwest aspect where pre-fire forests were mature, uneven-aged Douglas fir (ponderosa pine) on warm/dry sites. Fire suppression likely influenced pre-fire forest density and fuel loadings.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-50. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable.	Mostly post fire-salvage, with no associated roads, gentle slopes, and not visibly evident.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Remains of Demers Ridge Lookout

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-51. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity.	6,955 acres (100%)
Area and % total available for winter non-motorized opportunity	6,851 acres (98%)

Portions of this area provide outstanding opportunities for solitude, particularly as you move away from the North Fork Road. This inventory area is adjacent to private land with residential structures, to the Coal Creek State Forest and to the North Fork Road. The entire area was burned during the 2003 Roberts Fire. The sights and sounds of human habitation and activities are somewhat apparent on the North Fork Road and the Camas Road, heading in to Glacier National Park but would not be pervasive. About 2% of the area allows for over-snow vehicle use.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-52. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	4,096 acres (59%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	0 acres (0%)

Describe the types of primitive recreation activities in the area.

Primitive recreation activities in the area include hiking, horseback riding, forest product gathering, and hunting. Trails in the area are limited to Trails #266 and #381 which all go to or loop off of Glacier View Mountain. Winter use includes cross country and/or backcountry skiing.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-53. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	2 miles (6%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is no whitebark pine dominance type within the area and very small area of potential whitebark pine habitat.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None

Measures	Outcome
Minimally represented or rare vegetation types in region ⁶	Presence of a rare plant: <i>Corydalis sempervirens</i> (pale corydalis)
Species richness % of total acreage ⁷	No acres with level 3/4
Acres of key conservation areas for wolverine ⁸	52 acres (1%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	Low-moderate for wolverines, moderate for grizzly bear, low for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-54. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high scenic public value.	6,253 acres (90%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	664 acres (10%)

Describe if there are any unique geologic features in the area.

No known cave or unique geologic features are in the area.

Question 3c

Are there historic or cultural resources of historic value in the area?

Remains of Demers Ridge Lookout.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-55. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

No known significant scientific or education features.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-56. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. The northern boundary is adjacent to private land and adjacent to the Coal Creek State Forest. The eastern boundary is adjacent to the North Fork Road. The western boundary is adjacent to FS Road #317.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	Coal Creek State Forest, MA 15 (timberlands), MA 18 (Flathead wild and scenic river), MA 12 (riparian), MA 9 (timberlands and whitetail deer habitat)
Describe the current management of the area.	<1 mile of historical roads; 10 miles terra ¹¹ trails (0 miles motorized); 0 miles motorized over-snow routes; 108 acres (2%) allows motorized over-snow; 26% MA 2 (unroaded lands); 22% MA 9/13 (timberlands whitetail deer, mule deer and elk habitat); 5% MA 12 9riparian); 47% MA 15/16 (timberlands); 1% MA 18 Flathead wild and scenic river)
Acres and % total of wildland urban interface in the area.	2,989 acres (43%)
Type and extent of management restrictions within the area.	1 mile of bull trout critical habitat (1 stream) 6,106 acres (88%) of lynx critical habitat 4,689 acres (67%) of grizzly bear security core 0% in inventoried roadless area

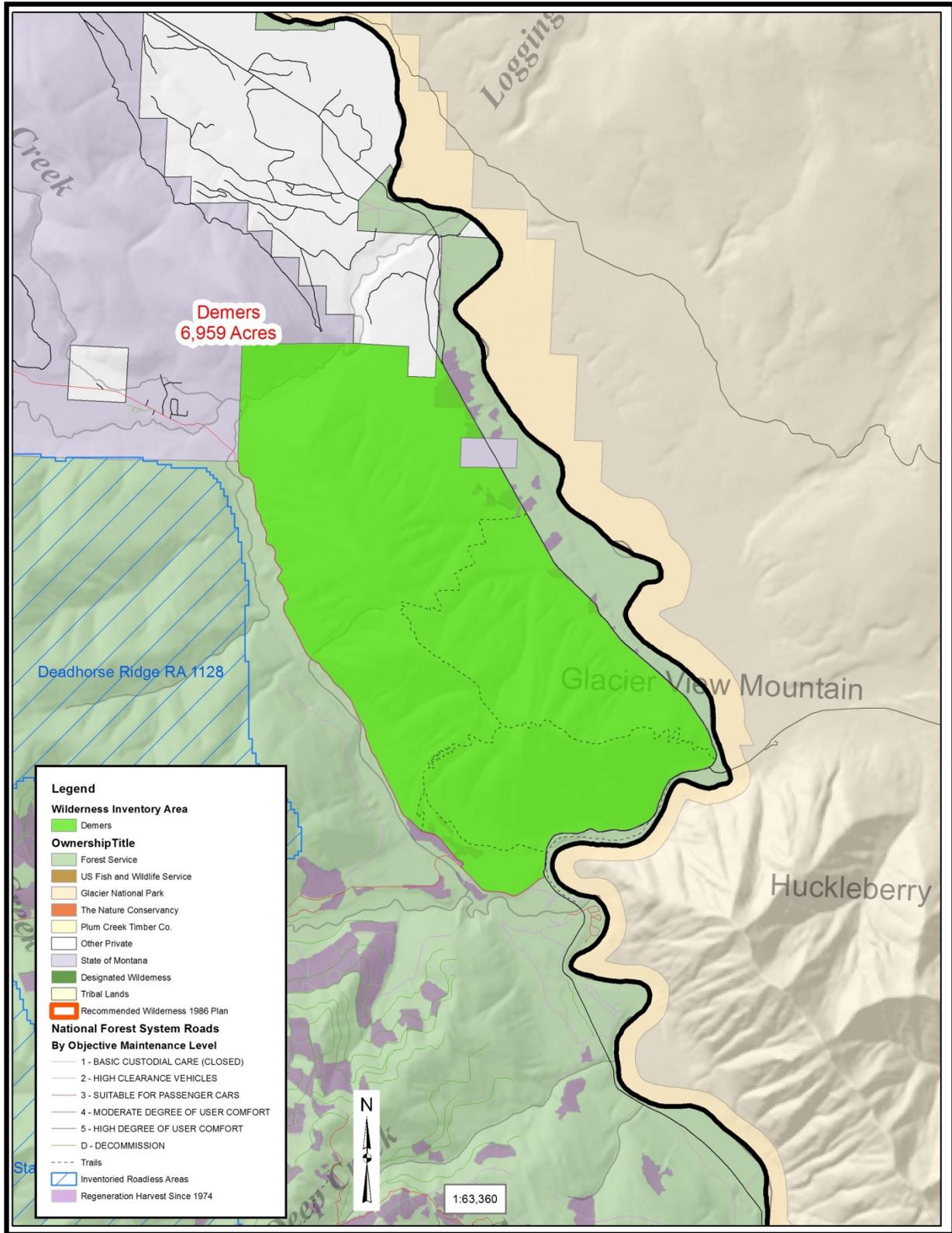


Figure F-8. Demers wilderness inventory area

Elk Creek Area

A total of 7,733 acres was included in the Elk Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-9 shows the Elk Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 96% lodgepole pine, Douglas-fir, larch and subalpine fir; common types on the Flathead NF. There are some hardwood types in the bottom of Windfall Creek.

Potential vegetation types: ~90% cool types, supporting typical mixed conifer forests. Elevation within inventory area extends down to 4,200 feet in Elk Creek, 4,100 feet in south end (Windfall and Hemlock creeks). Warm, moist potential vegetation types exist in these lower elevations, mostly grand fir types, with potential to support western hemlock and western white pine; currently supporting mixed conifer forests. There is some cedar potential vegetation type in south half also, unknown whether cedar currently occurs on these sites. Much of this type is within recent fire area, so there is likely no existing cedar there presently.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-57. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	77%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	97%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads. There is a low probability of weeds within area.

There is a substantial amount of past harvest (1,799 acres), mostly concentrated in the south half of area and within the 2003 burn area. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~70% burned 1919; 50% burned 2003). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

The primary watersheds in this area are Elk Creek and Kraft Creek. Elk Creek is the most important bull trout spawning stream on the Flathead NF and also supports westslope cutthroat trout. Kraft Creek supports westslope cutthroat trout, brook trout, and some bull trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-58. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest occurred from 1960s to 2005 (latter was post fire salvage), and concentrated in south half of area. Legacy lands (previously Plum Creek lands) are present and had both pre and post fire harvesting activities. Harvest units are not visible. There are many existing roads in the south part of area and in many cases; the road template is exposed by fire. These road templates may be visible in foreground view, with some portions likely evident from mid/back ground views.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None

Improvement Type	Extent of departures
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	Red Butte fish barrier is a large concrete fish barrier on Red Butte Creek.
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-59. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	7,588 acres (98%)
Area and % total available for winter non-motorized opportunity	5,597 acres (72%)

Portions of this inventory area provide for outstanding opportunity for solitude, mainly in the north portion. In the southern portion of this area, opportunities for solitude are influenced by the sight and sounds of the Kraft Creek Road #56. Users in the southern portion of this inventory area may experience the sights and sounds of road use but this is not pervasive use. This road is a popular route to the Glacier Creek Trailhead. Vegetative screening is limited in the southern section because of the Crazy Horse Fire (2003) of and provides limited buffers to sound and sight. The area is about 1 mile away from private lands and some residential buildings.

Over-snow vehicle use is allowed on 28% of the area and there is 25 miles of over-snow routes. This may influence solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-60. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	3,977 acres (51%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	4,274 acres (55%)

Describe the types of primitive recreation activities in the area.

Elk, Windfall, Hemlock, Frenchy, and Red Butte Creeks offer opportunities for primitive recreation activities such fishing, paddling, hiking, backpacking, snowshoeing and possible backcountry skiing in this area. Trails #607, #515, and #301 offer hiking opportunities.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-61. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	14 miles (46%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is no known existing whitebark pine dominance type; there is a small region above 6,000 feet elevation where whitebark pine may potentially occur.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	Includes 3 unoccupied ponds (<1 acre); part of 1 unoccupied pond (<1acres); and part of Windfall Creek fen (1. acres).
Minimally represented or rare vegetation types in region ⁶	The presence of the rare plant: <i>Lycopodium inundatum</i> (Northern Bog Clubmoss) Minimally represented species: May support the presence of Grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	147 acres (2%) of level 3/4.
Acres of key conservation areas for wolverine ⁸	154 acres (2%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	Negligible (<1 acre (0%) of habitat.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Central portion key for grizzly bear— the rest is low, to mostly low for wolverine and low for lynx. Refer to the maps in the cited works. Species – stronghold for grizzly bear (threatened and endangered, T&E), wolverine (proposed T&E), Rocky Mountain tailed frog stronghold (species in decline), heavy elk use (potential species of public interest, SOPI), mountain goat (potential SOPI), and western toad (potential SOPI).

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, caves, or other geologic features?

Table F-62. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	4,784 acres (62%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types map 17, 54, 55, 72, 75	1,541 acres (20%)

Describe if there are caves or any unique geologic features in the area.

To our knowledge, no caves or unique geological features are present.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-63. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0 acres

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in this area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-64. Measures for 4a

Measures for 4a	Outcome
Describe the shape and configuration of the area.	Irregular shape. The west border is contiguous to the Mission Mountains Wilderness. The northeast border follows section lines that were former Plum Creek lands. The south eastern border follows past harvest units.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	none
Describe the management of adjacent lands.	MA 22 (Mission Mountains Wilderness), MA 15c (timberlands)
Describe the current management of the area.	0.3 miles of open yearlong roads (RD# 561F to be decommissioned); 24.5 miles of closed roads; 0.3 miles of decommissioned roads; 6 miles terra ¹¹ trails (0 miles motorized); 25 miles motorized over-snow routes; 2,137 acres (28% allow motorized over-snow; 6% MA 1 (non-forest lands); 93% MA 15 (timberlands)
Acres and % total of wildland urban interface in the area.	563 acres (7%)
Type and extent of management restrictions within the area.	4 miles of bull trout critical habitat (1 stream). 7,733 acres (100%) of critical lynx habitat. 3,808 acres (49%) of grizzly bear security core. 132 acres (<1%) are within Mission Addition #01506 inventoried roadless area.

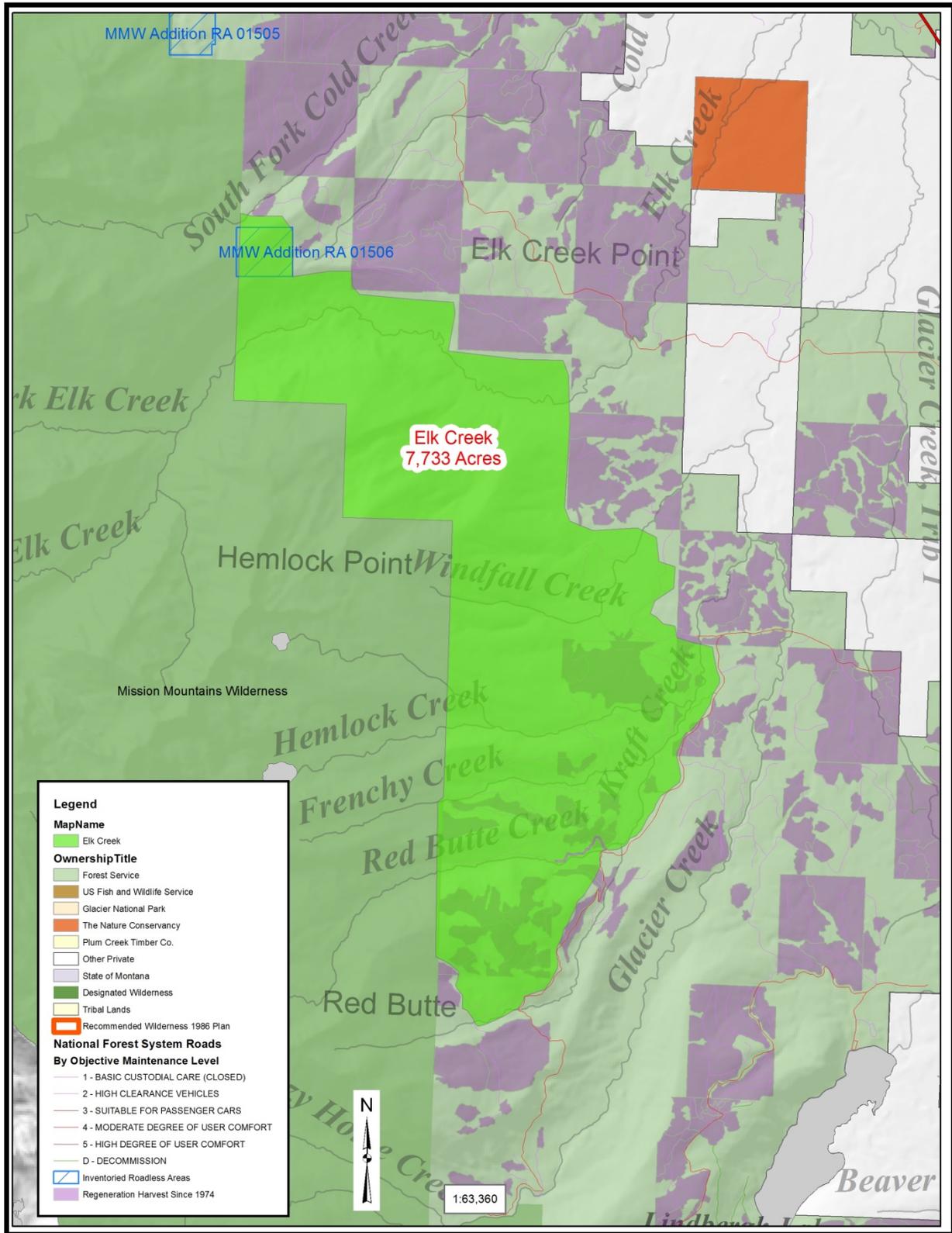


Figure F-9. Elk Creek wilderness inventory area

Essex Area

A total of 23,025 acres was included in the Essex wilderness inventory area. This area is located on the Hungry Horse–Glacier View Ranger District. Figure F-10 shows the Essex wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 88% Douglas-fir, lodgepole pine, subalpine fir, larch which are common type on the Flathead NFs; there is about 11% sparse vegetation, high elevation lands, including avalanche chutes in this area; there are some hardwood types along in areas near Middle Fork Flathead River.

Potential vegetation types: mostly cool moist/dry types, supporting typical mixed conifer forest types. Substantial amount of cold sites, with elevations extending up to 7,200 feet, supporting whitebark pine above about 6,000 feet elevation (and perhaps some mountain hemlock also - Dickey Creek area). Some patches of warm moist types in lower Moccasin Creek have the potential to support grand fir, western hemlock, cedar, and western white pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-65. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	92%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

The Brown-headed cowbird is the only non-native or parasitic wildlife species present. Weeds are mostly limited to roads and areas of concentrated use along Hwy 2, with the exception of a large concentration of known infestations in Essex area. There is a moderate to high probability of weeds in areas adjacent to Essex and other known weed concentrations; low probability of weeds elsewhere.

There are numerous watersheds within this area; most are too steep to support a significant fish population with the exception of tunnel, Dickey and Essex creeks. Bull trout area not present in these watershed but exist immediately downstream in the Middle Fork Flathead River. Westslope cutthroat trout are present throughout the area with pure populations. Brook trout is the primary invader and occurs in Moccasin, Great Bear, Devil and Geifer creeks. A small degree of hybridization from rainbow trout with westslope cutthroat trout can also be found throughout the area.

There have been past harvest units, (1,756 acres) that are concentrated in stream bottoms of central and south half of area, and in the Pinnacle area. Forest composition, structure, and patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~50% of area burned 1910-1929). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-66. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Most harvest occurred from 1960s on gentle slopes. These harvest areas are fully revegetated and not visible. Many of the historic road templates are largely not noticeable, except perhaps in steeper portions of Pinnacle area.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None

Improvement Type	Extent of departures
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-67. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity.	22,994 acres (100%)
Area and % total available for winter non-motorized opportunity	8,080 acres (35%)

Portions of this inventory area provide for outstanding opportunities for solitude; especially as you move away from the Highway 2 corridor and move upslope. Interspersed private lands are adjacent to the majority of the eastern boundary. The highway 2 corridor (railroad and highway) is adjacent to this area. The western border is adjacent to the Great Bear Wilderness. About 72% of the area is within an inventoried roadless area (IRA) (Bear-Marshall-Scapegoat-Swan IRA #01506).

There are 2 miles of motorized over-snow routes and 65% of the area allow for motorized over-snow use. Solitude in the winter may be influenced by over snow vehicle use but it would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-68. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	14,240 acres (62%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	7,271 acres (32%)

Describe the types of primitive recreation activities in the area.

Primitive recreation opportunities in the area include hiking, backpacking, horseback riding, fishing, hunting, cross country skiing, and backcountry skiing. The area is increasingly popular with backcountry skiing in the winter due to the terrain and easy access from US HWY 2. There are 19 miles of trails within the area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-69. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	23 miles (29%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is little known existing whitebark pine dominance type. There is several hundred acres of whitebark pine potential vegetation type, and high elevation, sparsely vegetated exposed sites that are favored by whitebark pine.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None
Minimally represented or rare vegetation types in region ⁶	Presence of the following rare plants: <i>Botrychium sp.</i> (Moonworts), <i>Solorina spongiosa</i> (Fringed Chocolate Chip Lichen), <i>Dicranella grevilleana</i> (Greville's dicranella moss), <i>Papaver pygmaeum</i> (Alpine Glacier Poppy), <i>Corydalis sempervirens</i> (Pale Corydalis) Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	3,750 acres (16%) of level 3/4
Acres of key conservation areas for wolverine ⁸	3,942 acres (17%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	811 acres (4%) of habitat.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for wolverines, key for mountain goat, key for grizzly bear, a portion is low for lynx, and a portion is high for lynx: radioed lynx crossed Hwy. 2 from Geifer Creek west to Essex Creek.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-70. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	13,378 acres (58%)

Measures	Outcome
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	1,297 acres (6%)

Describe if there are any caves or unique geologic features in the area.

No known cave resources or unique geologic features in the area.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-71. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0 acres

Question 3d

Are there high quality water resources or important watershed features in the area?

There is a community water source that is drawn from Essex Creek in this area. This area supports bull trout in the Middle Fork and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3f

Are there any scientific or education features in the area?

No known significant scientific or educational features in the area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-72. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. Interspersed private lands on the eastern boundary which is adjacent to Highway 2. Western and southern boundaries are adjacent to the Great Bear Wilderness.

Measures	Outcome
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	Great Bear Wilderness (MA 21), MA 13a (non-forested, mule deer and elk winter habitat)
Describe the current management of the area.	<p>2 miles closed roads; 4 miles decommissioned or historical roads; 19 miles terra¹¹ trails (2 miles motorized); 2 miles motorized over-snow routes; 14,942 acres (65%) allow motorized over-snow;</p> <p>38% MA 2 (unroaded); 1% MA 4 (develop rec sites); 12% MA5/7/8 (high scenic value); 9% MA 12/17 (riparian habitat) ; 3% MA 13 (timberlands, mule and elk winter habitat); 29% MA 15/16 (timberlands); 8% MA 18 (Flathead wild and scenic river)</p>
Acres and % total of wildland urban interface in the area.	18,197 acres (79%)
Type and extent of management restrictions within the area.	<p>6 miles of bull trout critical habitat (2 different streams/rivers).</p> <p>22,729 acres (99%) of lynx critical habitat</p> <p>13,463 acres (58%) grizzly security core</p> <p>16,531 acres (72%) of Bear-Marshall-Scapegoat-Swan inventoried roadless area #01506</p>

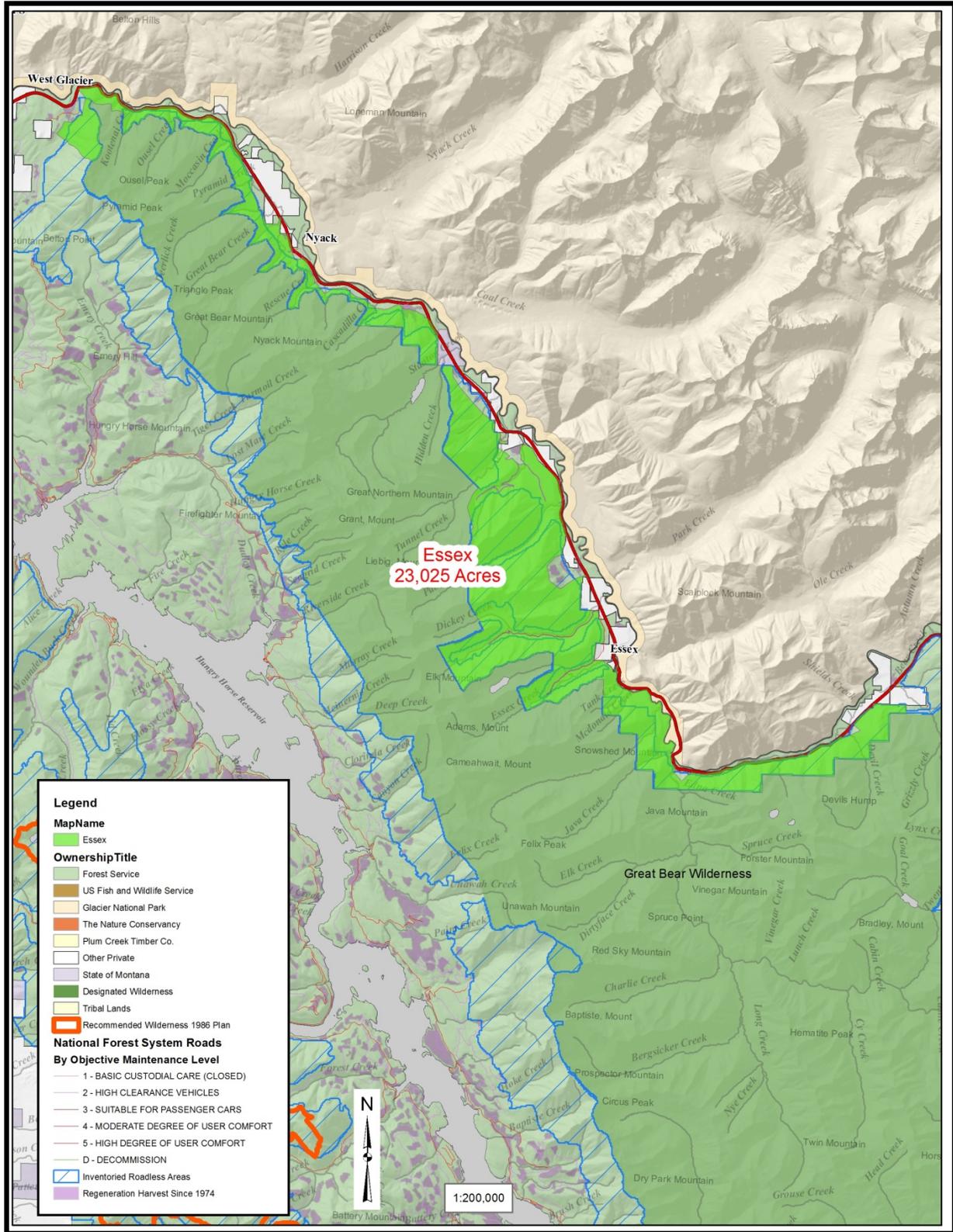


Figure F-10. Essex wilderness inventory area

Fatty Creek Area

A total of 4,963 acres was included in the Fatty Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-11 shows the Fatty Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

There is about 94% subalpine fir, lodgepole pine (larch, ponderosa pine) in the area. About 4% of the area is cedar stands, with many stands likely in mature/old forest, a relatively rare type on the Flathead NF.

Potential vegetation types: ~70% cool moist, supporting typical mixed conifer forests. The elevation extends down to about 4,100 feet in Cedar and Fatty Creeks, and the lower elevations is warm moist cedar potential vegetation type (30% of the area) capable of supporting western red cedar as well as grand fir, western hemlock, and western white pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-73. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	80%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	99%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads with a low probability of weed within most of area. There are large area of past harvest in the north part of Fatty Creek drainage area (993 acres), associated roads and numerous skid trails (especially on previous Plum

Creek lands). Forest composition, structure, patterns in harvest areas has been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes; including fire (~60% burned 1910, 1934; no recent fire). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

The main watersheds in this area are Fatty Creek and Cedar Creek. These two creeks primary support invasive brook trout and some westslope cutthroat trout in the headwaters. An occasional bull trout is also captured.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-74. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest occurred in the 1955 and 1970, with some harvest in 1978 on legacy lands. Most harvest was on gentle slopes. The harvested areas are fully reforested. Most of the harvested areas and roads/skid trails not visible. The exception is the 1978 harvest (~200 acres, sec 9), where harvest is noticeable to some extent, and numerous skid trails still evident in foreground view.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None

Improvement Type	Extent of departures
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-75. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	4,957 acres (100%)
Area and % total available for winter non-motorized opportunity	2,454 acres (49%)

Portions of this inventory area provide for outstanding opportunity for solitude in this area. The topography of the area consists of steep creek drainages which buffer sound. There is an abundance of vegetation providing screening to sight and sound. About 7% of the area is within an inventoried roadless area (IRA) (Mission Addition #01501). There are portions of the inventory area that are adjacent to the Swan River State Forest and may have sights and sounds of harvesting but this would not be pervasive. The Fatty Creek Road #10381 is buffered out of the inventory area but still may influence solitude within the area but would not be pervasive.

There is about 9 miles of over snow routes and 51% of the area is open to over-snow vehicles in the inventory area which could have some influence on solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-76. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	2,774 acres (56%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	328 acres (7%)

Describe the types of primitive recreation activities in the area.

The types of primitive recreation consist of hiking, backpacking, snowshoeing and exploring portions of the inventory area. Area is close to communities and easily accessible with closest trailhead into the Mission Mountains Wilderness.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-77. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	2 miles (12%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There are no known existing whitebark pine dominance type in the area. There are several hundred acres above 6,000 feet elevation that could potentially support whitebark pine.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	Includes Fatty Creek Fen (0.74 acres)
Minimally represented or rare vegetation types in region ⁶	Presence of a rare plant: <i>Scheuchzeria palustris</i> (Pod Grass) Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	6 acres (<1%) of level 3/4.
Acres of key conservation areas for wolverine ⁸	267 acres (5%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	11 acres (<1%) of habitat
Narrative of coarse scale key connectivity for multiple species ¹⁰	High connectivity for wolverines between Mission and Swan Range, key for grizzly bear, NA for lynx.

Question 3b

Is there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-78. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value	2,552 acres (51%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	266 acres (5%)

Describe if there are any caves or unique geologic features in the area.

To our knowledge, there are no caves or unique geologic features present in the inventory area.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports brook trout and some westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-79. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-80. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. Western boundary is adjacent to the Mission Mountains Wilderness and follows section lines. The northern tier is a whole section and follows section lines. The eastern boundary is adjacent to past harvest units and open roads.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 22 (wilderness), MA 15 (timberlands), MA 2 (unroaded). Adjacent to the Swan State Forest.
Describe the current management of the area.	9 miles of closed roads; <1 mile of terra ¹¹ trails (0 miles motorized); 9 miles motorized over-snow routes; 2,509 acres (51%) allow motorized over-snow. 36% MA 2 (unroaded); 64% MA 15 (timberlands)

Measures	Outcome
Acres and % total of wildland urban interface in the area.	19 ac (<1%)
Type and extent of management restrictions within the area.	No bull trout critical habitat. 4,963 acres (100%) of lynx critical habitat 2,708 acres (55%) of grizzly bear security core. 327 acres (7%) of Mission Addition #01501 inventoried roadless area.

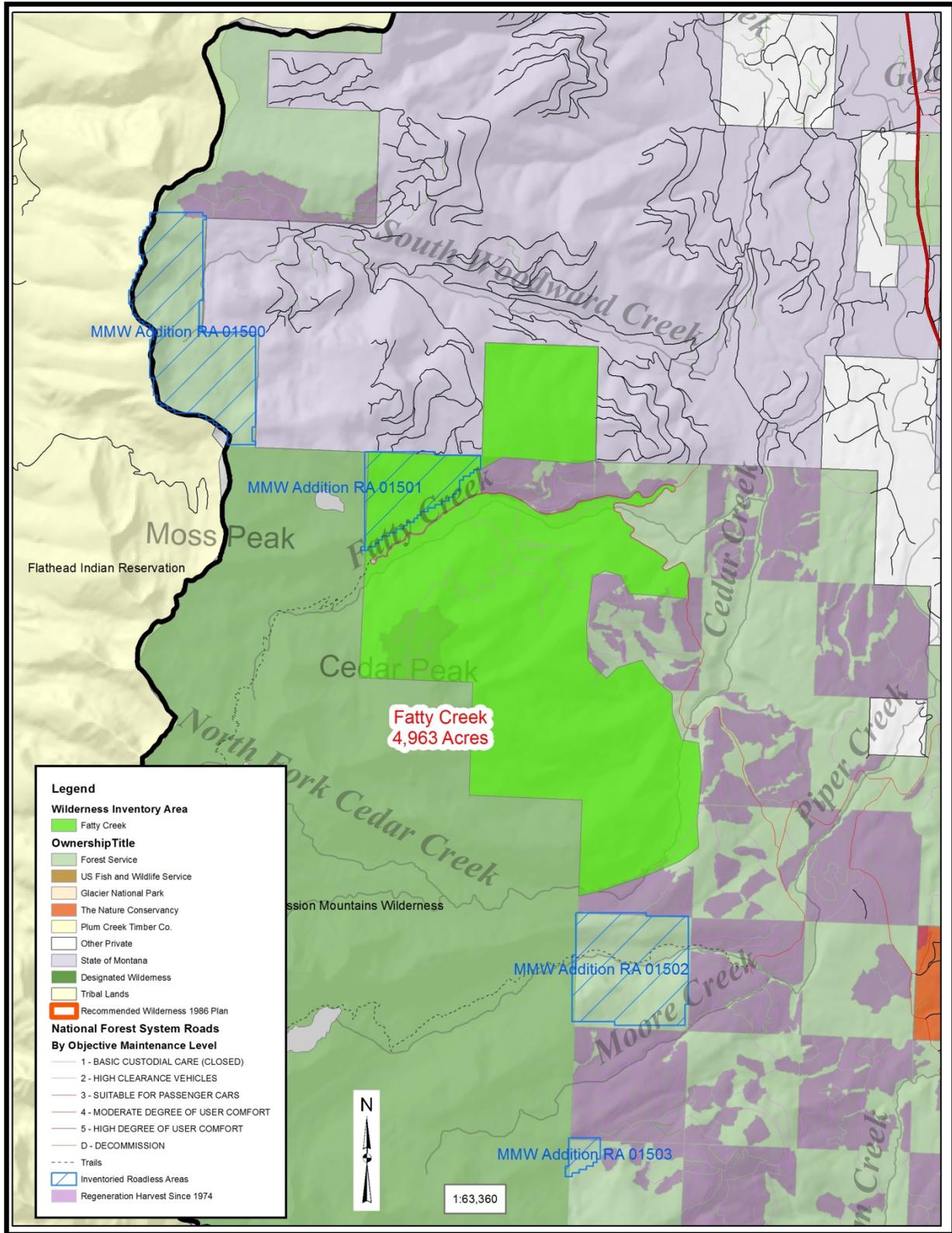


Figure F-11. Fatty Creek wilderness inventory area

Glacier Creek Area

A total of 2,590 acres was included in the Glacier Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-12 shows the Glacier Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 95% western larch, lodgepole pine (Douglas-fir), common types on the Flathead NF. Potential vegetation types: 98% cool types, supporting mixed conifer forests typical of the types.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-81. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	97%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	99%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

The Brown-headed cowbird is the only non-native or parasitic wildlife species present. Weeds are limited to roads, within and surrounding area, and in some small concentrations adjacent to roads within the area. There is a low to moderate probability of weeds in other portions of area.

The primary stream in this area is Glacier Creek which support invasive brook trout.

There are past harvest units (90 acres), and associated road building and skid trails. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation

within this inventory area is primarily affected by natural ecological processes, including fire (~87% of area burned in 1919; 5% in 2003). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-82. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Limited harvesting occurred, mostly in 1960, and 1965, along west edge. Now densely stocked with trees. Harvest units and roads/skid trails not visible with the exception of the 1989 clearcut unit (17 acres) in the north part of area and associated roads, which are substantially noticeable.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-83. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	2,573 acres (99%)
Area and % total available for winter non-motorized opportunity	1,885 acres (73%)

Portions of this area provide for outstanding opportunity for solitude. There is an abundance of vegetation providing screening to sight on the slope. Glacier Slough Trail #481 is located within the inventory area and is a moderately used trail. Lindbergh Lake is about 1 to 1.5 miles away and road #561 is close to the northern and western boundaries. Solitude could be influenced due to the proximity of motor boats on Lindbergh Lake and road #561 but would not be pervasive.

There is 1 mile of over-snow routes and about 27% of the area is open for motorized over-snow use which may influence solitude but would not be a pervasive impact.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-84. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	494 acres (19%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	1,783 acres (69%)

Describe the types of primitive recreation activities in the area.

Primitive recreation activities include bird watching, nature wildlife viewing, camping, hiking, and snowshoeing.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-85. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	6 miles (74%).
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	No existing known whitebark pine and no potential whitebark pine habitat.
Acres and number of water howellia (listed as threatened species under the ESA) fens and bogs	None
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	41 acres (2%) of level 3/4.
Acres of key conservation areas for wolverine ⁸	None
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for grizzly bear, low for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-86. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	1,833 acres (71%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	0 acres

Describe if there are any unique geologic features in the area.

Glacier Slough is a unique botanical feature located within this inventory area. This large wetland area and associated adjacent forests was rated to be of “outstanding significance” by MT Natural Heritage Program. The slough is also considered a proposed special area in the forest plan and a proposed eligible wild and scenic river in the proposed action.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area primarily supports brook trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed, which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-87. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, no known scientific or education features are located within this inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-88. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. A small portion of the southwest boundary is adjacent to the Mission Mountains Wilderness. Northern boundary follows FS road #561. Eastern boundary is adjacent to past harvest units and also follows section lines.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 15c (timberlands, white tailed deer summer range), MA 1 (non-forested), MA 2A (unroaded for dispersed recreation), MA 7 (timberlands with high scenic value), MA 22 (Mission Mountains Wilderness). Past Plum Creek land is adjacent to the eastern boundary and is heavily roaded and harvested.
Describe the current management of the area.	3 miles of closed roads; 1 mile of terra ¹¹ trails (0 miles motorized); 1 mile of motorized over-snow routes; 705 acres (27%) allow motorized over-snow. 67% MA 2 (unroaded for dispersed recreation); 7% MA 7 (timberlands with high scenic value); 7% MA 12 (riparian habitat); 20% MA15 (timberlands)
Acres and % total of wildland urban interface in the area.	13 acres (< 1%)
Type and extent of management restrictions within the area.	No bull trout critical habitat. 2,590 acres (100%) of lynx critical habitat 0 acres of grizzly bear security core. 0% in inventoried roadless area

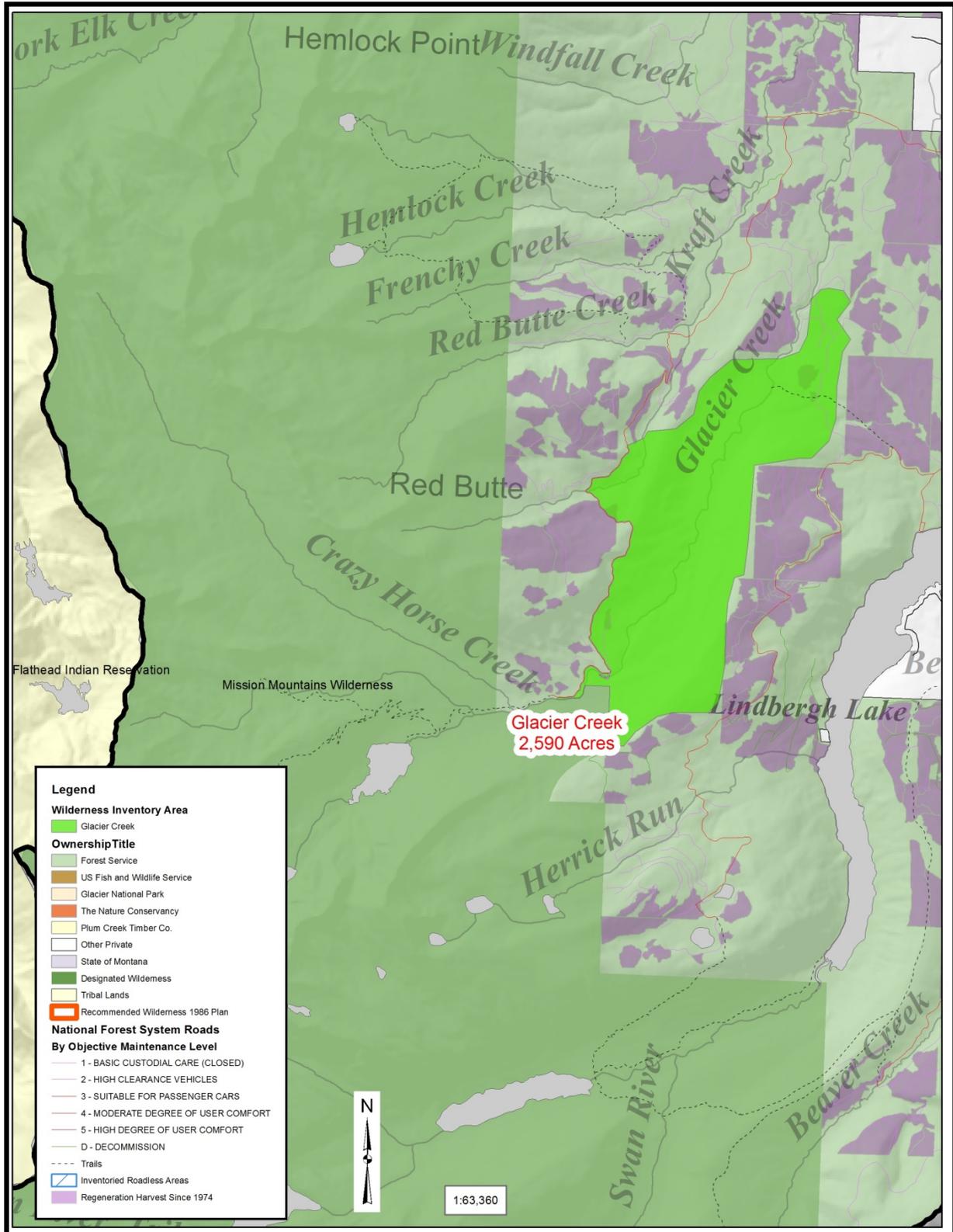


Figure F-12. Glacier Creek wilderness inventory area

Hungry Horse Reservoir East Area

A total of 36,935 acres was included in the Hungry Horse Reservoir East wilderness inventory area. This area is located on the Spotted Bear and Hungry Horse–Glacier View Ranger District. Figure F-13 shows the Hungry Horse Reservoir East wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 78% Douglas-fir, subalpine fir, larch, lodgepole pine; common types on the Flathead NF. About 20% high elevation is sparse vegetation types, supporting whitebark pine in some areas.

Potential vegetation types: cool/cold types dominate, supporting typical mixed conifer forests. There are some smaller pockets of warm dry types (ponderosa pine/Douglas-fir) and warm moist grand fir types in the inventory area. There is no substantial ponderosa pine or western red cedar in the area.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-89. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	90%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	99%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. There has been past harvest units on 3,878 acres as well as associated road building/skid trails in the area along the western edge of the area that include areas of concentrated harvest activity. Forest composition, structure, patterns in harvest areas

have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~60% of area burned 1903-1929). There are substantial areas that were prescribed burned from 1998 to 2014 to create more diverse forest structure, improve habitat and whitebark pine regeneration, and reduce fuel loadings. There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

There are weeds present along most roads, within and adjacent to area, especially large concentration in the Murray/Deep Creek area. There is moderate probability of weeds within the area, particularly near roads.

This area contains numerous watersheds. There are no bull trout populations within this area and westslope cutthroat trout are abundant and populations are pure. There are no aquatic invasive species within this area.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-90. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable.	Most harvest occurred in the 1950s and 60s on gentle slopes. These harvest areas are now densely stocked with trees, shrubs, and not visible. In most cases, the associated historic road templates and skid trails are not evident from mid- or background view, and those on gentle slopes. A few areas (e.g., Emery, Margaret, Tiger, Unawah, Deadhorse creeks) have units on steep slopes, where some road templates are still visible in foreground view.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	Baptiste Lookout houses the USFS Baptiste Radio Repeater
Areas of historic mining where impacts are not substantially noticeable.	Baptiste Mine
Areas of mining activity where impacts are not substantially noticeable.	Baptiste Mine
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None

Improvement Type	Extent of departures
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Baptiste Lookout

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-91. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity.	36,873 acres (100%)
Area and % total available for winter non-motorized opportunity	22,283 acres (60%)

Portions of the inventory area provide for outstanding opportunities for solitude. The majority of the eastern boundary is adjacent to the Great Bear Wilderness. Topography and vegetation provide screening to sights and sounds. About 75% of the area is within an inventoried roadless area (IRA) (Bear-Marshall-Scapegoat-Swan IRA #1485). As you move downslope towards the Hungry Horse Reservoir, there may be more sights and sounds from the reservoir and the Hungry Horse Road that may be pervasive during peak summer time use. The very northern portion of the area is adjacent to US HWY 2 and adjacent to a private airstrip (Ryan Field). There are 4 miles of over-snow routes and 40% of the area is open to over-snow vehicles which may influence solitude but not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-92. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive classes for summer recreation opportunity spectrum.	30,691 acres (83%)
Acres and % total of primitive and semi-primitive classes for winter recreation opportunity spectrum.	21,822 acres (59%)

Describe the types of primitive recreation activities in the area.

Primitive recreation opportunities in the area include hiking, backpacking, horseback riding, fishing, hunting, and gathering forest products such as huckleberries. Winter recreation opportunities include cross country skiing, snowshoeing and backcountry skiing. There is 15 miles of non-motorized trails for hiking and horseback riding.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-93. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	15 miles (16%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is about 300 acres of mapped existing whitebark pine dominance type in this area. Substantial area >6,000 feet, extending up to 7,400 feet elevation, which is suitable and favorable habitat for whitebark pine. About 1,300 acres mapped whitebark pine potential vegetation type. Genetically superior whitebark pine trees are identified on Desert Mountain and provide seed for whitebark pine tree improvement and restoration programs.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	One unoccupied pond, 0.8 acres
Minimally represented or rare vegetation types in region ⁶	The presence of 2 rare plants: <i>Botrychium sp.</i> (Moonworts), <i>Mimulus ampliatus</i> (Stalk-leaved Monkeyflower) Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	10,398 acres (28%) of level 3/4
Acres of key conservation areas for wolverine ⁸	11,749 acres (32%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	1,955 acres (5%) of habitat.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Low-high for wolverine, moderate for grizzly bear, moderate for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-94. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	32,973 acres (89%)

Measures	Outcome
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72 75	5,733 acres (16%)

Describe if there are any caves or unique geologic features in the area.

No know cave resources or unique geologic features within the area.

Question 3c

Are there historic or cultural resources of historic value in the area?

Baptiste Lookout.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout in Hungry Horse Reservoir and pure westslope cutthroat trout throughout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-95. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0 acres

Question 3f

Are there any scientific or education features in the area?

Whitebark pine plus trees¹ identified which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-96. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. Long and narrow and adjacent on the eastern boundary to the Great Bear Wilderness. Portions of the western boundary are adjacent to previously harvested areas and roads.

Measures	Outcome
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 21 Great Bear Wilderness is adjacent to the inventory area. MA 15 timber lands that have previous harvested areas and roads. To the north are private lands with residential homes and a private airstrip (Ryan Field).
Describe the current management of the area.	8 miles closed roads; 25 miles decommissioned or historical roads; 15 miles terra ¹¹ trails (0 miles motorized); 4 miles motorized over-snow routes; 14,652 acres (40%) allow motorized over-snow. 1% MA 1 (non-forested); 33% MA 2 (unroaded); 7% MA 12/17 (riparian habitat); 24% MA13 (timberlands an mule deer/elk winter habitat; 34% MA 15/16 (timberlands);
Acres and % total of wildland urban interface in the area.	3,537 acres (10%)
Type and extent of management restrictions within the area.	No bull trout critical habitat. 35,991 acres (97%) of lynx critical habitat 29,548 acres (80%) of grizzly bear security core 27,565 acres (75%) of Bear-Marshall-Scapegoat-Swan inventoried roadless area #1485

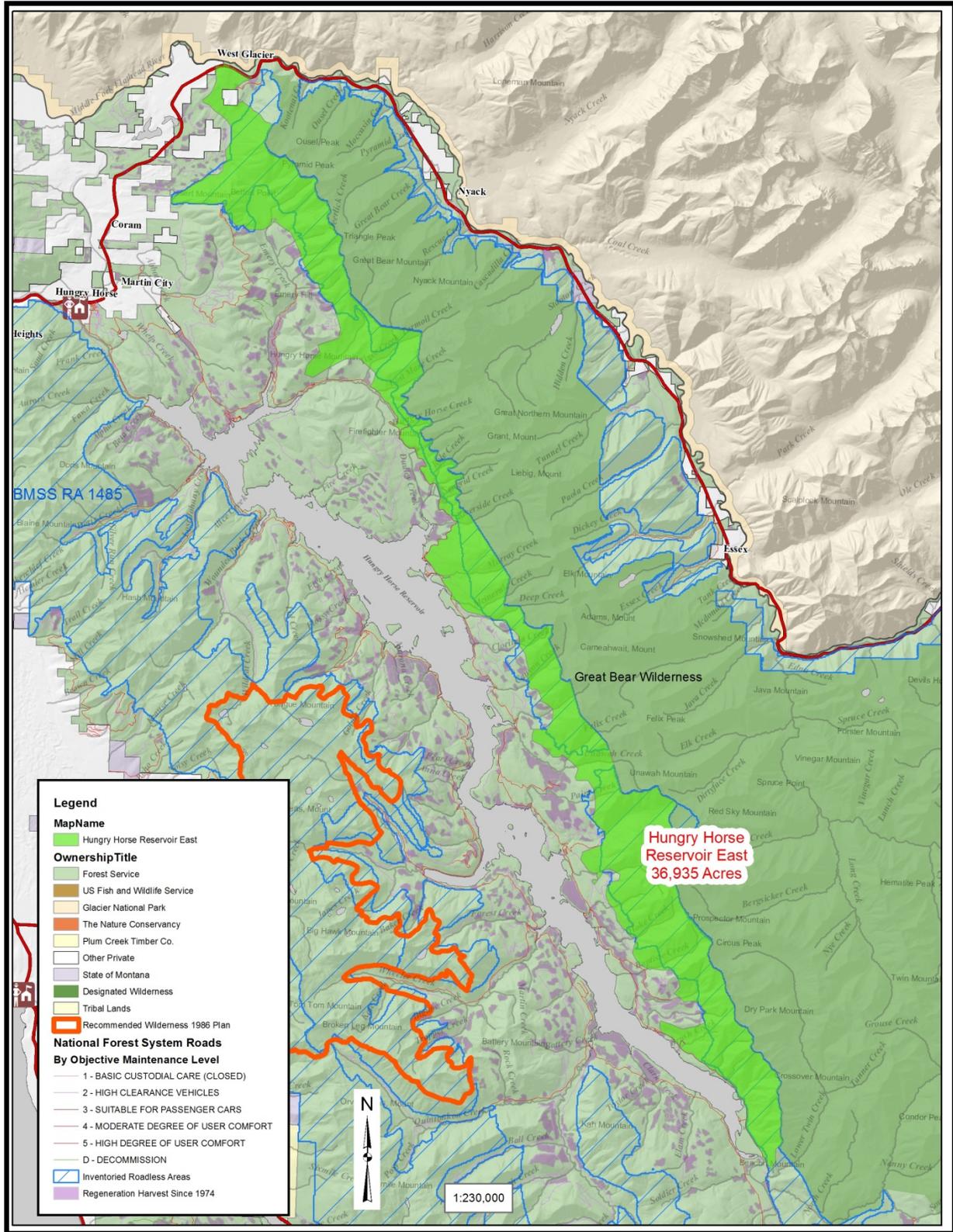


Figure F-13. Hungry Horse Reservoir East wilderness inventory area

Hungry Horse Reservoir West Area

A total of 178,435 acres was included in the Hungry Horse Reservoir West wilderness inventory area. This area is located on the Hungry Horse–Glacier View, Spotted Bear and Swan Lake Ranger Districts. Figure F-14 shows the Hungry Horse Reservoir West wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 85% subalpine fir, Douglas-fir, larch and lodgepole pine; common types on the Flathead NF. About 15% of the area is in high elevation sparse vegetation and avalanche chutes.

Potential vegetation types: cool/cold types dominate, supporting typical mixed conifer forests. There are substantial areas of warm moist grand fir, cedar, western hemlock, and western white pine types; and warm dry Douglas-fir/ponderosa pine types in lower elevations facing into the Flathead Valley (west side of inventory area).

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-97. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	92%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

The Brown-headed cowbird at survey point in southwest portion of area is the only non-native or parasitic wildlife species present. Past harvest units (15,131 acres), are throughout area in lower/mid

elevations with several relatively small areas of concentrated past harvest activity. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~20% of area burned 1910-1929; ~11% recent fire, most in 2003). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

There are weeds present along most roads. There is a low probability of weeds within most remaining area - remote, moist/cold sites with the exception in areas adjacent to Flathead Valley, where weed infestations on private lands exist.

There are numerous watersheds within this area. There are no aquatic invasive species. Bull trout are present in Wounded Buck, Sullivan, Quintonkon, and Bunker creeks. Pure westslope cutthroat trout exist throughout the area.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-98. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Most harvesting occurred in the 1950s and 1960s and mostly on gentle slopes in bottom of drainages. These are fully reforested, and not visibly except for some of the associated road templates and skid trails/jammer roads. These are noticeable in foreground in some areas (e.g., Connor Creek), less evident in mid or background views. The exception is in recently burned areas (Quintonkin and Sullivan creeks), where fire has exposed existing/historic roads templates. The majority of road templates in some areas (especially steeper slopes) are evident on the landscape.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	MT Aeneas electronic site on the edge of Jewel Basin.
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None

Improvement Type	Extent of departures
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Historic Native American travel corridor through Jewel Basin and near Sullivan Creek. Pioneer and Battery Mountain Lookout remains. Existing Trinkus FS guard station structure. Crevice FS Guard Station remains.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-99. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity.	177,604 acres (100%)
Area and % total available for winter non-motorized opportunity	40,477 acres (23%)

There are portions of this inventory area that provide for outstanding opportunities for solitude; especially as you leave the western boundary as almost the entire western boundary of the area is adjacent to private land. In this area, the sights of human activities and settlements may influence solitude from the area in the west but is not pervasive. About 79% of the area is with an inventoried roadless area (IRA) (Bear-Marshall-Scapegoat-Swan IRA #1485).

The Jewel Basin Hiking Area is in a portion of this inventory area and has been managed as wilderness, therefore providing outstanding opportunities for solitude. Some mainline trails have high use but there are many opportunities off mainline trails for solitude.

In the winter, there is 67 miles of over-snow routes and about 77% of the inventory area is open to over-snow vehicle use. This may influence solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-100. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	136,896 acres (77%)

Measures	Outcome
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	39,953 acres (22%)

Primitive recreation opportunities in the area include hiking, backpacking, horseback riding, hunting, fishing, forest product gathering, cross country skiing, snowshoeing, and backcountry skiing. There are numerous alpine lakes in this area, mostly in the Jewel Basin Hiking Area, that offer recreation opportunities in an alpine lake environment. This area also offers hiking and horseback riding along almost the entire Swan Crest on Trail # 7. There are 223 miles of terra¹¹ trails (132 miles non-motorized use).

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-101. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	71 miles (14%)
Acres of whitebark pine whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	Though only 300 acres of mapped existing whitebark pine, there are many thousands of acres of area potentially capable of supporting whitebark pine. As well as a substantial amount of high, sparsely vegetated, harsh sites that are favored by whitebark pine. Nearly 20,000 acres of mapped whitebark pine potential veg. type. Genetically superior whitebark pine plus trees ¹ are identified in head end of Beta/Doris Creek, and provide seed for whitebark pine tree improvement and restoration programs.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	<p><i>The presence of the following rare plants:</i> <i>Callicladium haldanianum</i> (Callicladium moss), <i>Epipactis gigantea</i> (Giant Helleborine), <i>Collema curtisporum</i> (Jelly Lichen), <i>Lobaria hallii</i> (A Lichen), <i>Cypripedium parviflorum</i> (Small Yellow Lady's-slipper), <i>Aloina brevirostris</i> (Aloina moss), <i>Ambloyodon dealbatus</i> (Ambloyodon moss), <i>Castilleja cervina</i> (Deer Indian Paintbrush), <i>Asplenium trichomanes</i> (Maidenhair Spleenwort), <i>Lathyrus bijugatus</i> (Latah Tule Pea)</p> <p>Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.</p>

Measures	Outcome
Species richness % of total acreage ⁷	33,678 acres (19%) of level 3/4
Acres of key conservation areas for wolverine ⁸	86,229 acres (48%) of very high maternal habitat
Acres of key conservation areas for mountain goat ⁹	8,445 acres (5%) of habitat
Narrative of coarse scale key connectivity for multiple species ¹⁰	Portion key for wolverines, high for grizzly bear, Noisy Creek to north end of reservoir high for lynx, southern portion has high radioed lynx use.

Question 3b

Is there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-102. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	134,327 acres (75%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	54,962 acres (31%)

Describe if there are any caves or unique geologic features in the area.

No know cave resources exist within the area. The Jewel Basin Hiking Area exist within this inventory area and has outstanding alpine scenery.

Question 3c

Are there historic or cultural resources of historic value in the area?

There is a historic Native American travel corridor through Jewel Basin and near Sullivan Creek. Pioneer and Battery Mountain lookout remains. There is an existing Trinkus FS guard station structure; Crevice FS Guard Station remains.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-103. Measures for 3e

Measure	Outcome
Acres and % of total of special areas or research natural areas.	Jewel Basin Hiking Area 15,356 acres (9%)

Question 3f

Are there any scientific or education features in the area?

Whitebark pine plus trees¹ identified which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-104. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shaped area. Numerous roads (13) that are not within the area but have a 33 foot buffer on either side of the road that create a cherry stem into the area.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 15 (timberlands), private lands
Describe the current management of the area.	71 miles closed roads; 31 miles decommissioned or historical roads; 223 miles terra ¹¹ trails (91 miles motorized); 67 miles over-snow routes; 137,958 acres (77%) allow motorized over-snow; 1% MA 1 (non-forested lands); 36% MA 2 (unroaded); 7% MA 3 (non-forested); 5% MA 7 (timberlands in high scenic value); 11% MA 11C (grizzly bear); 4% MA12/17 (riparian); 5% MA 13 (timberlands in mule deer and elk winter habitat); 21% MA 15/16 (timberlands); 9% MA 19 (Jewel Basin Hiking Area).
Acres and % total of wildland urban interface in the area.	31,209 acres (17%)
Type and extent of management restrictions within the area.	14 miles of bull trout critical habitat (3 different streams). 174,796 acres (98%) of lynx critical habitat 121,863 acres (68%) of grizzly bear security core 141,624 acres (79%) of Bear-Marshall-Scapegoat-Swan inventoried roadless area #1485

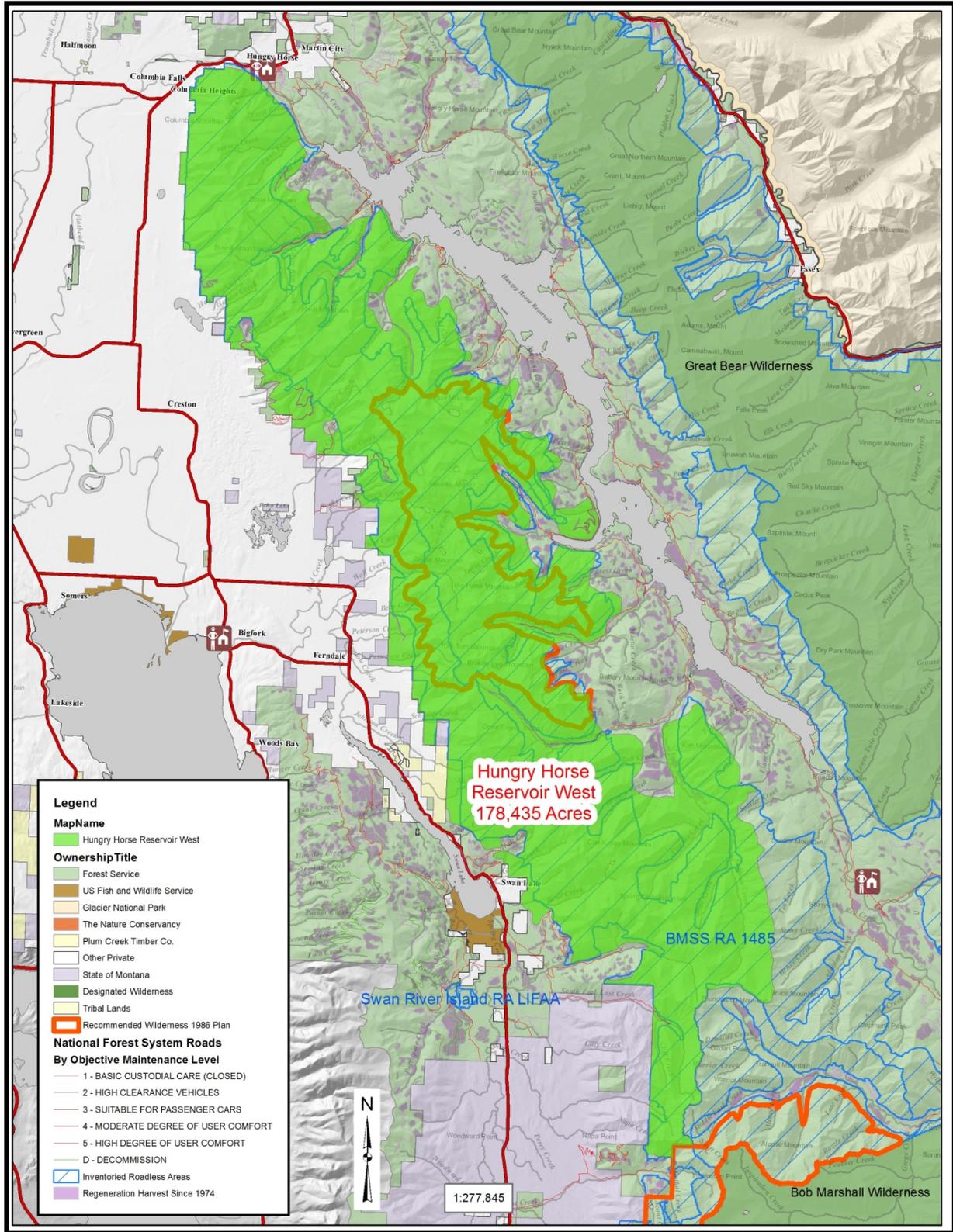


Figure F-14. Hungry Horse Reservoir West wilderness inventory area

Jim Creek Area

A total of 1,509 acres was included in the Jim Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-15 shows the Jim Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 98% subalpine fir, Douglas-fir, western larch, (lodgepole pine), common types on the Flathead NF.

Potential vegetation types: ~60% cool/cold types, supporting mixed conifer forests typical of these types. In the south half there is 38% warm moist primarily cedar vegetation type that likely support forests that contain cedar, and possibly large, old cedar in riparian areas, a relatively rare type on the Flathead NF. The potential also exists for grand fir, western hemlock, and western white pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-105. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	93%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	99%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads. All roads surrounding the area are known infestations. There is a moderate probability of weeds within area.

Portions of the area have past harvest (112 acres), associated road building and skid trails. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes. There have been no known major fires in the past 120 years. There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

The primary stream in this area is Jim Creek which supports bull trout, westslope cutthroat trout and invasive brook trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-106. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Clearcut/seedtree harvests from 1987 to 2000 are present, all substantially noticeable. Some are small areas/slivers along the boundary of the area, but two units are larger and within the area.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.

Improvement Type	Extent of departures
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-107. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	1,497 acres (99%)
Area and % total available for winter non-motorized opportunity	106 acres (7%)

Portions of this area provide for outstanding opportunities for solitude. The area lends itself to solitude due in the summer to the limited amount of roads in the inventory area; roads that are located within the inventory area are closed yearlong. About 3% is within the Mission Addition inventoried roadless area #01503. The northern section is adjacent to the Mission Mountains Wilderness. There is an abundance of vegetation providing screening to sight.

The northeastern boundary is about ½ mile away from private lands with residential structures. There are 2 miles motorized over-snow routes and about 93% of the area allows motorized over-snow. This could influence solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-108. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	181 acres (12%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	0 acres (0%)

Describe the types of primitive recreation activities in the area.

Primitive recreation opportunities include hiking, wildlife viewing, backpacking, snowshoeing, backcountry skiing and camping.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-109. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	1 mile (36%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	No known existing whitebark pine dominance type. Small area (~200 acres) that could potentially support whitebark pine, regions >6,000 feet elevation.
Acres and number of water howellia (listed as threatened species under the ESA) fens and bogs	None
minimally represented or rare vegetation types in region ⁶	Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	67 acres (5%) of level 3/4
Acres of key conservation areas for wolverine ⁸	308 acres (20%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	High connectivity for wolverines between Mission and Swan Range, key for grizzly bear, NA for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-110. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	1,182 acres (78%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	32 acres (2%)

Describe if there are any unique geologic features in the area.

To our knowledge, no caves are present within the inventory area.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. Class 2 watersheds exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. Jim Creek has been rated as a class 2 watershed due to some impairment.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-111. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-112. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape and narrow. Western boundary is adjacent to the Mission Mountains Wilderness. Southern and northern boundaries follow past harvest units and section lines. Eastern boundary follows section line.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 22 (Mission Mountains Wilderness), MA 15 (timberlands). About ½ mile away from the eastern boundary is private lands with residents.
Describe the current management of the area.	2 miles of closed roads; 2 miles motorized over-snow routes; 1,403 acres (93%) allow motorized over-snow; 9% MA1 (nonforest lands); 2% MA12 (riparian); 89% MA15 (timberlands)
Acres and % total of wildland urban interface in the area.	4 acres (<1%)

Measures	Outcome
Type and extent of management restrictions within the area.	1 mile of bull trout critical habitat (1 stream). 1,509 acres (100%) of lynx critical habitat 152 acres (10%) of grizzly security core. 46 acres (3%) of Mission Addition inventoried roadless area #01503

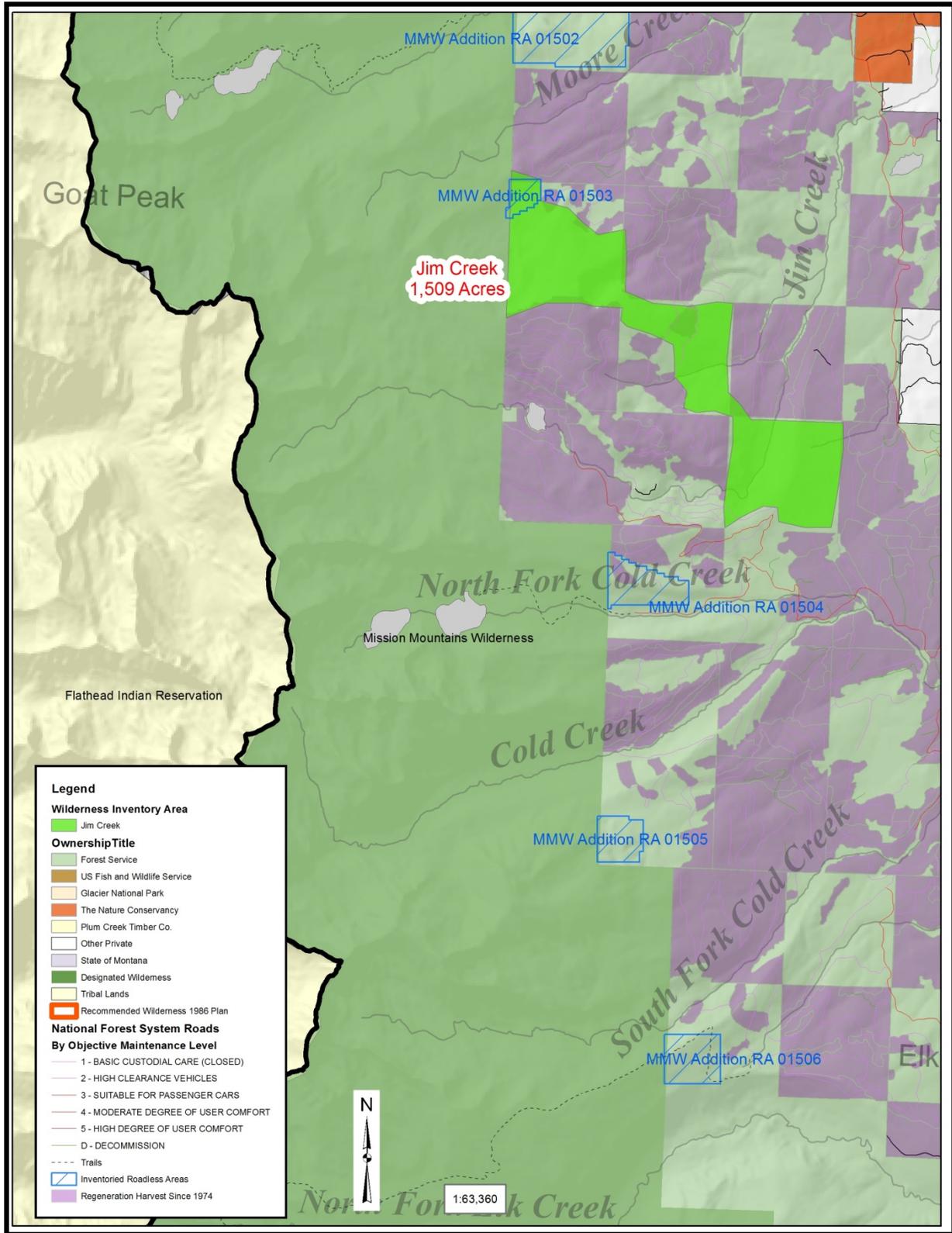


Figure F-15. Jim Creek wilderness inventory area

LeBeau Area

A total of 6,340 acres was included in the LeBeau wilderness inventory area. This area is located on the Tally Lake District. Figure F-16 shows the LeBeau wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 97% Douglas-fir, western larch - common types on the Flathead NF. There is a small amount of dry type (ponderosa pine). Potential vegetation types: 58% warm moist types, capable of supporting cedar but the presence and amount of cedar on these sites is unknown. The potential also exists for grand fir, western hemlock, and western white pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-113: Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	96%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There is no non-native or parasitic wildlife species present. There is a low amount of past harvest and road building (272 acres). Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire, and there may be some influence on forest conditions due to fire suppression. There are no known major fires in the past 120 years. There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads,

including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g. dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Non-native invasive species limited to roads. There is a low probability of weeds within remaining area - remote, moist/cold sites.

The only stream in the area is Le Beau Creek. The only trout species present is brook trout. There are no other aquatic invasive species.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-114. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable.	Past harvest on very gentle slope, limited roads, fully reforested, not visibly.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	Bonneville powerline just barely comes into the polygon in section 15.
Areas of historic mining where impacts are not substantially noticeable.	Not present
Areas of mining activity where impacts are not substantially noticeable.	Not present
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	Not present
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	Finger Lake Trailhead right on the boundary in section 23
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	Bonneville powerline just barely comes into the polygon in section 15.
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	No past watershed treatments are in this area.
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-115: Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	6,335 acres (100%)
Area and % total available for winter non-motorized opportunity	5,590 acres (88%)

The majority of this inventory area provides outstanding opportunities for solitude. About 98% of the area is within an inventoried roadless area (IRA) (Le Beau IRA). The topography of the Le Beau area is characterized by ridgetops and cliffs formed by glacier scouring. The NE corner of the inventory is adjacent to private lands; the mainline of Burlington RR in less than ¼ mile as well as US highway 93. The combination of topography and vegetation allows for a high degree of screening, and diminishes the noise from Highway 93 on the northern boundary and the Burlington Railroad. In the eastern boundary, the Stillwater State Forest and Upper Stillwater Campground are close to the inventory area which may influence solitude but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-116: Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive classes for summer recreation opportunity spectrum.	5,242 acres (83%)
Acres and % total of primitive and semi-primitive classes for winter recreation opportunity spectrum.	5,668 acres (89%)

Describe the types of primitive recreation activities in the area.

Two non-motorized trails exist in the area and receive moderate use. Finger Lake receives moderate day use in summer and ice fishing use in winter. Fire Lakes and Lagoni Lake receive low use. Most of the area is broken terrain without trails which limits use in the interior of the area. Camping, hiking, fishing and hunting opportunities exist in the area. No winter motorized use on Flathead NF – swimming/cliff jumping at Finger Lake.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-117: Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	2 miles (9%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	No known or potential whitebark pine sites.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	Includes Toad and Lagoni Lake fens (13 acres)
Minimally represented or rare vegetation types in region ⁶	The presence of two rare plants: <i>Dryopteris cristata</i> (Crested Shieldfern), <i>Scheuchzeria palustris</i> (Pod Grass) Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	No acres of level 3/4.
Acres of key conservation areas for wolverine ⁸	None
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	Not applicable for wolverine, high for grizzly bear, not applicable for mountain goat, moderate connectivity for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, caves or geologic features?

Table F-118: Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	3,664 acres (58%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	0 acres

Describe if there are any unique geologic features in the area.

This area has obvious evidence of glacial activity with glacial grooves and striations on cliffs and exposed ridge tops in the area. There is a large amount of limestone bedrock in the drainages. Large canyons in the area are often bordered by rock cliffs of sandstone, mudstone and limestone. The highest point in the area is Ketowke Mountain at 5,635 feet on the western boundary.

Question 3c

Are there historic or cultural resources of historic value in the area?

None.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area only supports brook trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-119: Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	Le Beau RNA is 5,709 acres; 401 acres on the Kootenai NF, 5,308 acres on the Flathead NF. 84% of this inventory area on the Flathead NF is composed of the LeBeau Research Natural Area.

Question 3f

Are there any scientific or education features in the area?

Le Beau Research Natural Area provides representation of 3 habitat types targeted for representation: Abies grandis/Clintonia uniflora, Thuja plicata/Clintonia uniflora and Picea/Clintonia uniflora.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-120: Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	The shape and configuration is a solid oblong with small nodes on the eastern border. The eastern border of the area is adjacent to the Stillwater State Forest; the northern eastern border is adjacent to private land and the railroad. Highway 93 is within ½ mile. The Northwestern border and western border is adjacent to the Kootenai National Forest.
Describe if there are any legally established rights or uses within the area.	The establishment of the Research Natural Area establishment requested that the Research Natural Area land be removed from mineral entry.
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	½ boundary adjoins the Kootenai NF
Describe the current management of the area.	2 miles closed roads; 3 miles terra ¹¹ trails (0 miles motorized); 1 mile of motorized over-snow routes; 750 acres (12%) allow motorized over-snow. 5% MA 2 (unroaded lands); 75% MA 3A (research natural areas); 12% MA12/17 (riparian); 7% MA 15 (timberlands).

Measures	Outcome
Acres and % total of wildland urban interface in the area.	2,187 acres (34%)
Type and extent of management restrictions within the area.	Le Beau is not in the NCDE. 24 acres of bull trout critical habitat (part of Upper Stillwater Lake). 5,219 acres (82%) of critical lynx habitat. 6,210 acres (98%) is in the Le Beau inventoried roadless area.

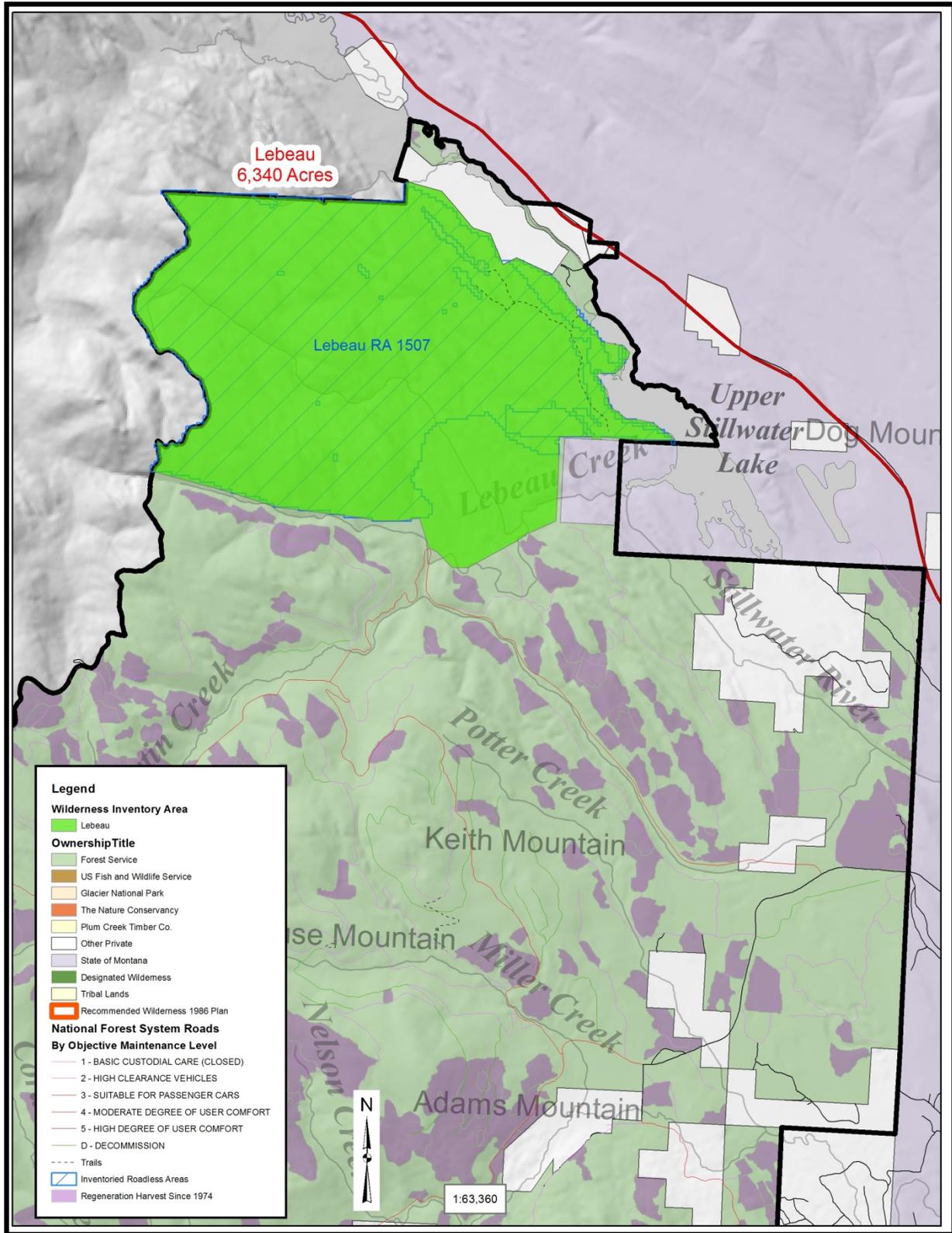


Figure F-16. LeBeau wilderness inventory area

Lindbergh Lake Area

A total of 1,019 acres was included in the Lindbergh Lake wilderness area. This area is located on the Swan Lake Ranger District. Figure F-17 shows the Lindbergh Lake wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 96% Douglas-fir, lodgepole pine, common types on the Flathead NF. Potential vegetation types: cool, moist types, supporting typical mixed conifer forests.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-121. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	94%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	99%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads. There is a low probability of weeds within the area.

There is a low amount of past harvest (62 acres) and road building. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area primarily affected by natural ecological processes, including fire (~66% burned in 1919, no recent fires). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be

lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

The primary watersheds in this area are Lindbergh Lake and Beaver Creek. Lindbergh Lake has recently been invaded by lake trout while Beaver Creek supports brook trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-122. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Small amount of harvest has occurred, mostly in the early 1970s, except for one unit in 2000. Harvest occurred on gentle slopes and ridgetop along southeast boundary of area. The 1970s units are fully reforested and not visible. The 2000 unit is substantially noticeable.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-123. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	1,012 acres (99%)
Area and % total available for winter non-motorized opportunity	749 acres (74%)

Portions of this area provide for very high opportunities for solitude. The area is heavily wooded and steep, buffering some sights and sounds of Lindbergh Lake. The very north boundary is adjacent to private property with numerous residents. Western boundary is adjacent to Lindbergh Lake. There is probability of hearing motor boats and residential noise during the summer.

There is 1 mile of motorized over-snow routes and about 27% of the area allows motorized over-snow which may influence solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-124. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	441 acres (43%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	442 acres (43%)

Describe the types of primitive recreation activities in the area.

Primitive activities include hiking, fishing, camping, hunting and wildlife viewing. Area is heavily wooded and steep sloped. There are 3 miles terra¹¹ trails.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-125. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	<1 mile (<1%)

Measures	Outcome
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	No known existing whitebark pine and no potential whitebark pine habitat.
Acres and number of water howellia (listed as threatened species under the ESA) fens and bogs	None
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	159 acres (16%) of level 3/4
Acres of key conservation areas for wolverine ⁸	None
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	Not applicable for wolverines, key for grizzly bear, Not applicable for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-126. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	730 acres (72%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	0 acres

Describe if there are any unique geologic features in the area.

To our knowledge, no caves are present in the inventory area.

Question 3c

Are there historic or cultural resources of historic value in the area?

None.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and westslope cutthroat trout in Lindbergh Lake. The area has been assessed for watershed conditions under the watershed condition framework. Class 2 watersheds exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. Beaver Creek is a class 2 watershed due to some impairment.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-127. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-128. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. A portion of the western boundary is adjacent to Lindbergh Lake and a portion is adjacent to the Mission Mountains Wilderness. The eastern boundary follows past harvest units.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 2 (unroaded lands), MA 15 (timberlands), MA 11C (grizzly bear habitat), MA 22 (Mission Mountains Wilderness)
Describe the current management of the area.	1 mile of closed roads; 3 miles terra ¹¹ trails (0 miles motorized); 1 mile of motorized over-snow routes; 270 acres (27%) allow motorized over-snow. 43% MA 2 (unroaded lands); 1% MA 12 (riparian); 55% MA 15 (timberlands)
Acres and % total of wildland urban interface in the area.	159 acres (16%)
Type and extent of management restrictions within the area.	8 acres of bull trout critical habitat (part of Lindbergh Lake). 1019 acres (100%) of lynx critical habitat 513 acres (50%) of grizzly bear security core. 0% in inventoried roadless area

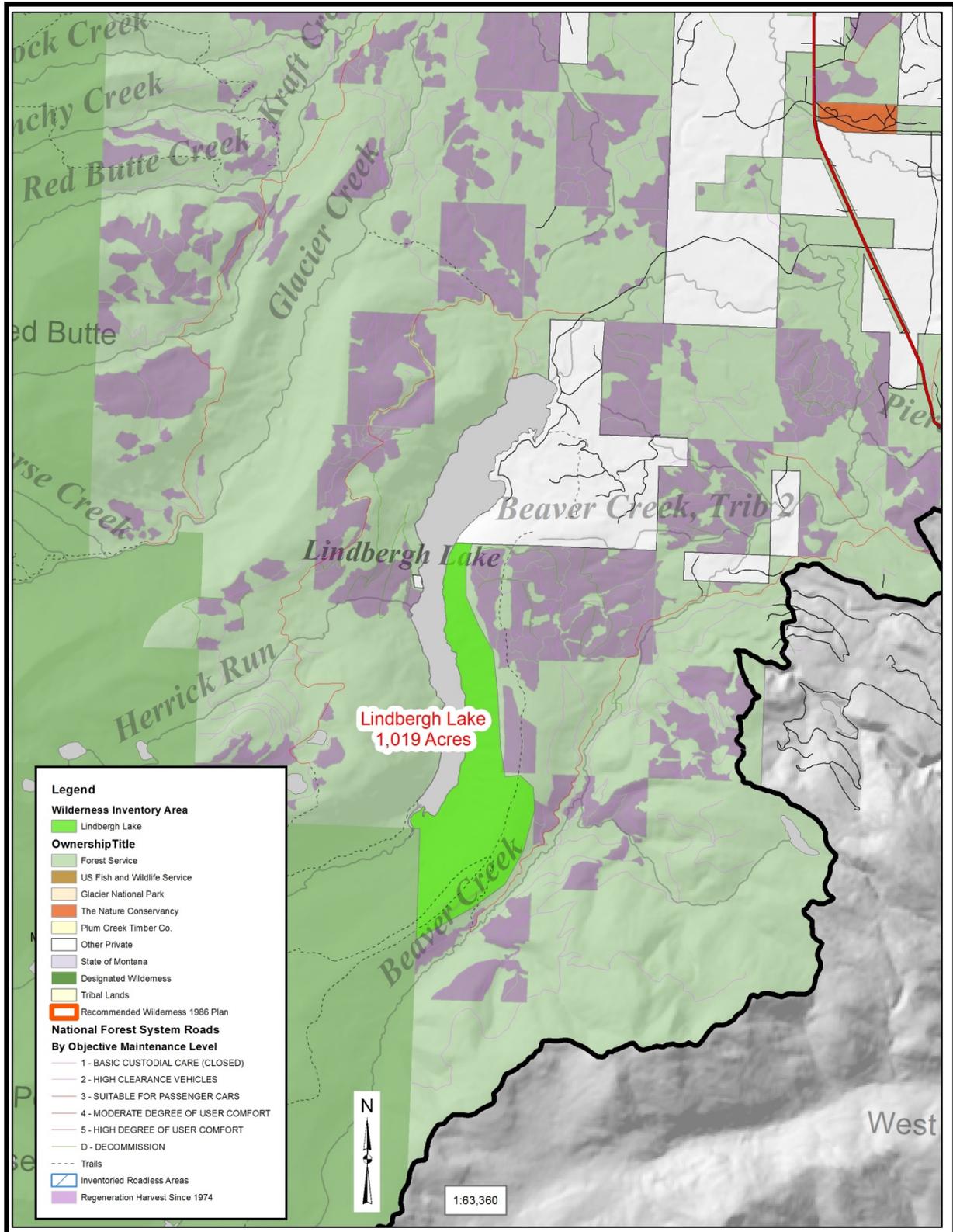


Figure F-17. Lindbergh Lake wilderness inventory area

Meadow Lake Area

A total of 1,033 acres was included in the Meadow Lake wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-18 shows the Meadow Lake wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 99% western larch, Douglas-fir, common types on the Flathead NF. Potential vegetation types: cool moist types, supporting mixed conifer forests typical of this type.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-129. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	82%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	0%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There is no non-native or parasitic wildlife species present. Past harvest, road building, and skid trails has occurred on 183 acres. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~6% burned 2008). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering. There is a low probability of weeds within the area.

This area primarily contains Lindbergh Lake which has been recently invaded by lake trout. Bull trout and westslope cutthroat trout are present.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-130. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest 1953, on very gentle slopes, densely stocked with trees and fully recovered. Not visibly evident in fore-, mid- or background view.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-131. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	1,033 acres (100%)
Area and % total available for winter non-motorized opportunity	587 acres (57%)

Portions of this inventory area provide for very high opportunities for solitude. The southern boundary is adjacent to the Mission Mountains Wilderness. The eastern boundary is adjacent to Lindbergh Lake. As you get closer to the lake, the sounds of motor boats and residential noise during summer months may influence solitude but would not be pervasive. About 43% of the area is open to over-snow vehicles which may influence solitude during the winter but wouldn't be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-132. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	420 acres (41%)
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	601 acres (58%)

Describe the types of primitive recreation activities in the area.

Primitive activities include hiking, fishing, hunting and wildlife viewing. There is 1 mile of hiking/biking trail.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-133. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	1 mile (79%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is no known existing whitebark pine and no potential whitebark pine habitat.
Acres and number of water howellia fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	<1 acre (<1%) of level 3/4
Acres of key conservation areas for wolverine ⁸	None.

Measures	Outcome
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Low for wolverines, key for grizzly bear, NA for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-134. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	733 acres (71%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	None

Describe if there are any unique geologic features in the area.

To our knowledge, no caves or unique geological features present in the inventory area. Views consist of Lindbergh Lake and the Swan Range.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout in Lindbergh Lake. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-135. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-136. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Rectangular in shape, eastern boundary borders Lindbergh Lake. Southern boundary is adjacent to Mission Mountains Wilderness.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 2 (unroaded lands), MA 5 (Roaded timberlands with high scenic value), (MA 12 (riparian), MA 15 (timberlands)
Describe the current management of the area.	<1 mile of closed roads; 1 mile of terra ¹¹ trails (0 miles motorized); <1 mile of motorized over-snow routes; 446 acres (43%) allow motorized over-snow. 35% MA 2 (unroaded lands); 37% MA 5 (roaded timberlands of high scenic value); 2% MA 12 (riparian); 26% MA15 (timberlands)
Acres and % total of wildland urban interface in the area.	181 acres (18%)
Type and extent of management restrictions within the area.	1 acre of bull trout critical habitat (part of Lindbergh Lake). 1,033 acres (100%) of lynx critical habitat. 667 acres (65%) of grizzly bear core. 0% in inventoried roadless area

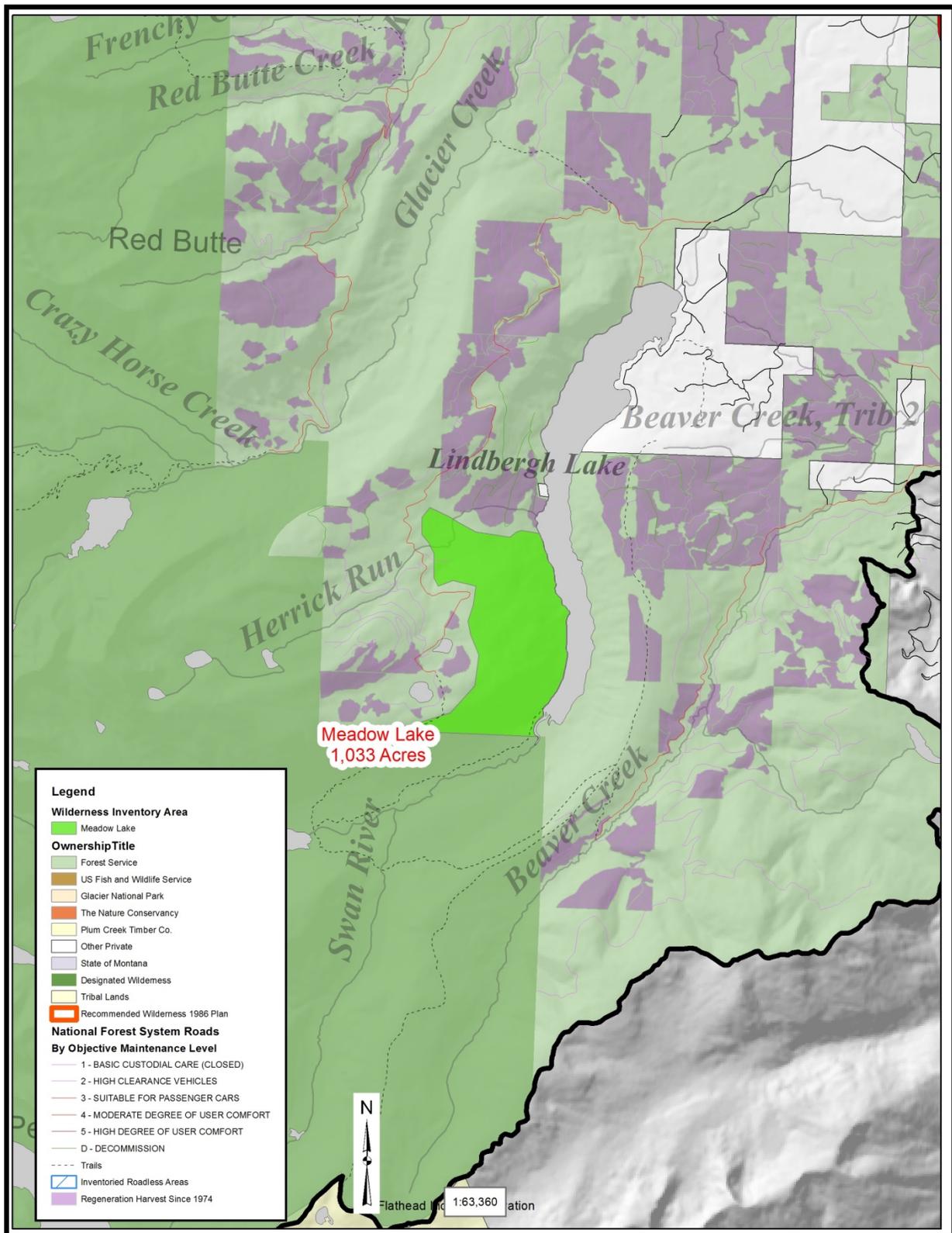


Figure F-18. Meadow Lake wilderness inventory area

North Fork Cold Creek Area

A total of 445 acres was included in the North Fork Cold Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-19 shows the North Fork Cold Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 99% western larch, subalpine fir, Douglas-fir, common types on the Flathead NF. Potential vegetation types: 99% cool moist types the most common type on the Flathead NF, and supports typical diversity of coniferous forest types.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-137. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	47%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	98%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There is no non-native or parasitic wildlife species present. Past harvest has occurred across half of area (237 acres). Roads and skid trails present from harvesting. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes. There has been no known major fire in the past 120 years. There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be

lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Weeds are limited to roads. There is a moderate probability of weeds in remaining area.

The main stream in this area is North Cold Creek which supports hybridized cutthroat trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-138. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest in the 1960s and 1980s on gentle slopes; densely reforested. Harvested areas not visible.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-139. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	445 acres (100%)
Area and % total available for winter non-motorized opportunity	118 acres (27%)

Portions of this area provide for outstanding opportunity for solitude. The topography consists of very steep slopes down to North Fork of Cold Creek. About 26% of the area is within an inventoried roadless area (IRA) (Mission Addition IRA #01504). Opportunities for solitude in the summer may be influenced by FS Road #9599 (which is buffered out 33 feet on either side creates a cherry stem in the inventory area) but would not be pervasive. The inventory area is open to over-snow vehicles (73%) which may influence opportunities for solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-140. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	2 acres (0%)
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	2 acres (0%)

Describe the types of primitive recreation activities in the area.

Primitive recreation activities include hiking, backpacking, wildlife viewing and fishing.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-141. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	1 mile (74%)

Measures	Outcome
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	No known existing whitebark pine and there is no potential whitebark pine habitat
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	No acres of level 3/4.
Acres of key conservation areas for wolverine ⁸	None
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	High connectivity for wolverines between Mission Mountains and Swan Range, key for grizzly bear, NA for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-142. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	320 acres (72%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types ^{17, 54, 55, 72, 75}	0 acres

Describe if there are any unique geologic features in the area.

To our knowledge, no caves or unique geologic features are present in the inventory area. There are views to the Swan Valley and Swan Range.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports hybridized westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. Class 2 watersheds exhibit moderate geomorphic, hydrologic, and biotic integrity relative to their natural potential condition. Cold Creek is a class 2 watershed due to some impairment.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-143. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-144. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape, surrounded by NFS lands. The western boundary is adjacent to the Mission Mountains Wilderness. Road 9599 almost completely bisects the inventory area.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 22 (Mission Mountains Wilderness), MA 15 (timberlands)
Describe the current management of the area.	1 mile of closed roads; <1 mile of terra ¹¹ trails (0 miles motorized); 1 mile of motorized over-snow routes; 327 acres (73%) allow motorized over-snow. 100% MA15 (timberlands)
Acres and % total of wildland urban interface in the area.	0 acres
Type and extent of management restrictions within the area.	1 mile of bull trout critical habitat (1 stream). 445 acres (100%) of lynx critical habitat 27 acres (6%) of grizzly bear security core. 114 acres (26%) of Mission Addition inventoried roadless area #01504.

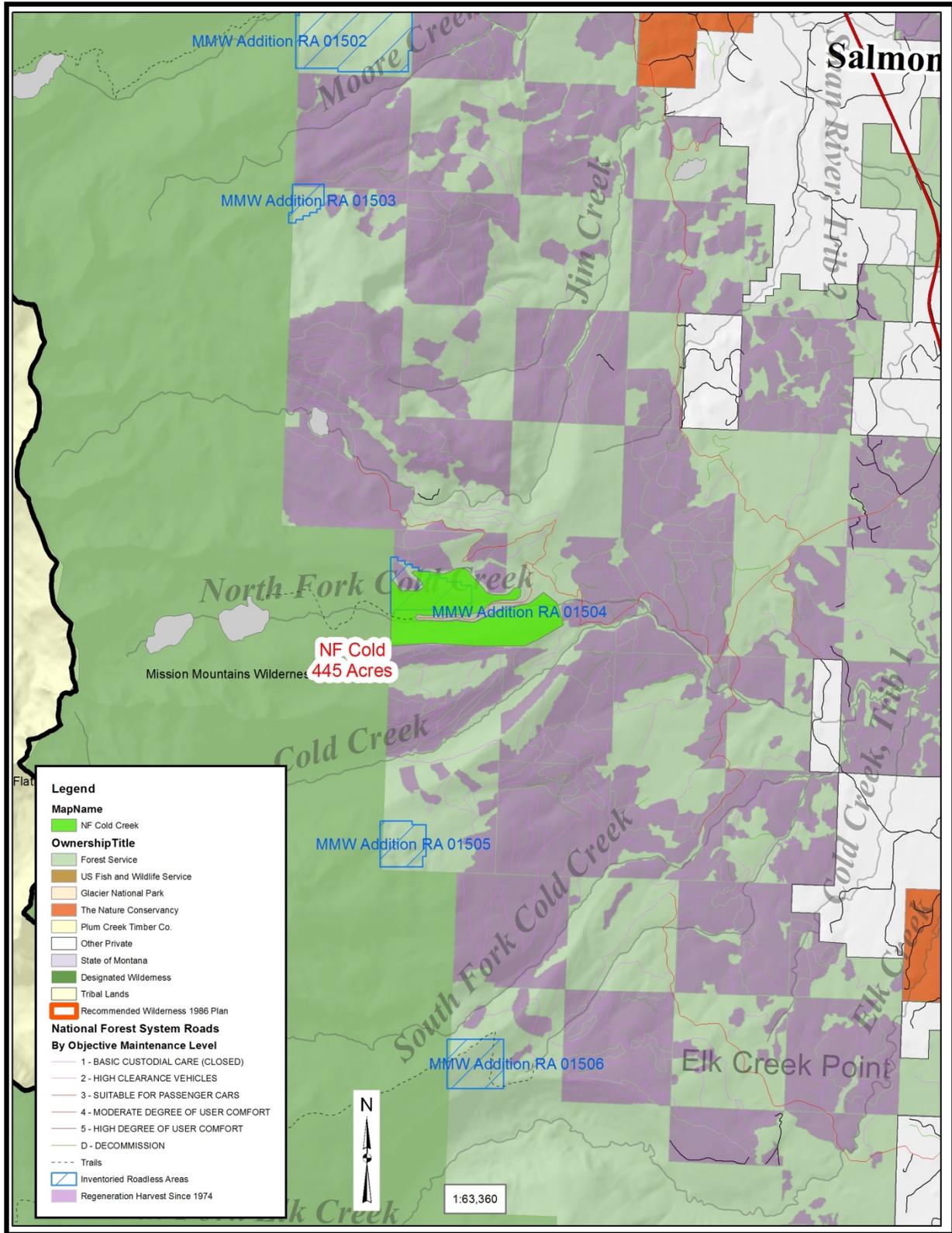


Figure F-19. North Fork Cold Creek wilderness inventory area

Piper Creek Area

A total of 590 acres was included in the Piper Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-20 shows Piper Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation types: 90% larch, lodgepole pine, subalpine fir; common types on the Flathead NF. About 9% (50 acres) is in cedar type, and likely many of these are mature/old stands, a relatively rare type on the Flathead NF.

Potential vegetation types: ~50% cool moist, supporting typical mixed conifer forests. Elevations extend down to 4,400 feet, and large portion of the area (50%) is in warm moist cedar potential veg types, capable of supporting western red cedar. It is unknown how much cedar currently exists on these sites. The potential also exists for grand fir, western hemlock, and western white pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-145. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	100%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	0%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

No non-native or parasitic wildlife species present. No past harvest or road building has occurred in this area. Vegetation reflects the influence of natural processes. There is no known major fire in past 120

years. No known weed infestations within area; infestations on roads surrounding the area. There is a low to moderate probability of weeds within the area from these roads.

The main stream in this area is Piper Creek which supports bull trout, westslope cutthroat trout and invasive brook trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-146. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable.	No past harvest or road building
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-147. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity)	590 acres (100%)
Area and % total available for winter non-motorized opportunity	130 acres (22%)

This area provides for outstanding opportunities for solitude as it is unroaded with one hiking trail (Piper Creek Trail #119) that traverses through the area. It is adjacent to the Mission Mountains Wilderness on the entire west boundary. About 98% of the area is within the in Mission Addition inventoried roadless area (IRA) # 01502.

In the winter, about 78% of the area is open to over-snow vehicle use, which may influence the solitude of the area but not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-148. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	352 acres (60%)
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	126 acres (21%)

Primitive recreation activities are hiking, backpacking, wildlife viewing, and fishing.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-149. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	1 mile (100%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	No known existing whitebark pine, no potential whitebark pine habitat.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	1 acre (<1%) of level 3/4

Measures	Outcome
Acres of key conservation areas for wolverine ⁸	None.
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	High connectivity for wolverines between Mission and Swan Range, low for grizzly bear, NA for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-150. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	483 acres (82%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 77	62 acres (11%)

Describe if there are any unique geologic features in the area.

To our knowledge, there are no caves or unique geologic features are present in the inventory area.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-151. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-152. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	A section (26) adjacent to the Mission Mountains Wilderness on the west boundary. Adjacent on NFS lands on the 3 other boundaries.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 2 (unroaded lands), MA 15 (timberlands), MA 22 (Mission Mountains Wilderness)
Describe the current management of the area.	no roads; 1 mile of terra ¹¹ trails (0 miles motorized); 0 miles motorized over-snow routes; 459 acres (78%) allow motorized over-snow; 10% MA1 (non-forested); 22% MA 2 (unroaded lands); 68% MA15 (timberlands)
Acres and % total of wildland urban interface in the area.	0 acres
Type and extent of management restrictions within the area.	1 mile of bull trout critical habitat (1 stream). 590 acres (100%) of lynx critical habitat 308 acres (52%) of grizzly bear security core 579 acres (98%) in Mission Addition inventoried roadless area # 01502

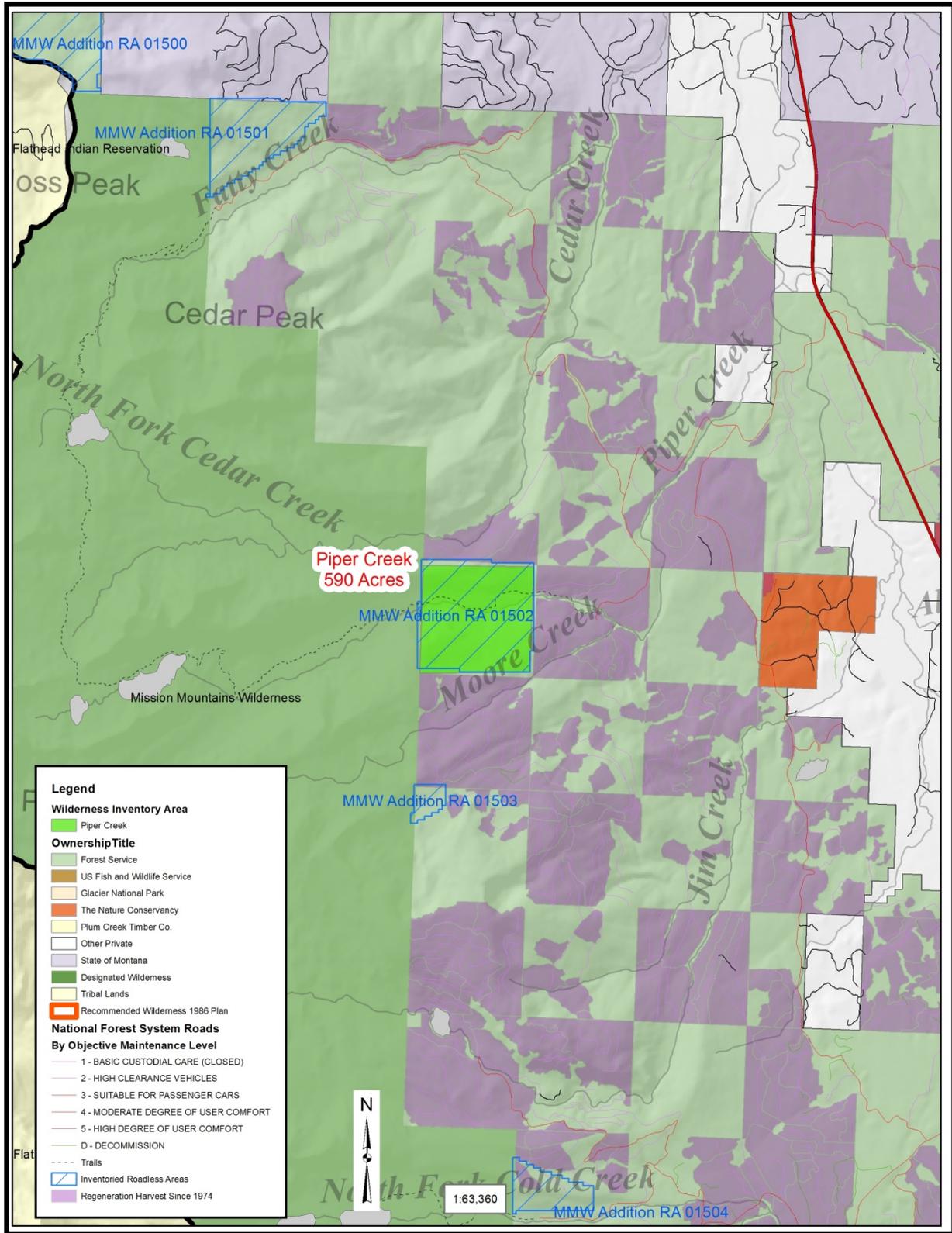


Figure F-20. Piper Creek wilderness inventory area

Puzzle Area

A total of 24,110 acres was included in the Puzzle wilderness inventory area. This area is located on the Hungry Horse–Glacier View Ranger District. Figure F-21 shows the Puzzle wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 95% lodgepole pine, subalpine fir - common types on the Flathead NF. About 5% of the area is in high elevation sparse vegetation types.

Potential vegetation types: cool/cold types dominate, supporting typical mixed conifer forests. There is a large amount of high elevation sites that is suitable for whitebark pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-153. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	93%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are three non-native or parasitic species observed in area: the house sparrow, Brown-headed cowbird, and rock pigeon at northeast survey point. Past harvest units have occurred on 1,698 acres; concentrated in Skyland and Puzzle Creeks, and along edge of area in Challenge and Granite Creeks. The Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~5% burned 191; ~31% recently burned 1998-2011). There is long term human-caused

departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Weeds are limited to roads. There is a low probability of weeds in most of area, with exception of Skyland Creek burn area, which is adjacent to road infestations.

Puzzle, Granite, Challenge and Skyland are the main watersheds in this area. There are no aquatic invasive species in these watersheds. Bull trout and pure westslope cutthroat trout populations exist throughout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-154. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvests occurred mostly in the early 1970s on gentle to moderate slopes. Most of the harvested areas have reforested except in parts of recent burns, specifically in Skyland Creek. Harvest areas are not visible and associated roads templates and skid trails not evident from mid- or background view. The exception may be in parts of recently burned area (lower reaches of Skyland Creek) and on steeper ground, where roads are evident in foreground view (Skyland Creek and Morrison Creek).
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None. There is a proposal to move the Patrol Ridge repeater to the southwest of its current location towards the wilderness boundary. This would be within the area if it happens.
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None

Improvement Type	Extent of departures
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Small slivers of the Badger-Two Medicine Traditional Cultural District extend into this area. Remains of a historic fire camp from early 1920s or 1930s.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-155. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity.	24,019 acres (100%)
Area and % total available for winter non-motorized opportunity	15,756 acres (65%)

Portions of this area provide for outstanding opportunity for solitude. About 84% of the area is with the Bear-Marshall-Scapegoat-Swan inventoried roadless area (IRA) #1485. The area is adjacent to the Great Bear Wilderness in the south and the Badger-Two Medicine on the Lewis and Clark to the east. Elevations in the area range from 7,610 feet on Elkcalf Mountain to around 4,800 feet in the valley bottom. The area includes Slippery Bill Mountain, Square Mountain and the Puzzle Hills. Sights and sounds of human activities are only noticeable in the northern reaches of the area. The area is adjacent to US Hwy 2 in the north which may influence solitude but would not be pervasive.

There are 11 miles motorized over-snow routes and 35% of the area allows motorized over-snow which may influence solitude but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-156. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	19,251 acres (80%)
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	14,391 acres (60%)

Primitive recreation activities include hiking, backpacking, horseback riding, hunting, fishing, forest product gathering, cross country skiing and backcountry skiing. There are 22 miles terra¹¹ trails (4 miles motorized).

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-157. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	12 miles (18%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is no existing whitebark pine dominance type, but several thousand acres of sites potentially suitable for whitebark pine. There is about 5,200 acres mapped whitebark pine potential vegetation type. Genetically superior whitebark pine trees are identified on Puzzle Hills and provide seed for whitebark pine tree improvement and restoration programs. There are 53 acres of whitebark pine plantations in Skyland Creek planted as part of restoration program. There is a test plantation planned for establishment in 2017 in Skyland Creek, as part of tree improvement and whitebark pine restoration program and development of blister rust resistant whitebark pine.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	Presence of 2 rare plants: <i>Draba densifolia</i> (Dense-leaf Draba), <i>Polygonum austiniiae</i> (Austin's Knotweed)
Species richness % of total acreage ⁷	16,800 acres (70%) of level 3/4
Acres of key conservation areas for wolverine ⁸	12,227 acres (51%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	1,783 acres (7%) of habitat.
Narrative of coarse scale key connectivity for multiple species ¹⁰	High ranking for wolverine, high ranking for grizzly, and low for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-158. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	6,342 acres (26%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55 72, 75	5,612 acres (23%)

Describe if there are any unique geologic features in the area.

There are no known caves or unique geologic resources in the area.

Question 3c

Are there historic or cultural resources of historic value in the area?

Small slivers of the Badger-Two Medicine Traditional Cultural District extend into this area. The remains of a historic fire camp from early 1920s or 1930s.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-159. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

There are whitebark pine plus trees¹ identified, whitebark pine plantations, and planned establishment of test plantation, which are features in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-160. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shaped. Southern boundary is adjacent to the Great Bear Wilderness. A portion of the northwest boundary is adjacent to highway 2. The western boundary is adjacent to the Badger-Two Medicine on the Lewis and Clark.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 2a (unroaded), MA 12/17 (riparian), MA 15 (Timberlands), MA 21 (Great Bear Wilderness)

Measures	Outcome
Describe the current management of the area.	<p data-bbox="846 254 1414 390"><1 mile of seasonally open road (RD# 9604 has objective maintenance level 1); 11 miles closed roads; 22 miles terra¹¹ trails (4 miles motorized); 11 miles motorized over-snow routes; 8,346 acres (35%) allow motorized over-snow.</p> <p data-bbox="846 432 1406 506">65% MA 2; 1% MA 7 (timberlands in areas high scenic value; 10% MA 12 (riparian habitat); 24% MA 15/16 (timberlands).</p>
Acres and % total of wildland urban interface in the area.	1,430 acres (6%)
Type and extent of management restrictions within the area.	<p data-bbox="846 564 1300 590">24,110 acres (100%) of lynx critical habitat</p> <p data-bbox="846 596 1357 621">18,052 acres (75%) of grizzly bear security core</p> <p data-bbox="846 627 1373 680">20,172 acres (84%) of Bear-Marshall-Scapegoat-Swan inventoried roadless area #1485</p>

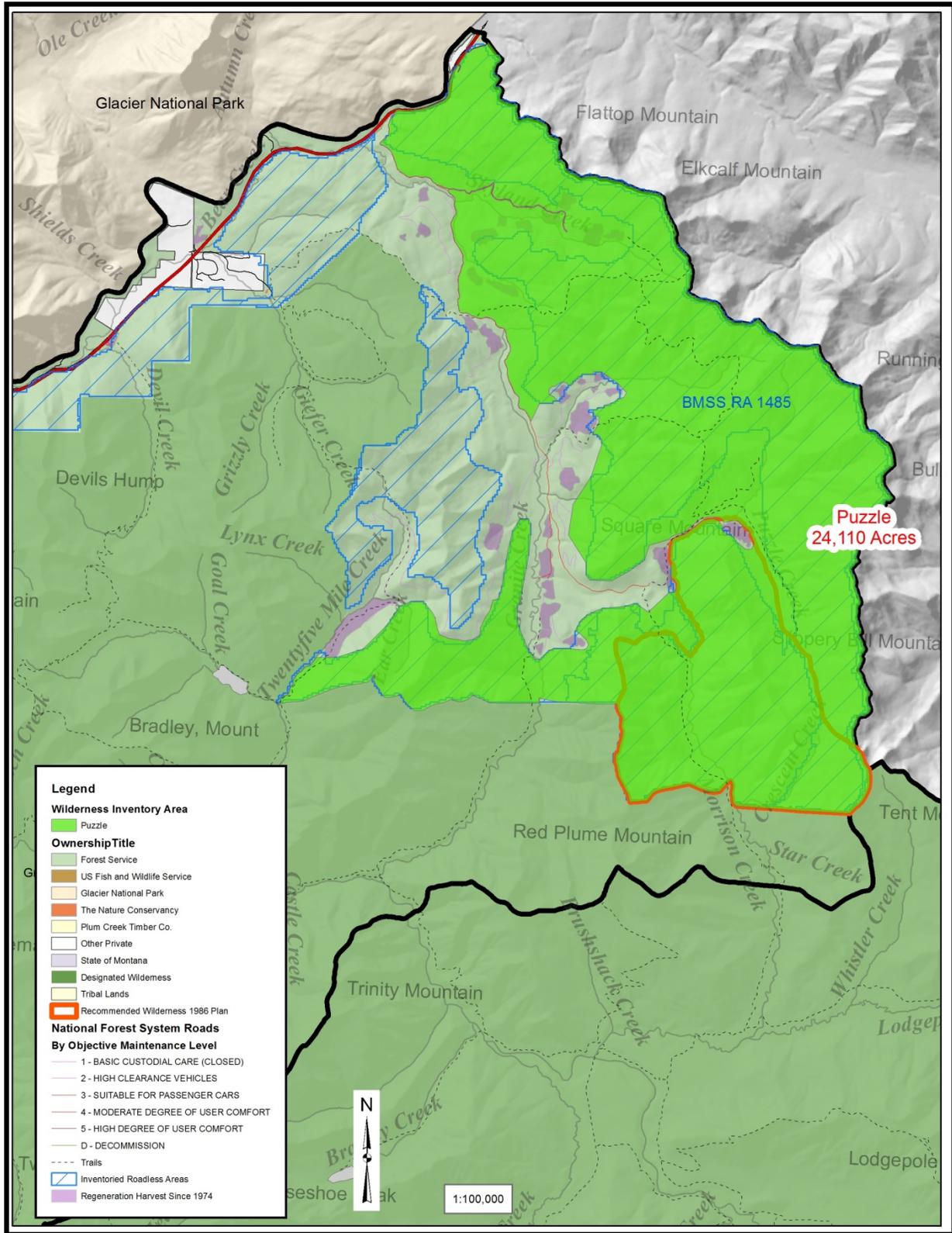


Figure F-21. Puzzle wilderness inventory area

Sky West Area

A total of 6,266 acres was included in the Sky West wilderness inventory area. This area is located on the Hungry Horse–Glacier View Ranger District. Figure F-22 shows the Sky West wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 90% subalpine fir, lodgepole pine; common types on the Flathead NF. About 9% of the inventory area is high elevation sparse vegetation types.

Potential vegetation types: cool/cold types dominate, supporting mixed coniferous forest typical of the sites. High elevation cold types, up to 7,200 feet elevation, could support whitebark pine.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-161. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	90%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	99%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. There are several past harvest units, totaling 624 acres, as well as associated roads in the area. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~55% burned 1910-1921; ~25% recently burned 1998-2007). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units,

there may be lingering impacts from equipment use (e.g. dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Weeds in the area are limited to roads. There is a low probability of weeds in area.

Twenty-five Mile Creek is the main watershed within this area and supports westslope cutthroat trout. Bull trout are not present in the Twenty-five Mile Creek due to a barrier near the Middle Fork. There are no aquatic invasive species within this area.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-162. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvests occurred in the early 1970s on gentle to moderate slopes. The harvested areas are now fully reforested in most areas, and not visible. The exception is in steeper parts of area (e.g., Twenty-five Mile Creek) and where recently burned (lower reaches of Skyland Creek), and where major historic road templates and skid trails are visible in the foreground views.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	Patrol Ridge Repeater site is in the far SW part of the area.
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.

Improvement Type	Extent of departures
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-163. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity.	6,235 acres (100%)
Area and % total available for winter non-motorized opportunity	977 acres (16%)

Portions of this area provide outstanding opportunity for solitude; especially as you move away from US Highway 2. About 75% of the area is within inventoried roadless area (IRA) (Bear-Marshall-Scapegoat-Swan IRA # 1485). The majority of the western boundary is adjacent to the Great Bear Wilderness. The northern boundary and the northwest boundary in Geifer Creek are adjacent to US Hwy 2 and private land. The area burned in the Challenge and Skyland Fires.

There are 8 miles motorized over-snow routes and about 84% of the area allows motorized over-snow which may influence solitude but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-164. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive classes for summer recreation opportunity spectrum.	4,788 acres (76%)
Acres and % total of primitive and semi-primitive classes for winter recreation opportunity spectrum.	670 acres (11%)

Primitive recreation opportunities include hiking, backpacking, horseback riding, hunting, fishing, gathering forest product, cross country skiing, snowshoeing, and backcountry skiing. There are 5 miles hiking and biking trails.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-165. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	3 miles (19%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	Minimal acres existing whitebark pine dominance type, though whitebark pine is present. About 1,600 acres mapped whitebark pine potential vegetation type. Genetically superior whitebark pine plus trees ¹ are identified, and provide seed for whitebark pine tree improvement and restoration programs.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	5,411 acres (86%) of level 3/4
Acres of key conservation areas for wolverine ⁸	2,670 acres (43%) of very high maternal habitat
Acres of key conservation areas for mountain goat ⁹	10 acres (<1%) of habitat
Narrative of coarse scale key connectivity for multiple species ¹⁰	High ranking for wolverine, high ranking for grizzly, low for lynx travel, very high radioed lynx use.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-166. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	3,864 acres (62%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	2,190 acres (35%)

Describe if there are any unique geologic features in the area.

There are no known cave resources in the area.

Question 3c

Are there historic or cultural resources of historic value in the area?

None.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-167. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0 acres

Question 3f

Are there any scientific or education features in the area?

There are whitebark pine plus trees¹ identified which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-168. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. Borders the Great Bear Wilderness on the western border. The eastern border is adjacent to NFS lands. The northern boundary is along US Highway 2.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 2a (unroaded lands), MA 12 (riparian area), MA 15a/ MA 16a (timberlands on sensitive soils)
Describe the current management of the area.	5 miles closed roads; 5 miles terra ¹¹ trails (0 miles motorized); 8 miles motorized over-snow routes; 5,290 acres (84%) allow motorized over-snow. 62% MA 2 (unroaded lands); 4% MA5/7 (timberlands with high scenic value; 10% MA 12(riparian); 6% MA13 (timberlands in mule deer and elk winter habitat); 18% MA 15 (timberlands).
Acres and % total of wildland urban interface in the area.	1,976 acres (32%)
Type and extent of management restrictions within the area.	3 miles of bull trout critical habitat (1 stream). 6,267 acres (100%) of lynx critical habitat 4,041 acres (64%) grizzly bear security core 4,671 acres (75%) Bear-Marshall-Scapegoat-Swan inventoried roadless area # 1485

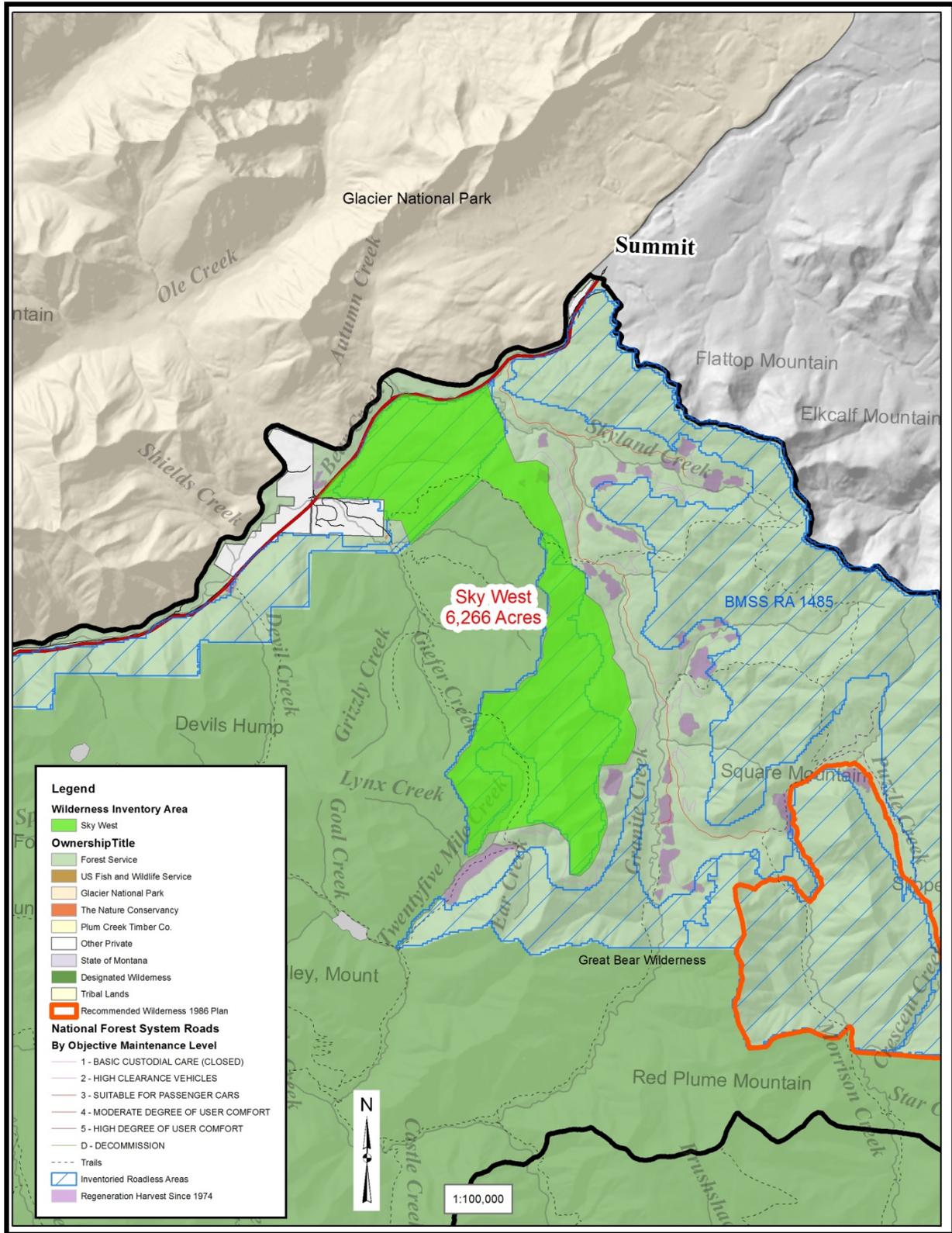


Figure F-22. Sky West wilderness inventory area

Swan Face South Area

A total of 52,958 acres was included in the Swan Face South wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-23 shows the Swan Face South wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: ~70% subalpine fir, lodgepole pine, Douglas-fir, western larch; common types on the Flathead NF. There is about 30% of the area in high elevation sparse vegetation and avalanche chutes.

Potential vegetation types: ~78% cool types, supporting typical mixed conifer forest types. About 12% warm moist (grand fir, cedar, western hemlock, and western white pine) and warm dry (ponderosa pine) and whitebark pine types are in the inventory area. These types could potentially support the more rare forest types for the Flathead NF, specifically cedar, ponderosa pine, whitebark pine and alpine larch. The current presence of these species on these sites is unknown.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-169. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	97%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. There are past harvest areas (1,432 acres), that are limited to Barber, Buck, Owl Creek. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes; including fire (10% burned 2006-2011, no known fires during 1898-2005). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Weeds are limited to roads. There is some adjacent heavy weed infestations in the Condon and Simpson Creeks area, hence a moderate probability of weeds within area nearest these infestations. There is a low probability of weeds in the majority of the area.

This inventory area contains numerous watersheds. The most important bull trout watersheds are Lion Creek, Squeezer Creek, and Holland Lake. Holland Lake has recently been invaded by lake trout, and brook trout are present throughout the area. Most of the streams in this area also support westslope cutthroat trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-170. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvested in 1965-78, on mostly gentle slopes. Densely stocked with trees. Major road templates and skid trails likely evident in foreground view, especially in 1970s harvested areas and units with steeper slopes.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None

Improvement Type	Extent of departures
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Existing historic Holland Lake Guard Station. Non-documented American Indian travel corridor over Holland Creek Area.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-171. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	52,919 acres (100%)
Area and % total available for winter non-motorized opportunity	46,272 acres (87%)

Portions of this area provide for outstanding opportunity for solitude. About 86% of the area is within an inventoried roadless area (IRA) (Bear-Marshall-Scapegoat-Swan IRA #1485). Topography consists of mostly steep ridges and a continuous chain of high and often treeless, rugged mountains as the eastern boundary. Among the highest is Holland Peak at 9,356 feet. Below the high peaks is the canyon zone where the streams of the face plunge down narrow bottoms between steep side slopes until they reach the valley floor. Rocks and cliffs prevail in much of the canyon zone. A majority of the topography in the inventory area provides screening of sight and sound.

A portion of the northern section is bordered by Swan River State Forest to the west. The southern portion has private land located within ½ mile of west boundary. The private section adjacent to the west boundary may influence solitude but would not be pervasive.

There are several high use trails in the area (Napa Point, Smith Creek, and Holland Lake Trails) that are access points to the Bob Marshall Wilderness; the Holland Lake Trail is the most used trail into the Bob Marshall Wilderness.

There are 15 miles motorized over-snow routes and 13% of the area allows motorized over-snow which may influence solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-172. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	48,266 acres (91%)

Measures	Outcome
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	44,453 acres (84%)

Dispersed recreation activities in this inventory area include hiking, horseback riding, fishing, and big-game hunting, camping, backpacking, and viewing wildlife. Napa Point, Smith Creek, and Holland Lake Trails are major access points to the Bob Marshall Wilderness. Several outfitters operate in this area from Bond/Trinkus Lake south to Holland Lake. There are 34 miles of hiking trails in the area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; any biodiversity hotspots; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-173. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	16 miles (9%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is about 200 acres of existing whitebark pine dominance type and likely many hundreds more acres where whitebark pine is present on the site. A large portion of area is higher elevation (>6,000 feet, and up to about 8,700 feet elevation) and capable of supporting whitebark pine. Harsh, exposed aspects favored by whitebark pine are plentiful. About 9,800 acres of mapped whitebark pine potential vegetation type. There is 67 acre whitebark pine plantation established in Condon Mountain area, 2013-2014, as part of whitebark pine restoration program.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	Contains part of one known pond <1 acre of a <1 acre pond).
Minimally represented or rare vegetation types in region ⁶	The presence of the following rare plants: <i>Parmeliella triptophylla</i> (Lead Lichen), <i>Grindelia howellii</i> (Howell's Gumweed), <i>Cardamine rupicola</i> (Cliff Toothwort), <i>Brigantiaea praetermissa</i> (A Lichen), <i>Howellia aquatilis</i> (Water Howellia), <i>Cypripedium parviflorum</i> (Small Yellow Lady's Slipper), <i>Cardamine rupicola</i> (Cliff Toothwort), <i>Synthyris canbyi</i> (Mission Mountains kittentails) Minimally represented species: May support the presence of grand fir, cedar, western hemlock, and western white pine.
Species richness % of total acreage ⁷	26,444 acres (50%) of level 3/4.
Acres of key conservation areas for wolverine ⁸	36,096 acres (68%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	12,404 acres (23%) of habitat.

Measures	Outcome
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for wolverines, high for grizzly bear, low for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-174. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	35,437 acres (67%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	20,238 acres (38%)

Describe if there are any caves or unique geologic features in the area.

To our knowledge, there are no caves in the inventory area. Several falls are found in Bond, Lion, Condon, Rumble and Holland Creeks. In the Lion Creek Canyon there is a mature cedar grove. Lion Creek passes through the grove in a series of cascades and falls. Holland Falls is a popular hiking destination at the Holland Lake Area.

Question 3c

Are there historic or cultural resources of historic value in the area?

There is an existing historic Holland Lake Guard Station. Non-documented American Indian travel corridor over Holland Creek Area.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-175. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no education features in the inventory area. There is a whitebark pine plantation established which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-176. Measures for 4

Measures for 4a	Outcome
Describe the shape and configuration of the area.	Long, irregular shape that borders the Bob Marshall Wilderness on the entire east boundary. Western boundary is mostly adjacent to NFS lands and to the north, borders the Swan River State Forest. There is a buffer 33 feet (each side) from the centerline of the Barber Creek Road #905.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 9 (timberlands /whitetailed deer habitat), MA 13 (timberlands/mule deer and elk winter habitat), MA 15 (timberlands),
Describe the current management of the area.	14 miles of closed roads; <1 mile of historical roads; 34 miles terra ¹¹ trails (0 miles motorized); 15 miles motorized over-snow routes; 6,686 acres (13%) allows motorized over-snow. 1% MA 1 (non-forested) ; 80% MA 2 (unroaded); 12% MA 9/13 (timberlands white tailed deer winter habitat); 6% MA15/16 (timberlands)
Acres and % total of wildland urban interface in the area.	6,159 acres (12%)
Type and extent of management restrictions within the area.	3 miles of bull trout critical habitat (3 different streams); <1 acre of bull trout critical habitat (part of Holland Lake, sliver effect from mapping). 52,708 acres (100%) of lynx critical habitat 43,302 acres (82%) of grizzly bear security core. 45,319 acres (86%) of Bear-Marshall-Scapegoat-Swan inventoried roadless area #1485

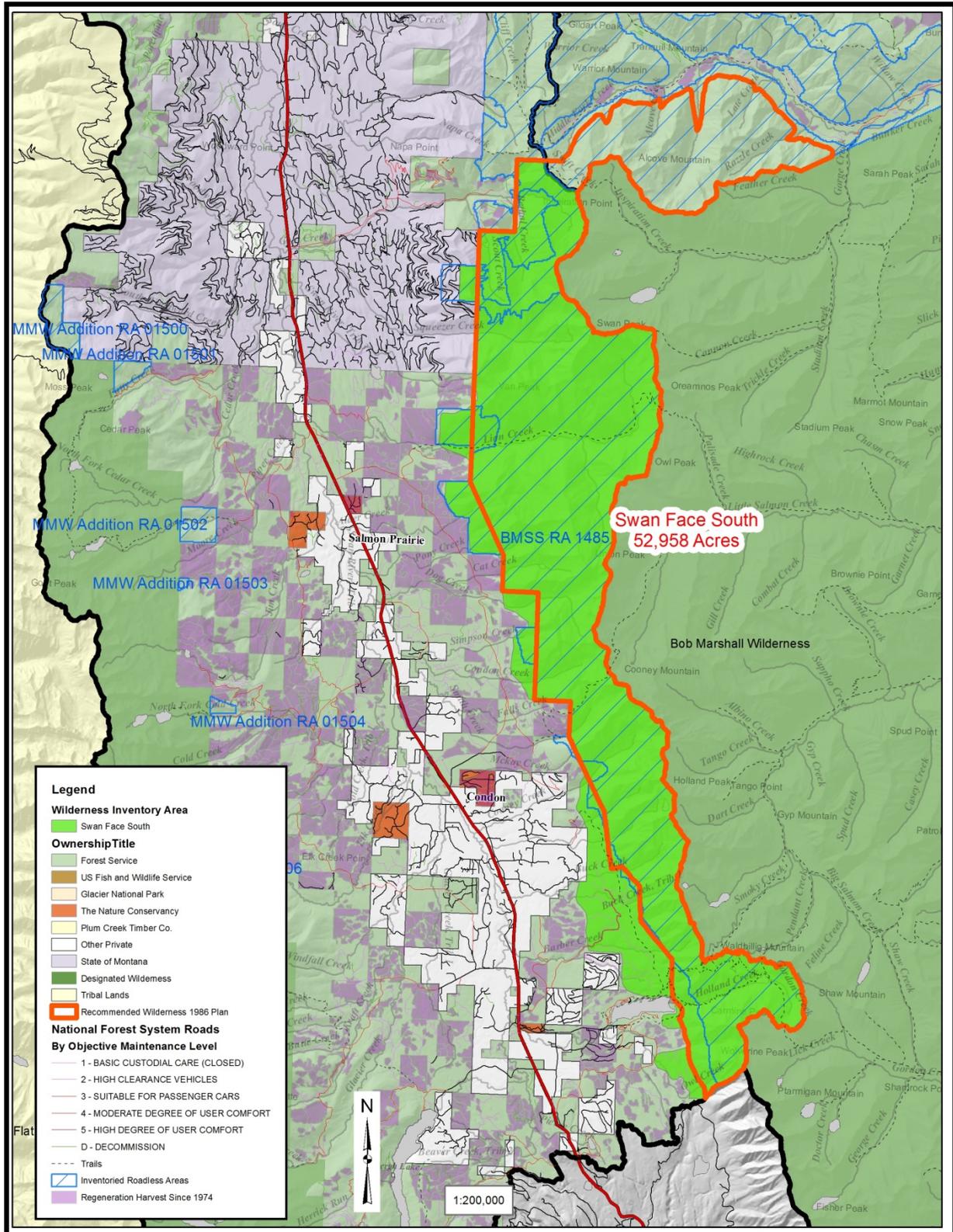


Figure F-23. Swan Face South wilderness inventory area

Tuchuck Area

A total of 32,662 acres was included in the Tuchuck wilderness inventory area. This area is located on the Hungry Horse–Glacier View Ranger District. Figure F-24 shows the Tuchuck wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: 85% Douglas-fir, lodgepole pine, larch, subalpine fir; common types on the Flathead NF. There is about 700 acres whitebark pine dominance type, including some of the most healthy whitebark pine communities on the Flathead NF that have low levels of blister-rust infection. Alpine larch communities present.

Potential vegetation types: cool/cold moist type prevalent, supporting typical mixed conifer forest types. There is a substantial area of higher elevation suitable for whitebark pine (and alpine larch) which are more rare types.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-177. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	98%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

The Brown-headed cowbird is a non-native or parasitic wildlife species present in the area. Weeds are limited to roads. There is a low probability of weeds within remaining area.

The main watersheds in this are Trail and Colts Creeks. Trail Creek has bull trout and pure westslope cutthroat trout while Colts Creek supports pure westslope cutthroat trout. There are no aquatic invasive species in this area.

There have been past harvest on 568 acres mostly adjacent to a road that bisects the area. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (>80% of area burned 1910 – 1929). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-178. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable. These are the non-timber harvest treatments.	Discussed in 1b.
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvest occurred in the time period 1956-67 with some additional harvest in 1983 (clearcuts adjacent to Frozen Lake road and within inventory area). With exception of these recent harvests, units are not visible. The 1983 harvest areas are substantially noticeable from fore-ground, and likely from some mid-ground viewpoints. The main road that bisects area may be visible from some mid/background viewpoints.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None

Improvement Type	Extent of departures
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Two lookouts: Thoma and Tuchuck. Thoma Lookout has been restored and is currently an active fire lookout. Tuchuck is not a standing structure. Graves Creek/Trail Creek Native American travel corridor. Pictographs close to southern boundary.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-179. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity (excludes roads with potential for receiving administrative use, open roads to be decommissioned, and motorized trails)	32,657 acres (100%)
Area and % total available for winter non-motorized opportunity	32,230 acres (99%)

This area provides outstanding opportunity for solitude. About 93% of this area is within inventoried roadless areas (IRAs) (Mount Hefty IRA #1481 and Tuchuck IRA #1483). The area is adjacent to the US/Canada Border on the north, Kootenai NF to the west, NFS lands to the south and private lands to the east. To the north on the Canadian side of the border some primitive roads and past timber management is visible. The sights and sounds of human habitation are limited in this area and may have some influence on solitude but would not be pervasive.

There is a 33 foot buffer around the Frozen Lake Road # 114A on either side which creates a cherry stem into the inventory area that may influence solitude but it would not be pervasive.

There is 6 miles of over-snow routes and about 1% of the area allows motorized-over-snow which may influence solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-180. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	27,395 acres (84%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	25,325 acres (78%)

Primitive recreation opportunities include hiking, backpacking, horseback riding, hunting, forest product gathering, wildlife watching, cross country skiing, snowshoeing, and backcountry skiing. Hiking to the summit of Mt Hefty and Tuchuck Mountain are popular activities. There are 34 miles hiking/biking trails in the area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-181. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	4 miles (4%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is about 700 acres of existing whitebark pine dominance type, with many thousands more acres where whitebark pine likely present. There is about 8,000 acres of mapped whitebark pine potential vegetation type. Genetically superior whitebark pine trees are identified on Thoma Ridge and provide seed for whitebark pine tree improvement and restoration programs. Some of the least blister rust infected whitebark pine stands on the Flathead NF occur in this inventory area.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	There is the presence of 1 rare plant: <i>Botrychium Sp.</i> (Moonworts)
Species richness % of total acreage ⁷	13,928 acres (43%) of level 3/4
Acres of key conservation areas for wolverine ⁸	15,482 acres (47%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for wolverines, NA for mountain goat, very high for grizzly bear U.S. to Canada and east-west from Glacier Park to Whitefish Range, high for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-182. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high scenic public value.	9,641 acres (30%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	7,305 acres (22%)

Describe if there are any unique geologic features in the area.

There are known cave resources in the area. The area provides outstanding views to the Livingston Mountain Range in Glacier National Park.

Question 3c

Are there historic or cultural resources of historic value in the area?

Two lookouts: Thoma and Tuchuck. Thoma has been restored and is a rental lookout, Tuchuck has not (not a standing structure). Graves Creek/Trail Creek Native American travel corridor at southern border. Pictographs close to southern boundary.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-183. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	2,050 acres (6%) is the Tuchuck Research Natural Area

Question 3f

The Tuchuck Research Natural area is within this inventory area. The objective of the RNA is to maintain representative examples of montane and subalpine vegetation type for research and educational purposes. The RNA serves as an area to collect baseline data for determining long-term ecological changes and as a monitoring area to determine effects of management actions applied to similar ecosystems

Whitebark pine plus trees¹ have been identified in this area which is a feature in the continuing whitebark pine restoration and research programs.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-184. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Generally rectangle shape that has the US/Canadian boundary for the northern border. Irregular shape on the western border that follows the Kootenai NF/Flathead NF boundary (which is also the Lincoln County/Flathead County border). Eastern border follows NFS and private land boundary. Southern boundary skirts past harvest areas that are considered substantially noticeable. Frozen Lake Road to the North.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 2a (unroaded), MA 15 (timberlands), Kootenai NF
Describe the current management of the area.	7 miles closed roads; 3 miles historical roads; 34 miles terra ¹¹ trails (0 miles motorized); 6 miles over-snow routes; 425 acres (1%) allow motorized-over-snow. 1% MA 7 (timberlands with high scenic value); 99% MA11 (grizzly bear)
Acres and % total of wildland urban interface in the area.	4,775 acres (14%)
Type and extent of management restrictions within the area.	No bull trout critical habitat. 32,651 acres (100%) of lynx critical habitat 29,077 acres (89%) of grizzly bear security core. 12,894 acres (39%) of Mount Hefty inventoried roadless area (IRA) #1481 17,568 acres (54%) of Tuchuck IRA #1483 Total of 30,462 acres (93%) in IRAs

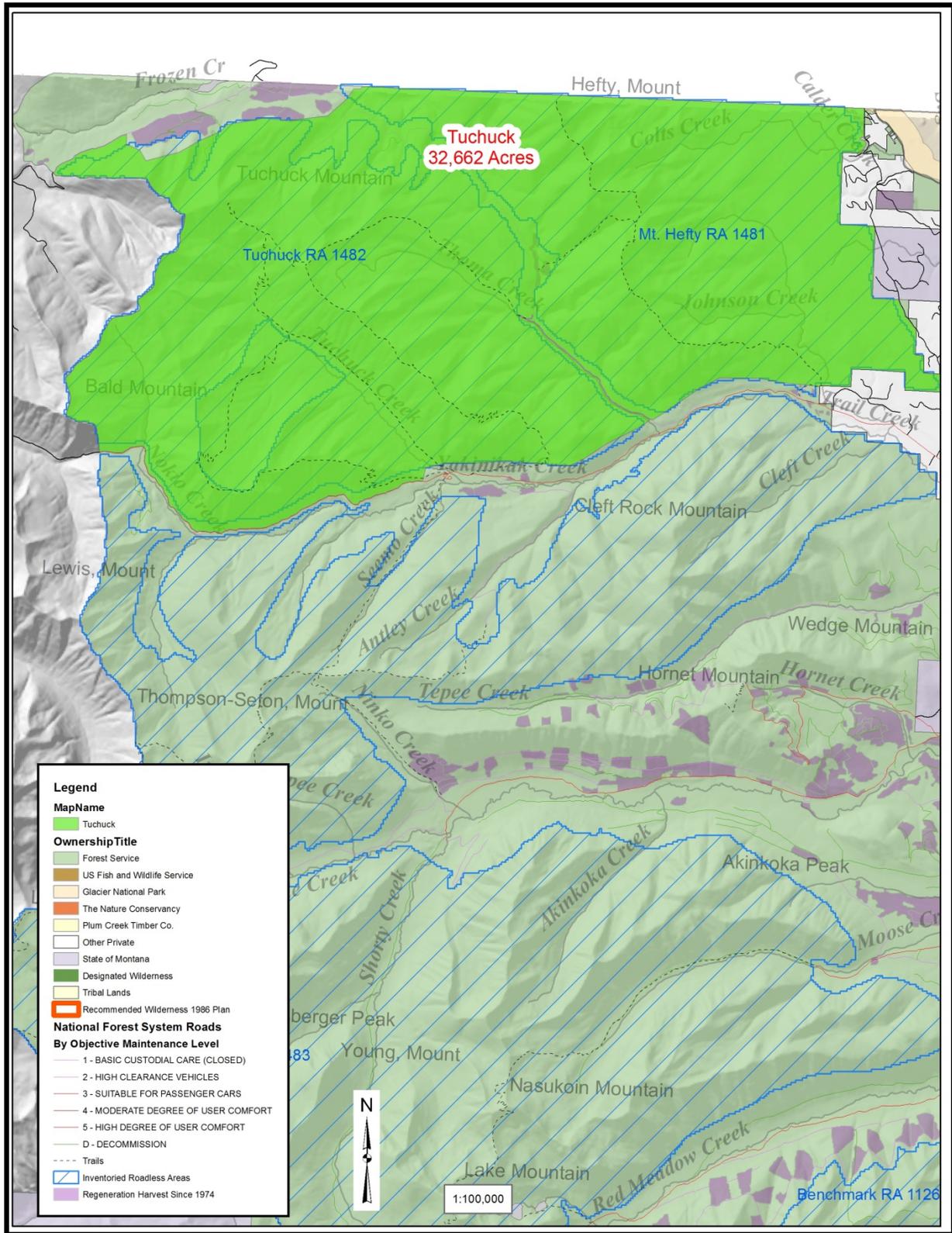


Figure F-24. Tuchuck wilderness inventory area

Whale Area

A total of 69,584 acres was included in the Whale wilderness inventory area. This area is located on the Tally Lake and Hungry Horse–Glacier View Ranger Districts. Figure F-25 shows the Whale wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man’s work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation dominance types: >85% subalpine fir (Douglas-fir, larch); common types on the Flathead NF. About 3% of the area is in whitebark pine dominance type, with some alpine larch communities present.

Potential vegetation types: cool/cold moist types predominate, supporting typical mixed conifer forest types. There is a substantial amount of cold, higher elevation lands capable of supporting whitebark pine/alpine larch.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-185. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	87%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	99%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	100%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There are no non-native or parasitic wildlife species present. Weeds are limited to roads. There is a low probability of weeds in remaining area.

The main watersheds in this area are Red Meadow, Moose, Teepee and Whale Creeks. Red Meadow and Whale Creeks support both bull trout and westslope cutthroat trout, while Teepee and Moose Creeks only support westslope cutthroat trout. There is a small amount of hybridization between westslope cutthroat trout and rainbow trout within the area. No other aquatic invasive species exist within the area.

Numerous past harvesting and roads building has occurred in parts of area (9,343 acres), concentrated along streams that dissect the area and the upper stream basins. Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within this inventory area is primarily affected by natural ecological processes, including fire (~30% of area burned 1919-1929; 20% burned in 1988). There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-186. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Most harvesting occurred in the 1950s on gentle to moderate slopes. The harvest areas are now densely stocked with trees, shrubs, and not visible. The exception may be associated road templates and numerous skid trails/jammer road templates in some areas, which may be evident in foreground view, especially in recent burn area. Heavy revegetation in most areas restricts visibility in the mid and background views.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	Some dispersed camping sites.
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None

Improvement Type	Extent of departures
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	Old historic cabin remains, remains of 2 lookouts (Akinkoka, Pioneer Mountain); Graves Creek/Trail Creek American Indian travel corridor.

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-187. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	69,575 acres (100%)
Area and % total available for winter non-motorized opportunity	65,691 acres (94%)

This area provides outstanding opportunity for solitude. Vegetation and slopes provide screening throughout the inventory area. About 75% of this area is within the Thompson-Seton inventoried roadless area (IRA) #1483.

There are 3 roads (Shorty Creek, Moose Creek and Inuya Pass) that are outside the inventory area with 33 foot buffers on either side of the road which create cherry stems into the inventory area which may influence solitude but would not be pervasive.

There is about 3 miles of over-snow routes and about 6% of the area allows for motorized over-snow which may influence solitude in the winter but it would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-188. Measures for 2b

Measures	Outcome
Acres and % total of primitive and semi-primitive non-motorized classes for summer recreation opportunity spectrum.	61,840 acres (89%)
Acres and % total of primitive and semi-primitive non-motorized classes for winter recreation opportunity spectrum.	59,846 acres (86%)

Primitive recreation opportunities include hiking, backpacking, horseback riding, hunting, fishing, forest product gathering, cross country skiing, snowshoeing and backcountry skiing. Other popular activities include hiking to the peaks of Nasukoin Mtn, Mt Thompson-Seton, and Mt Locke. The area has numerous alpine lakes in the south east part of the area including Chain and Link Lakes. The Chain and Link Lakes

were considered for designation as a recreation area in the 1960's. There is about 58 miles of hiking/biking trails within the area.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-189. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	34 miles (19%)
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	A large amount (2,000 acres) of existing whitebark pine dominance type, with many thousand more acres of sites potentially capable of supporting whitebark pine and alpine larch. There is about 23,000 acres mapped whitebark pine potential vegetation type.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None
Minimally represented or rare vegetation types in region ⁶	The presence of 3 rare plants: <i>Botrychium Sp.</i> (Moonworts), <i>Polystichum kruckebergii</i> (Kruckeberg's Swordfern). <i>Verrucaria kootenaica</i> (Speck Lichen)
Species richness % of total acreage ⁷	41,357 acres (59%) of level 3/4
Acres of key conservation areas for wolverine ⁸	43,909 acres (63%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for wolverines, very high for grizzly bear from U.S. to Canada and east-west from Glacier Park to Whitefish Range, high for lynx and very high radioed lynx use.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-190. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	34,429 acres (49%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	21,068 acres (30%)

Describe if there are caves or unique geologic features in the area.

There are known cave resources in the area.

Question 3c

Are there historic or cultural resources of historic value in the area?

An old historic cabin remains, remains of 2 lookouts (Akinkoka, Pioneer Mountain), Graves Creek/Trail Creek American Indian travel corridor.

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-191. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	0 acres

Question 3f

Are there any scientific or education features in the area?

None.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-192. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape, western border is the boundary with the Kootenai NF and Flathead NF. Northeast corner is adjacent to private lands. Southern boundary is near the Red Meadow Road. There are 3 areas where roads are buffered 33 feet on either side - Shorty Creek, Inuya Pass, and Moose Creek.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	MA 2a (unroaded), MA 3 (non-forested), MA 12 (riparian), MA 15 (timberland),

Measures	Outcome
Describe the current management of the area.	<p>12 miles closed roads; 32 miles decommissioned or historical roads; 58 miles terra¹¹ trails (0 miles motorized); 3 miles over-snow routes; 3,888 acres (6%) allow motorized over-snow.</p> <p>10% MA 2 (unroaded); 1% MA 3 (non-forested); 81% MA 11 (grizzly bear); 2% MA12/17 (riparian); 6% MA 15 (timberlands).</p>
Acres and % total of wildland urban interface in the area.	5,030 acres (7%)
Type and extent of management restrictions within the area.	<p>13 miles of bull trout critical habitat (6 different streams).</p> <p>69,571 acres (100%) of critical lynx habitat.</p> <p>62,671 acres (90%) grizzly bear security core.</p> <p>52,126 acres (75%) includes the Thompson-Seton inventoried roadless area #1483</p>

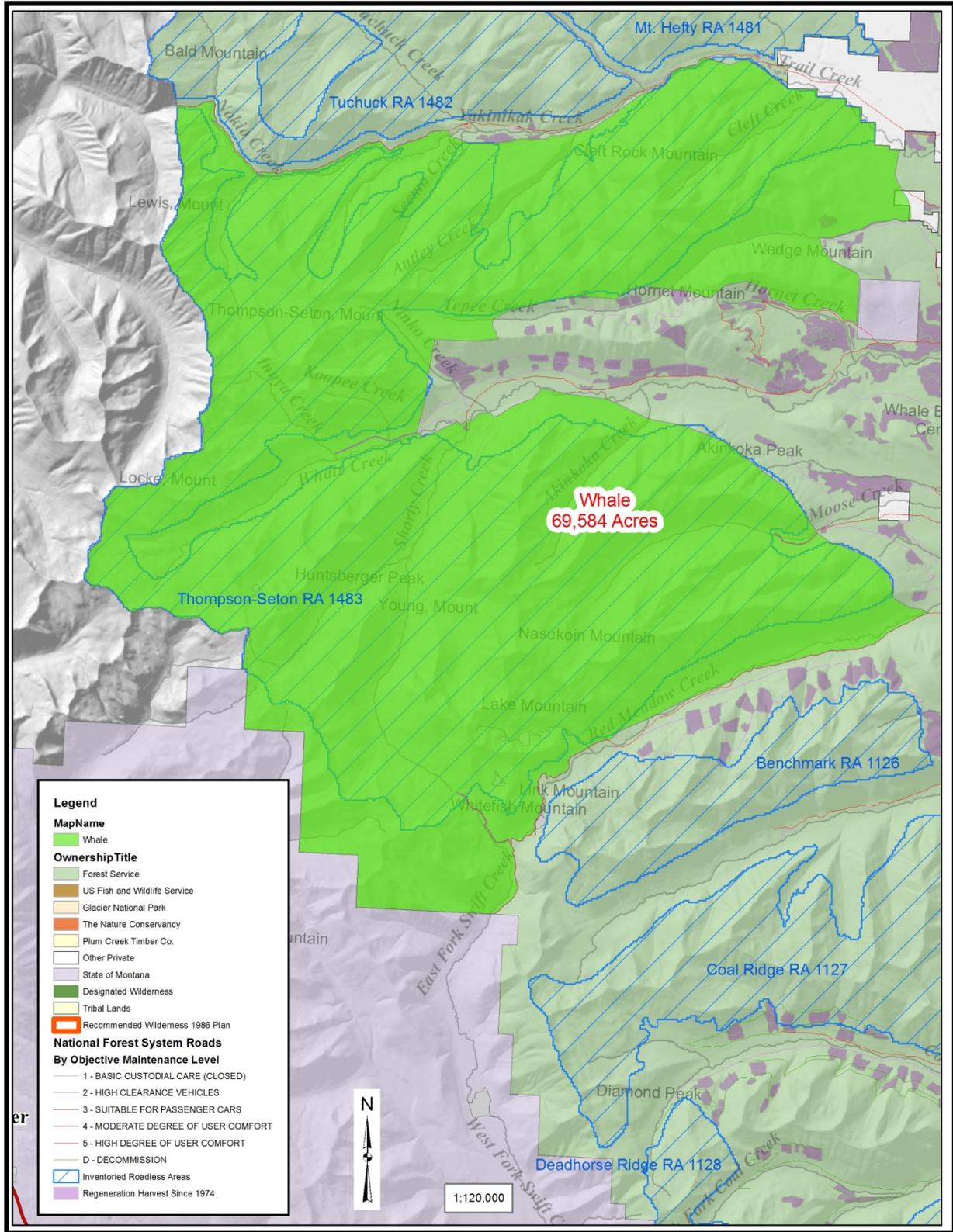


Figure F-25. Whale wilderness inventory area

Woodward Creek Area

A total of 2,198 acres was included in the Woodward Creek wilderness inventory area. This area is located on the Swan Lake Ranger District. Figure F-26 shows the Woodward Creek wilderness inventory area.

Criteria 1: Evaluate the degree to which the area generally appears to be affected primarily by the forces of nature, with the imprints of man's work substantially unnoticeable.

Question 1a

What is the composition of plant and animal communities within the area?

Existing vegetation types: 96% subalpine fir, lodgepole pine; common types on the Flathead NF. Potential vegetation types: cool/cold types, supporting mixed conifer forests typical of these sites. Most of the area is >6,000 feet elevation which is whitebark pine habitat.

There are about 300 animal species within the Flathead NF. Appendix A of the proposed action lists species known to occur on the Forest and their association with particular biophysical settings, communities, and habitat components. Measure 3a provides information on the diversity of animal communities in each individual wilderness inventory area.

Question 1b

What is the extent to which the area reflects ecological conditions that would normally be associated with the area without human intervention?

Table F-193. Measures for 1b

Measures	Outcome
Percent of area that is not affected by timber harvest (inverse of the percent of area of timber harvest ²).	87%
Percent total of the area without invasive weeds (inverse of the percent of total area that has invasive weeds).	0%
Percent of area that is not affected by maintenance level 1 roads ³ template (inverse of the percent of area of maintenance level 1 roads).	99%
Percent of area that is not affected by decommissioned roads template (inverse of the percent of area of decommissioned roads).	100%
Percent of area that is not affected by known historic roads template (inverse of the percent of area of known historic roads).	100%

Describe the extent of invasive fish and animals. Describe the degree of human impacts to natural ecosystem characteristics and processes, such as forest structure, forest patterns and soil components.

There is no non-native or parasitic wildlife species present. There is some past harvest and road building in upper South Woodward Creek (291 acres). Forest composition, structure, patterns in harvest areas have been influenced by past human actions. The current vegetation within the inventory area is primarily affected by natural ecological processes. None of the area has burned within past 120 years. There is long term human-caused departure from natural soil physical and chemical characteristics on templates of harvest roads, including jammer roads. Within harvest units, there may be lingering impacts from

equipment use (e.g., dozer skid and pile), but those impacts are typically scattered/disconnected spots and actively recovering.

No known weed infestations; low probability of weeds within this area.

The main stream in this area is South Woodward Creek which supports bull trout, westslope cutthroat trout and invasive brook trout.

Question 1c

What is the extent to which improvements (improvement criteria 71.22 from FSH 1909.12 chapter 70) included in the inventory represent a departure from naturalness?

Table F-194. Measures for 1c

Improvement Type	Extent of departures
Airstrips	Not present
Heliports	Not present
Vegetation treatments that are not substantially noticeable.	Captured in measure 1a
Timber harvest areas where logging and prior road construction are not substantially noticeable. Reference detailed maps in record.	Harvests occurred in 1976 (clearcut and shelterwood) that appear to be substantially noticeable.
Permanently installed vertical structures, such as electronic installations including cell towers, television, radio, and telephone repeaters, provided their impact, as well as their maintenance and access needs, is minimal.	None
Areas of historic mining where impacts are not substantially noticeable.	None
Areas of mining activity where impacts are not substantially noticeable.	None
Range improvement areas, involving minor structural improvements (for example fences or water troughs) and non-structural improvements (chaining, burning, spraying, potholing, and so forth) that are not substantially noticeable.	None
Recreational improvements, such as occupancy spots, or minor hunting, or outfitting camps.	None
Ground-return telephone lines, electric lines, and power lines if a right-of-way has not been cleared. Exclude power lines with cleared right-of-ways, pipelines, and other permanently installed linear right-of-way structure.	None
Watershed treatment areas (contouring, diking, channeling) that are not substantially noticeable, or if wilderness character can be maintained or restored through appropriate management actions.	None
Lands adjacent to development or activities that impact opportunities for solitude.	See response to question 2a.
Structures, dwellings and other relics of past occupation when they are considered part of the historical and cultural landscape of the area.	None

Criteria 2: Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation⁴.

Question 2a

What is available for outstanding opportunity for solitude?

Table F-195. Measures for 2a

Measures	Outcome
Area and % total of area available for summer non-motorized opportunity	2,198 acres (100%)
Area and % total available for winter non-motorized opportunity	6 acres (0%)

There is very high opportunity for solitude in this area. About 37% of the area is within the Mission Addition inventoried roadless area (IRA) #01500. Topography is rolling with vegetation to screen sight and sound. The inventory area is adjacent to the Mission Mountains Wilderness (south boundary) and the Flathead Indian Reservation (west boundary) and adjacent to State land (east boundary).

There is about 2 miles of motorized over-snow routes and 99% of the inventory area is open to over snow use which may influence solitude in the winter but would not be pervasive.

Question 2b

What is available in the area for opportunity for primitive and unconfined recreation?

Table F-196. Measures for 2b

Measures	Outcome
Acres and % total of primitive and non-primitive classes for summer recreation opportunity spectrum.	2,060 acres (94%)
Acres and % total of primitive and non-primitive classes for winter recreation opportunity spectrum.	0 acres (0%)

Describe the types of primitive recreation activities in the area.

Primitive recreation activities include wildlife observation, hiking, backpacking, fishing, and hunting.

Criteria 3: Evaluate the degree to which the area may contain ecological, geological, or other features of scientific, educational, scenic, or historic value.

Question 3a

Does the area contain rare plant or animal communities; rare ecosystem for wildlife habitat; rare ecosystem for aquatics; rare ecosystem for terrestrial; coarse scale key connectivity for multiple species, or minimally represented /rare vegetation types⁵?

Table F-197. Measures for 3a

Measures	Outcome
Miles of streams that have bull trout and/or westslope cutthroat trout	None

Measures	Outcome
Acres of whitebark pine vegetation type. This is a species in decline, identified by USFWS as candidate for listing under the Endangered Species Act (ESA), and locally, regionally and nationally rare.	There is no known existing whitebark pine though there appears to be abundance of potential whitebark pine habitat. Elevation extends to 7,200 feet, with open, exposed aspects preferred by whitebark pine.
Acres and number water howellia (listed as threatened species under the ESA) fens and bogs	None.
Minimally represented or rare vegetation types in region ⁶	None.
Species richness % of total acreage ⁷	574 acres (27%) of level 3/4.
Acres of key conservation areas for wolverine ⁸	617 acres (28%) of very high maternal habitat.
Acres of key conservation areas for mountain goat ⁹	None.
Narrative of coarse scale key connectivity for multiple species ¹⁰	Key for wolverines, high for grizzly bear, NA for lynx.

Question 3b

Are there any outstanding landscape features such as waterfalls, mountains, viewpoints, waterbodies, or geologic features?

Table F-198. Measures for 3b

Measures	Outcome
Acres and % total of scenic class 1 and 2, which have high public value.	1,827 acres (83%)
Outstanding landscapes in acres/% total (extremely steep breakland, cliffs). Land types 17, 54, 55, 72, 75	614 acres (28%)

Describe if there are any unique geologic features in the area.

To our knowledge, no caves are present in the inventory area. This area is on the slopes of the Mission Mountains and provides mountain views to the east and the Swan Valley. The ridgetop provides view to Flathead Lake.

Question 3c

Are there historic or cultural resources of historic value in the area?

None

Question 3d

Are there high quality water resources or important watershed features in the area?

This area supports bull trout and pure westslope cutthroat trout. The area has been assessed for watershed conditions under the watershed condition framework. This area is entirely within a class 1 watershed which exhibits high geomorphic, hydrologic, and biotic integrity relative to their natural potential condition.

Question 3e

Are there any special areas and/or research natural areas in the areas?

Table F-199. Measures for 3e

Measures	Outcome
Acres and % of total of special areas or research natural areas.	None

Question 3f

Are there any scientific or education features in the area?

To our knowledge, there are no known scientific or education features in the inventory area.

Criteria 4: Evaluate the degree to which the area may be managed to preserve its wilderness characteristics.

Question 4a

How can the area be managed to preserve its wilderness character?

Table F-200. Measures for 4a

Measures	Outcome
Describe the shape and configuration of the area.	Irregular shape. Western and northern boundary is adjacent to the Flathead Indian Reservation. The eastern boundary is adjacent to the Swan River State Forest. The southern boundary is adjacent to the Mission Mountains Wilderness.
Describe if there are any legally established rights or uses within the area.	None
Are there specific Federal or state laws that may be relevant to availability of the area for wilderness or the ability to manage the area to protect wilderness characteristics?	None
Describe the management of adjacent lands.	Flathead Indian Reservation lands, State forest lands, Mission Mountains Wilderness (MA 22).
Describe the current management of the area.	2 miles of closed roads; 1 mile of decommissioned or historical roads; 0 miles terra ¹¹ trails; 2 miles motorized over-snow routes; 2,181 acres (99%) allow motorized over-snow. 27% MA1 (non-forested); 73% MA15 (timberlands)
Acres and % total of wildland urban interface in the area.	0 acres
Type and extent of management restrictions within the area.	No bull trout critical habitat. 2,073 acres (94%) of lynx critical habitat 1,509 acres (69%) of grizzly bear core. 820 acres (37%) of Mission Addition inventoried roadless area #01500.

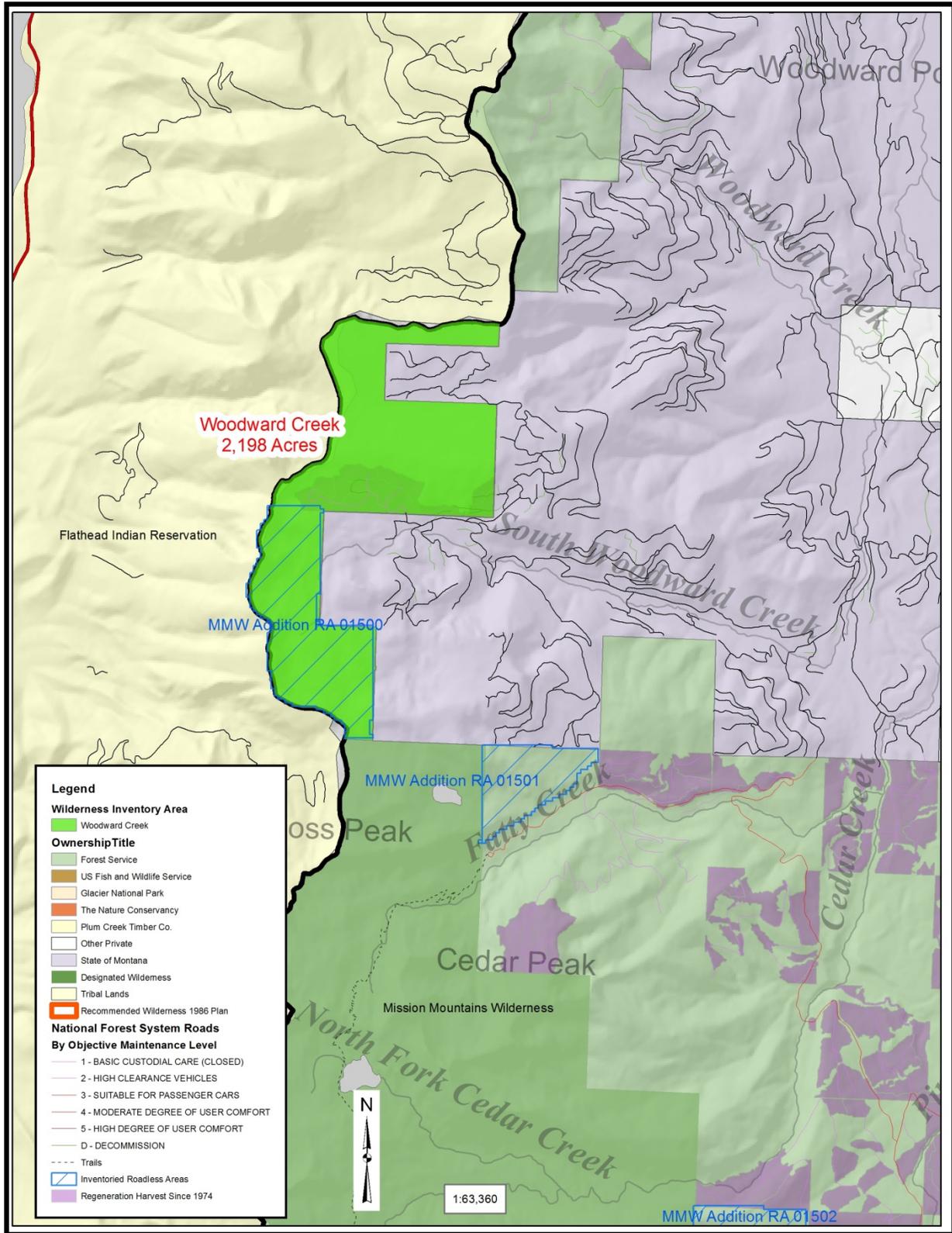


Figure F-26. Woodward wilderness inventory area

