

Field Measures of Wilderness Character

Hyalite Porcupine Buffalo Horn
Wilderness Study Area

2011

**Wilderness Institute
College of Forestry and Conservation
University of Montana**

Executive Summary

This report summarizes field measures of wilderness character collected in 2011 in the Hyalite Porcupine Buffalo Horn Wilderness Study Area (HPBH WSA) on the Gallatin National Forest in south-central Montana. During summer 2011, Wilderness Institute crews hiked every trail in the HPBH WSA and made detailed observations of measures related to the qualities of wilderness character identified in the Wilderness Act of 1964: untrammeled, natural, undeveloped, and opportunities for solitude or primitive and unconfined recreation. Wilderness Institute field leaders led fourteen trips with 58 community volunteers and covered 218 miles of system trails and 44 miles of non-system trails.

Monitoring highlights include:

- **Weeds:** 279 weed patches from 9 weed species were found within the WSA boundary. An additional 182 patches and 6 species were found in association with trails leading into the WSA. Canada Thistle and Houndstongue were the most commonly found weeds. The majority of infestations were concentrated at lower elevations within a few miles of primary trailheads (Big Creek, Porcupine Creek), or associated with old burns (Eightmile Creek); the central higher elevation spine of the WSA was largely weed free. The highest concentration and diversity of weeds was found at Big Creek, where 156 patches and 9 species were recorded within 3 miles of the trailhead.
- **Wildlife:** A total of 318 wildlife encounters were recorded (direct and indirect), including wolves (2 individuals sighted in Teepee Creek) –black bear (1 sighted), grizzly bear (female with three cubs north of Windy Pass), mountain goats (19 sighted), and pika (19 sighted).
- **Erosion:** 61 waterbodies with signs of erosion due to recreation were documented; 80% were on streams, including 4 recorded as having severe erosion.
- **Installations and developments:** 242 installations and developments were recorded throughout the WSA, including water diversions, bridges, cairns, fences, and hitching posts.
- **Signs:** 165 signs were recorded within the WSA, 45% of which were trail junction signs. The majority (69%) of signs were in good condition.
- **Trail width:** Deviation from single-track (braided or double-track) was recorded for 15.5 miles of trail within the WSA, but trip notes suggest this number is likely low due to incomplete start/stop data for this measure.
- **Non-system trails:** 44 miles of non-system trails were surveyed, including 109 non-system trails or trail fragments not yet within the USFS database. Time constraints in the field limited complete surveying of all non-system trails.
- **Mechanized and motorized use:** Evidence of unauthorized bicycle and motorcycle use was recorded along 13 and 11 trail sections within the WSA, respectively.
- **Trailheads and people encounters:** High proportions of vehicles counted and people encountered near Windy Pass, East Fork Hyalite, Hyalite Creek, Porcupine Creek and Blackmore suggest concentrated use of these areas. 79% of people encounters were hikers, and 12% were with horses and/or stock. Mountain bikers were encountered on 15 occasions.

- **Auditory intrusions:** Airplane noise accounted for 89% of the 182 noise intrusions recorded throughout the WSA. Vehicle noise (6%) was only heard from trails in the southeastern portion of the WSA.
- **Visual intrusions:** 39 visual intrusions were observed from within the WSA, including cities or towns, buildings, radio towers, highways, clearcuts, and dirt roads. Visual intrusions were evident sporadically along the length of the Gallatin Crest Trail (#96) and infrequently elsewhere.
- **Campsites:** 107 campsites were inventoried within the WSA, with the majority (52%) located around Heather, Emerald, Hyalite, Golden Trout and Crater lakes. Of the campsites monitored, 22% were minimally impacted, 48% were moderately impacted, and 29% were highly impacted. Nearly all campsites with high impact scores were located less than 200 feet from water.

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INTRODUCTION

This report summarizes field measures of wilderness character in the Hyalite Porcupine Buffalo Horn Wilderness Study Area (HPBH WSA) on the Gallatin National Forest in south-central Montana. The HPBH WSA, like other Forest Service Wilderness Study Areas in Montana, was designated by the U.S. Congress through the Montana Wilderness Study Area Act of 1977. The Act requires that the Forest Service maintain the wilderness character of the WSA as it existed in 1977. In 2009, the Wilderness Institute, part of the College of Forestry and Conservation at the University of Montana, collaborated with the Aldo Leopold Wilderness Research Institute, the Forest Service, and several local non-governmental organizations to develop field measures of the four qualities of wilderness character identified in the Wilderness Act of 1964 (Pub.L. 88-577) and described by Landres et al (2008) in *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System*. This report summarizes 2011 field monitoring data in the HPBH WSA for selected measures of these four wilderness character qualities: 1) untrammeled, 2) natural, 3) undeveloped and 4) opportunities for solitude or primitive and unconfined recreation. During summer 2011, Wilderness Institute crews hiked every trail in the HPBH WSA and made detailed observations related to these qualities. Measures of naturalness focused on invasive plants, wildlife, and lake and streambank erosion. Undeveloped measures included installations and developments (both recreational and non-recreational), signage, and trail closure devices. Measures of opportunities for solitude and primitive and unconfined recreation included trail conditions, non-system (user created) trails, campsite conditions, evidence of mechanized and motorized use in places that are not designated for such use, recreational use, motorized noise, and visual intrusions. The single measure of the untrammeled quality of the area was weed pulling by Wilderness Institute crews (all other measures of untrammeled require non-field related work). Results for 16 features (attribute groups; see Appendix 1) are reported here, often accompanied by tables and maps. The field data was combined with GIS-derived measures such as elevation and longitude and latitude.

Please note that this project emphasized collection of quantifiable field data appropriate for collection with GIS-based technology. Many aspects of wilderness character were not evaluated as part of this project, either because non-field measures were required (e.g. agency actions that impact trammeling or recreation opportunities) or because data collection was beyond the scope of this project (e.g. air and water quality data). Furthermore, these protocols were developed to monitor wilderness character in Wilderness Study Areas in Montana, and thus some of the monitoring conducted may not be applicable to designated wilderness (e.g., monitoring evidence of motorized use in areas not designated for motorized travel). For a detailed description of wilderness character monitoring for designated wilderness, please see: <http://www.wilderness.net/index.cfm?fuse=WC>.

This project was conducted as part of the Wilderness Institute's Citizen Science Program, which has recruited community volunteers to help monitor selected components of wilderness character in designated Wilderness and Wilderness Study Areas since 2005. This program was founded on the belief that including community members in on-the-ground stewardship of public lands builds community capacity, increases public involvement in nearby public lands, and improves the dialogue between local communities and managing agencies.

Wilderness Institute field leaders led small groups of community volunteers on multi-day backcountry trips, surveying all mapped trails (both system and non-system) within the WSA as well as new non-system (user-created) trails. Fourteen trips were conducted with 58 volunteers who covered 218 miles of system trails and 44 miles of non-system trails. In all, 89% of system trails and 66% of known non-system trails within the WSA boundary were monitored, along with 48 miles of trail leading into the

WSA. Difficult travel due to snow depth, downed trees across old burned areas, and overgrown (e.g. not found) trails prevented complete coverage (Figure 1). Approximately 11 miles of trail were snow-covered or had intermittent snow patches, limiting monitoring of some attributes (e.g. weeds), along these sections (see Figure 1). In addition to data collection, crews also opportunistically hand-pulled weeds and conducted other restoration activities related to the maintenance and propagation of native plants.

This work was funded by the Forest Service, the National Forest Foundation, the Patagonia Foundation, and the Cinnabar Foundation. For more information on monitoring protocols or results, or on the Wilderness Institute, please contact us at: wi@cfc.umt.edu or (406) 243-5361.

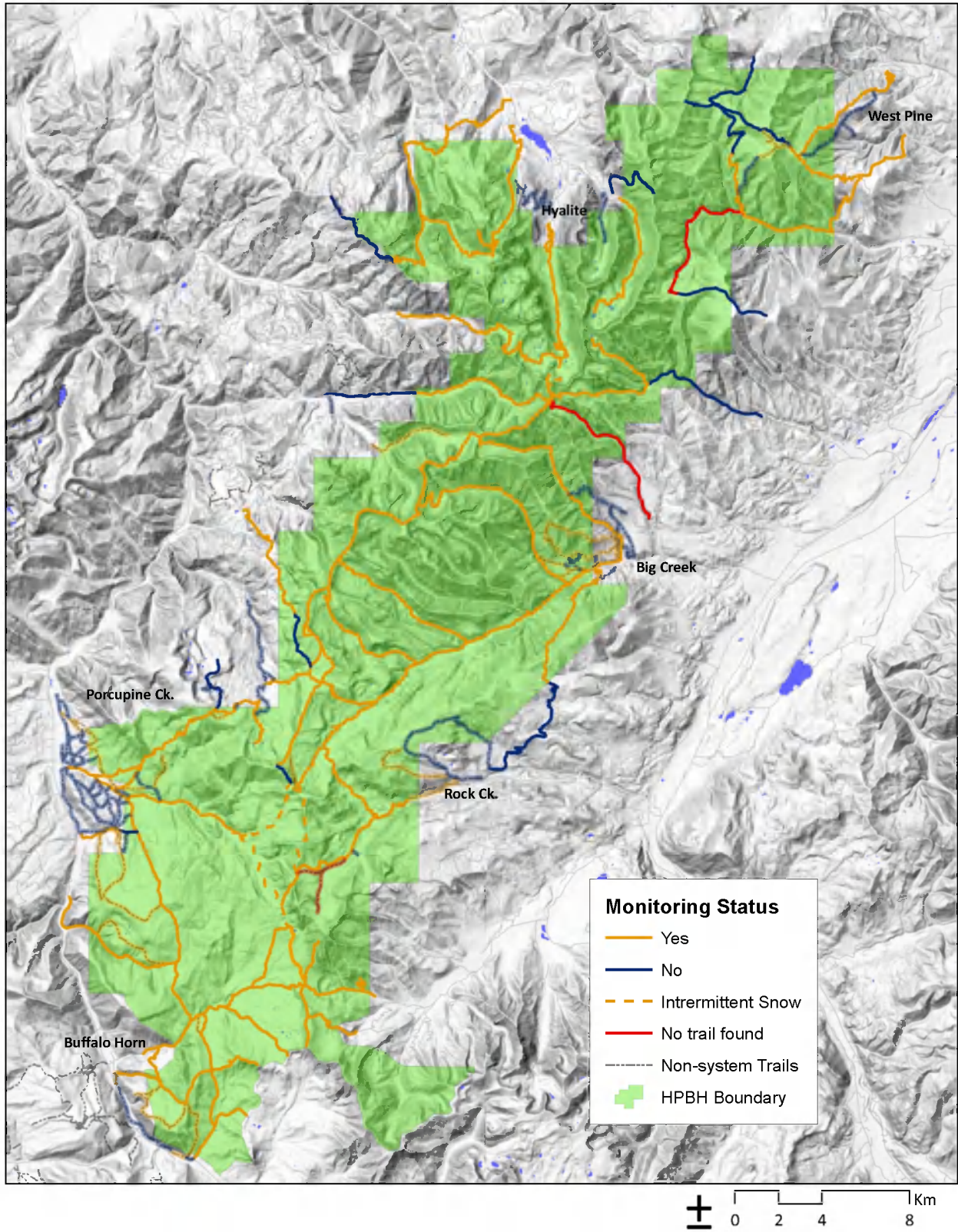


Figure 1. System and non-system trails monitored within the HPBH WSA in 2011.

DATA MANAGEMENT

The following section describes the steps taken to collect and analyze field measures of wilderness character (attributes) in the HPBH Wilderness Study Area: (1) protocol development, (2) field data collection, (3) data analysis and mapping, and (4) data reporting.

Protocol Development

The Wilderness Institute has been involved in mapping wilderness attributes since 2005 and has developed standardized protocols for that purpose. In 2009, measurement protocols and database design were expanded to specifically monitor selected elements of wilderness character as described in Landres et al. (2008). These new and expanded measurement protocols were implemented within a menu-based data file containing all of the desired attributes with predefined categories for data entry. This data dictionary file was then loaded onto Trimble GeoExplorer units, utilizing Trimble Pathfinder software. A full list of the collected attributes is given in Appendix 1, along with their descriptions. Detailed protocols are available upon request.

Data Collection

Data was collected between June and September 2011. Field crews recorded observations of each attribute when encountered and entered them into GPS units using the data dictionary. All attributes were mapped as point, line, or area features. Photos were taken of attributes, where relevant. After each trip, GPS data and digital photos were checked for quality control and uploaded to a network server. A Microsoft Excel database, as well as a geodatabase containing all attribute data and photos is also available upon request. Back in the office, field leaders also wrote written reports summarizing additional observations not captured by data collection protocols. For example, snow cover, general trail conditions, route deviations, and any additional relevant context were detailed in these qualitative reports. A summary of these qualitative findings, by area and trail number, is found in Appendix 2.

Data Analysis

GPS files were differentially corrected using Trimble Pathfinder Office software (Trimble Navigation Limited 2009). Differential correction is a process in which GPS coordinate data can be compared with a fixed spatial reference and adjusted to reduce any systematic error in position that often occurs with field GPS data. After this process was completed and data for each attribute group combined from individual GPS units, all data were imported into a spatial geodatabase using ArcGIS (ESRI 2009). All monitoring data was re-projected into North American Datum 1983 as Universal Transverse Mercator (UTM) grid coordinates in zone 12. All spatial analyses were performed using ArcGIS (ESRI 2009). Monitoring attribute summaries are provided in a combination of tables, figures, and maps.

Data Reporting

This report presents visual and/or numerical summary data from all attribute groups related to the four primary qualities of wilderness character (see Appendix 1). Note that this report does not summarize every attribute collected; for example, much more detail was collected for weeds, campsites, and wildlife observations than is summarized here (see Appendix 1). Furthermore, many attributes have

associated pictures that are not compiled in this report. A comprehensive dataset and photographs of collected attributes are available upon request.

FIELD MEASURES OF WILDERNESS CHARACTER

The following sections describe field measures used to assess the four primary qualities of wilderness character identified in the Wilderness Act of 1964: untrammeled, natural, undeveloped, and opportunity for solitude or primitive and unconfined recreation. After a brief explanation of each wilderness character quality, the data collected for each indicator is summarized. Please note that some aspects of wilderness character were not evaluated as part of this project (see introduction). A comprehensive list of database attributes and the associated qualities of wilderness character can be found in Appendix 1.

I. UNTRAMMELED QUALITY

Wilderness is “an area where the earth and its community of life are untrammeled by man” (Wilderness Act, 1964). Untrammeled wilderness has come to signify areas free from modern human control and actions which manipulate nature, even when taken to restore natural systems (Landres et al., 2008). For this project, weed control action constituted the only trammeling data collected. Actions taken by field crews to manage weed infestations diminish the untrammeled character of the HPBH WSA. Agency actions that affect the untrammeled quality of the HPBH WSA (e.g. any action that disrupts the naturally functioning ecosystem or the unencumbered nature of the area, such as fire suppression, herbicide treatment of invasives, and fish stocking) are beyond the scope of this field-based study and are not reported here.

Weed Control Action

Of the 461 weed patches encountered, hand pulling was undertaken on 79 patches. Most pulled patches were Houndstongue (76%), followed by Canada Thistle (9%), Bull Thistle (8%), Orange Hawkweed (6%), Meadow Hawkweed and Sulphur Cinquefoil (4%), Common Tansy (2%), and Common Mullein (1%). Two patches had no recorded information on weed control action. Seventeen of the pulled patches were within the HPBH boundary. The majority of the remaining weed patches were either species where hand-pulling is not an effective deterrent to subsequent growth, or had large or linear distributions, making comprehensive hand-pulling impractical. Fifteen patches were partially pulled due to patch size or other logistical constraints. Figure 2 shows locations of patches where weed control actions were conducted.

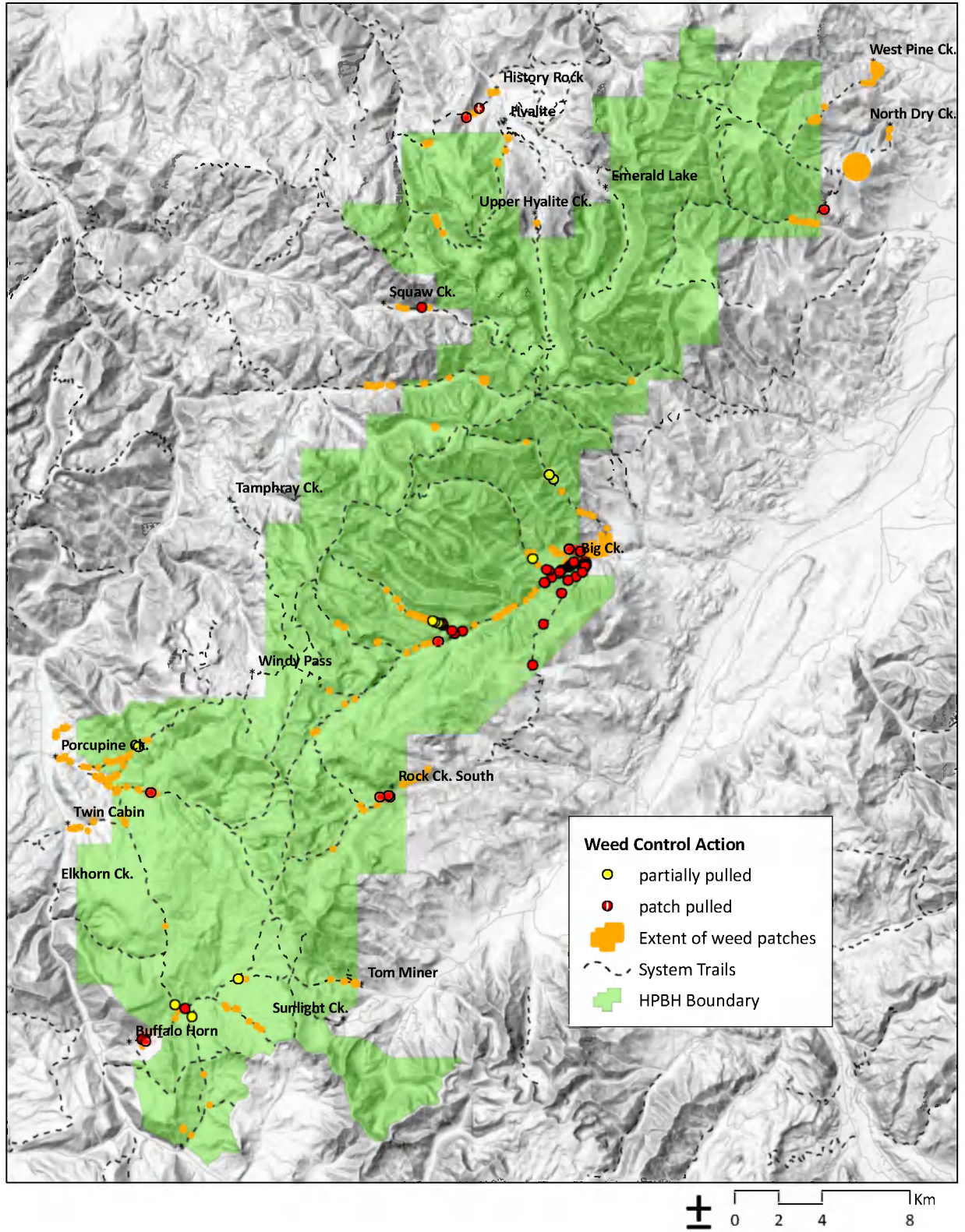


Figure 2. Location of weed patches that were pulled (partially or completely).

II. NATURAL QUALITY

Natural quality reflects the extent “wilderness ecological systems are substantially free from the effects of modern civilization” (Landres et al., 2008). Natural quality is assessed by monitoring attributes that reflect the integrity of ecological systems, such as species composition and physical characteristics. For this project, we identified three measures of naturalness appropriate and feasible to monitor with field protocols: 1) distribution and prevalence of non-indigenous plant species (weeds) along trail systems; 2) visible sign of select wildlife populations (scat and/or other signs of carnivores, bears, other megafauna); and 3) user-created erosion associated with lakes and streambanks. Within these indicator categories, multiple attributes were recorded (see Appendix 1) that capture the detail and context of weed infestations, wildlife signs, and erosion events. Please note that not all attributes are summarized in the following sections, but are available in the associated electronic data files.

Weeds

The invasion and spread of non-native weeds is a growing problem across western landscapes, and poses a serious threat to native biodiversity. Weeds have few, if any, natural controls on their reproduction and distribution, and occurrences closely follow areas of highest use and disturbance. By recording weed type, location, size and intensity of the infestation land managers can identify priority areas for treatment and eradication. Furthermore, ecological, topographic and physical associations of weed patches can expose patterns of invasion and further understanding of the multiple factors that influence the spread of weeds in remote areas. In the following section we highlight and summarize weed monitoring data; please note that we do not provide visual or graphical summaries of all attributes collected. Patch-specific information, as well as additional attribute data, is located in the associated electronic database. Weed patches occurring on trails leading into the WSA but outside the WSA boundary are included in this report since they contribute to overall trail conditions, and could be a source for future infestations if left untreated. Monitoring was focused along trails and therefore patches not visible from the trail may have gone undetected. Please also see Appendix 2 for descriptive weed information by trail number where interpretation of weed data is enhanced by contextual information collected via trip reports.

Weed Species

A total of 461 weed patches were recorded, representing 15 species. Of these, 279 (60.5%) and 9 species were recorded within the HPBH boundary, while the remaining 182 (39%) and 6 additional species were found on trails leading into the WSA. Canada Thistle and Houndstongue patches were mapped most often, representing 40% and 26% respectively of all weed patches (Figures 3 and 4). Orange Hawkweed infestations were noted approximately 5 miles up Big Creek trail (#180) and on Bark Creek trail (#159), but identification was uncertain since plants were not yet flowering.

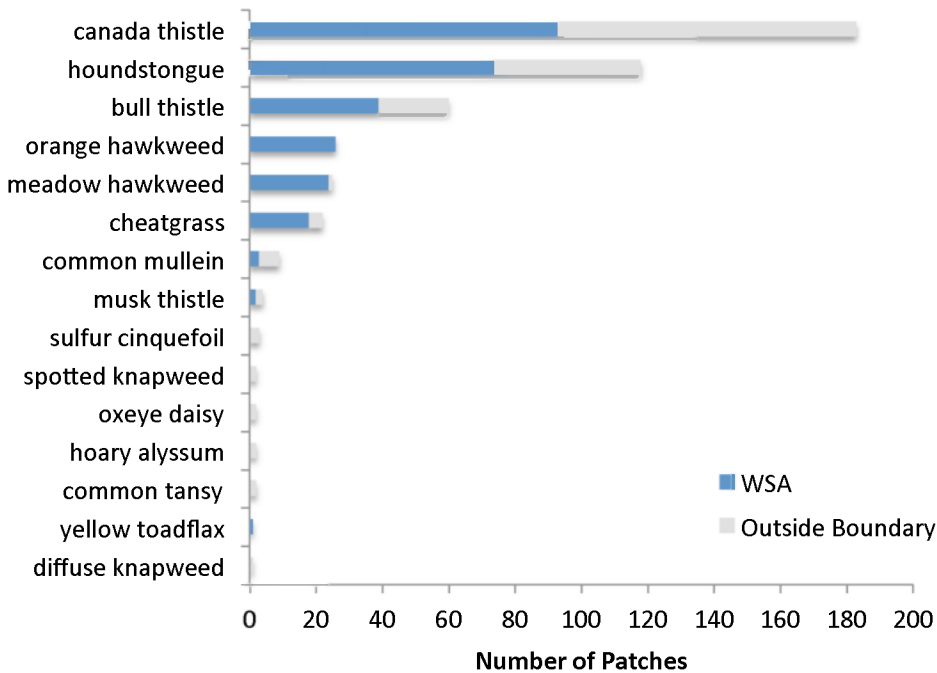


Figure 3. Number of weed patches by species

All documented weed infestations were located along trails, with 195 weed patches (88%) on system trails and the remaining 84 weed patches (18%) observed on non-system trails. The majority of infestations were concentrated at lower elevations within a few miles of several high-use trailheads, particularly Big Creek and Porcupine Creek; the central higher elevation “spine” of the WSA was largely weed-free. The highest concentration and diversity of weeds was found at Big Creek, where 156 patches representing 9 species were recorded within 3 miles of the trailhead. Additional infestations were associated with old burns along Eightmile Creek. Due to the extensive nature of weed patches and non-system trails in these areas, time constraints prevented exhaustive monitoring efforts, and trip reports suggest a significant number of unsurveyed weed patches (see Appendix 2).

Weed distribution also varied by species. Canada Thistle and Meadow Hawkweed were most prevalent near the Porcupine Creek trailhead, while the majority of Houndstongue, Bull Thistle, and Cheatgrass were recorded near the Big Creek trailhead (Figure 4). Common Mullein was only observed in the northwest portion of the WSA on West Pine (#139) and Eightmile Creek (#132) trails (Figure 4).

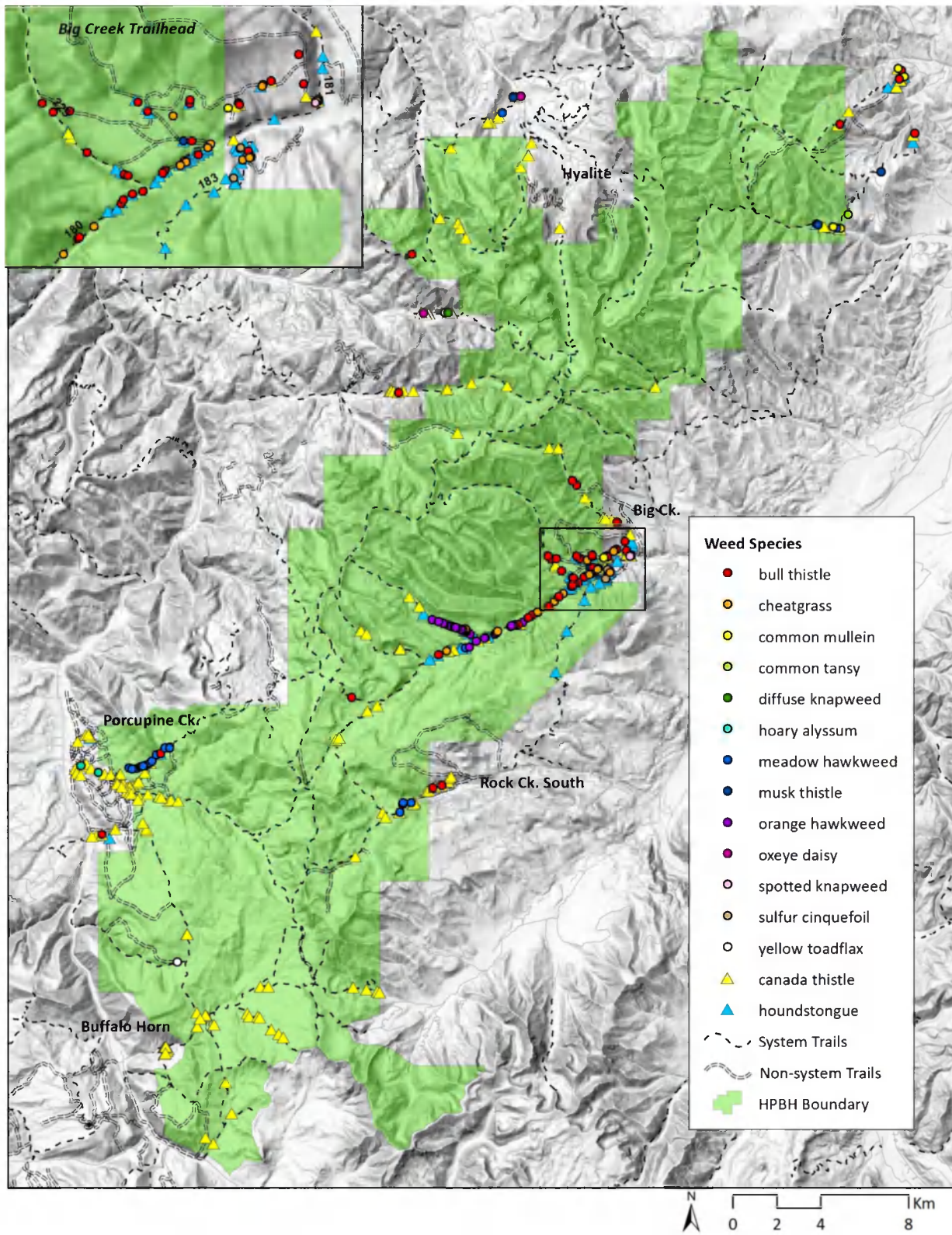


Figure 4. Distribution of weed species, with area of detail focused on Big Creek trailhead.

Size of Infestation

Whenever possible, the spatial extent of weed patches was measured in the field by walking the patch perimeter with a GPS. For patches recorded as a point or line, an ocular estimate of patch width was recorded and the total patch area was calculated using GIS analyses. A total of 61 acres of weeds were mapped, with 22 acres occurring inside the WSA boundary. It is important to note that for many larger patches, the entire extent of the infestation was not mapped, particularly when the terrain or distance from trail made walking the entire perimeter unfeasible. Therefore, area values should be considered a minimum area of coverage. Please see Appendix 2 for trail-specific information on weed infestations that were incompletely quantified

Nearly all patches (99%) were recorded as less than 1 acre in size, with only 6 patches estimated as larger than 1 acre. This is shown quantitatively and spatially in Figures 5 and 6. The largest weed patch, Musk Thistle, was estimated at 18 acres and occurred outside the WSA boundary along the Eightmile trail (#132). Inside the WSA, the largest weed patch observed was Canada Thistle at 1.6 acres in size. Patches over 0.1 acre in size were made up of 7 species—Canada Thistle, Bull Thistle, Houndstongue, Meadow Hawkweed, Musk Thistle, Orange Hawkweed, and Common Mullein (Figure 6).

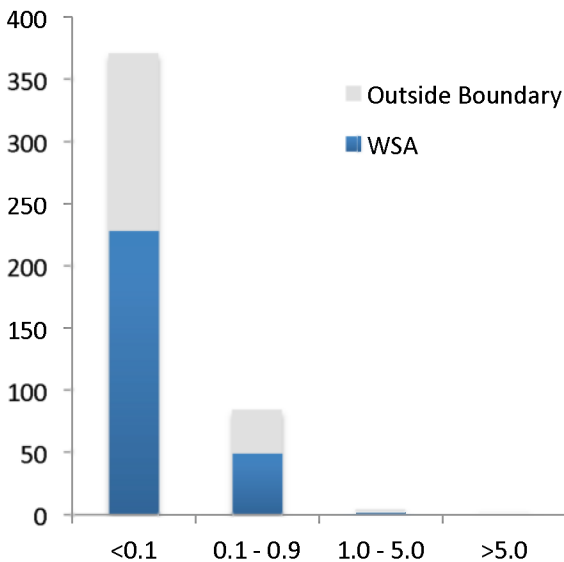


Figure 5. Number of weed patches by size class (acres).

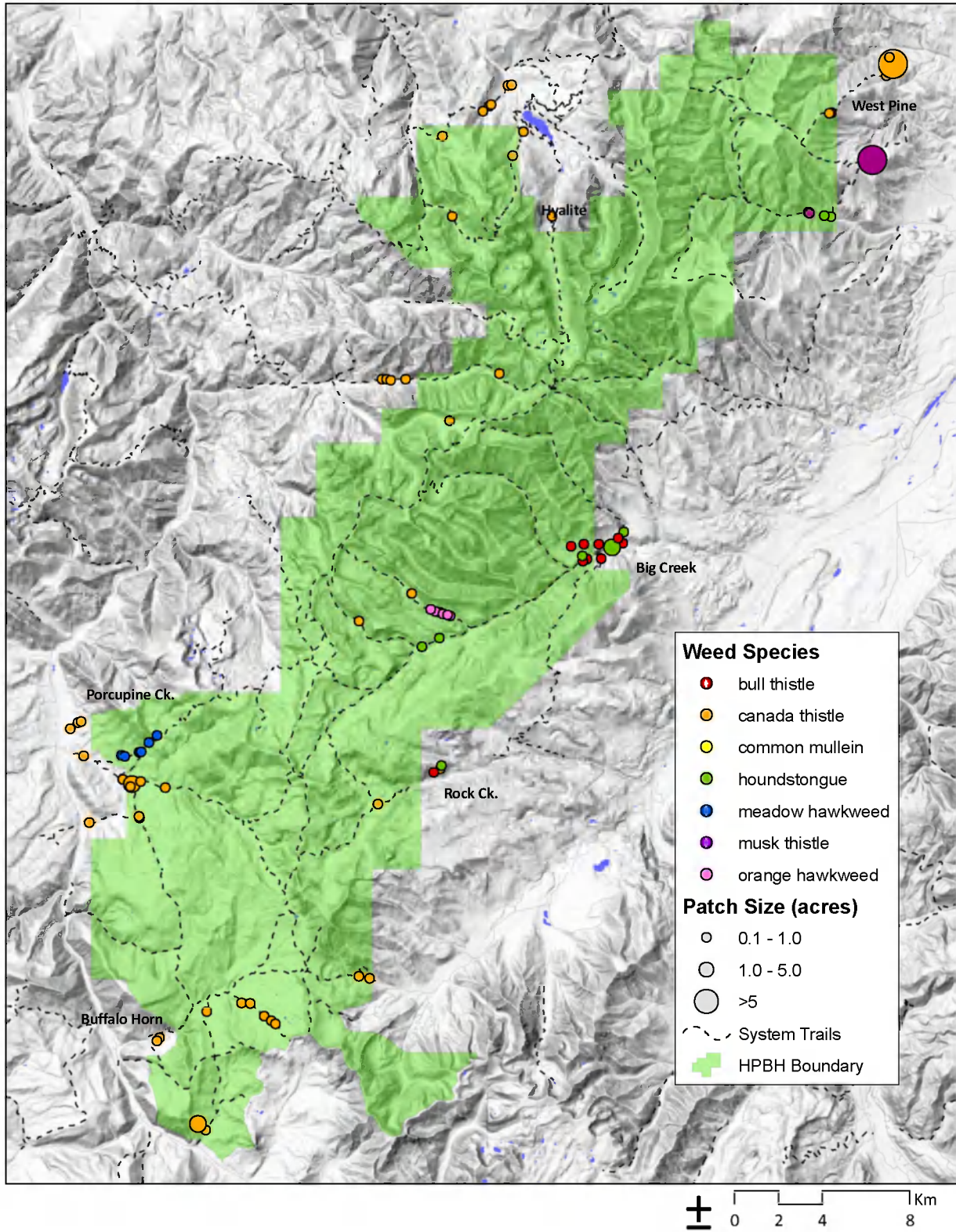


Figure 6. Distribution of largest 89 weed patches (>0.1 acre in size) by species and size.

Spatial Distribution, Weed Density, and Acres Infested

The spatial distribution of each weed patch was categorized as clumpy (one dense patch), scattered-even (evenly distributed across the infestation area), scattered-patchy (distinct patches scattered across the infestation area), or linear (along a trail or stream). To measure the density of weeds within each patch, the percentage of an area within an infestation that a species covered was visually estimated from 0-100% at 5% intervals. To account for any differences in how spatial parameters were collected in the field, the acres infested was estimated for each species as the patch size multiplied by patch density. For example, a large scattered-patchy patch could also be recorded as several smaller distinct “clumpy” patches, but density estimates standardize the calculation of total infested area .

Most patches were scattered-patchy or clumpy in distribution (47% and 30%, respectively). Four patches were missing distribution information. Spatial distribution of patches was not associated with patch size. However, distribution did vary by species (Figure 7). For example, some species were only observed in clumpy distribution (e.g. Common Tansy, Spotted Knapweed, and Sulfur Cinquefoil), while others were consistently recorded as scattered-patchy (e.g. Diffuse Knapweed and Yellow Toadflax). Only 2 species were regularly observed distributed linearly along trails or streams (Hoary Alyssum and Oxeye Daisy).

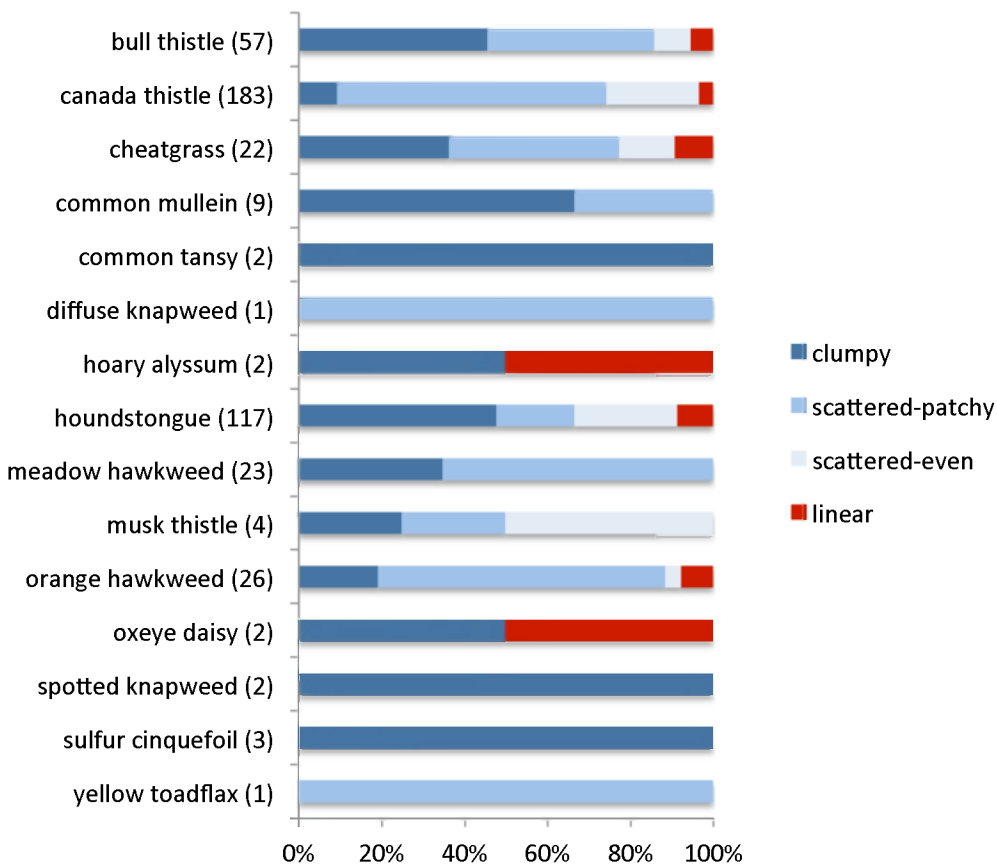


Figure 7. Proportion weed patches of each distribution type by species.

The majority of patches (64%) had weed densities <30%. Two patches were missing density information. All patches with weed density over 55% were small (<0.1 acre in size), whereas patches over 1 acre in size had densities of 25% or less. See Figure 8 for visual representation of weed density and patch size.

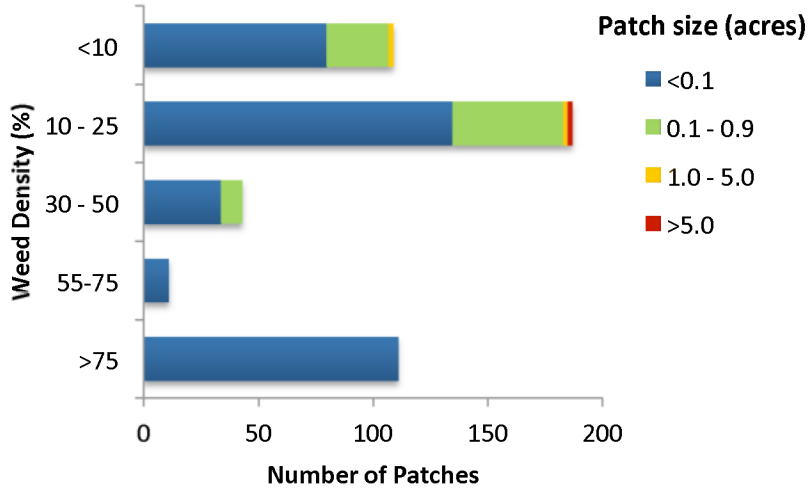


Figure 8. Number of weed patches by density and patch size.

Musk Thistle had the largest estimated acres infested (40 acres), followed by Canada Thistle (10 acres), Bull Thistle (5 acres), and Houndstongue (1 acre). All other weed species had infested areas less than 1 acre (Figure 9). Please note that estimates of acres include patches found outside the HPBH boundary.

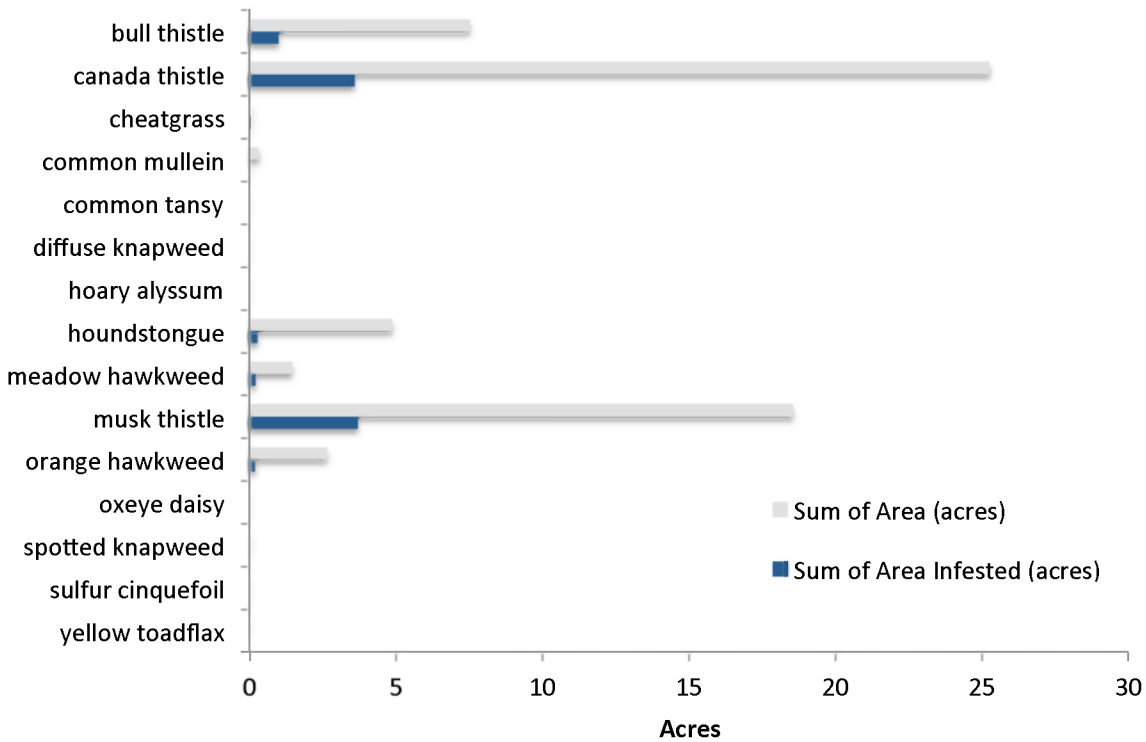


Figure 9. Total area of weed patches and estimated acres infested by species.

Primary and Secondary Disturbance Types

Weed patches are often associated with disturbance. We recorded the primary and secondary disturbances associated with each mapped weed patch. The primary disturbance is the most likely vector for infestation, and the secondary disturbance reflects the broader disturbance matrix that may be present. For example, a weed patch found along a trail that passes through a burned area would have “trail” and “fire” listed as the respective primary and secondary disturbances.

The primary disturbances associated with most mapped weed patches were trails and livestock (58% and 33% respectively; Figure 10). The remaining patches were associated with a range of disturbances, including roads, trailheads, fire, flooding, campsites, cabins, and game trails. Four patches categorized as “other” were associated with a recent landslide. Secondary associations were also mostly trails and stock (37% and 18% of all patches, respectively), but also included water, trailheads, campsites, and fire. No secondary association was reported for 163 weed patches. The majority of weed patches associated with water were Canada Thistle (91%).

Trails are the primary access routes through the WSA, and it is important to recognize that the high proportion of weeds associated with trails is partly a reflection of sampling bias, although off-trail areas were sampled if any weed patches were opportunistically encountered. Nonetheless, the data clearly show that weeds commonly occur in close proximity to trails, trailheads, and areas of livestock use, and that these serve as important vectors for overall weed dissemination within the HPBH.

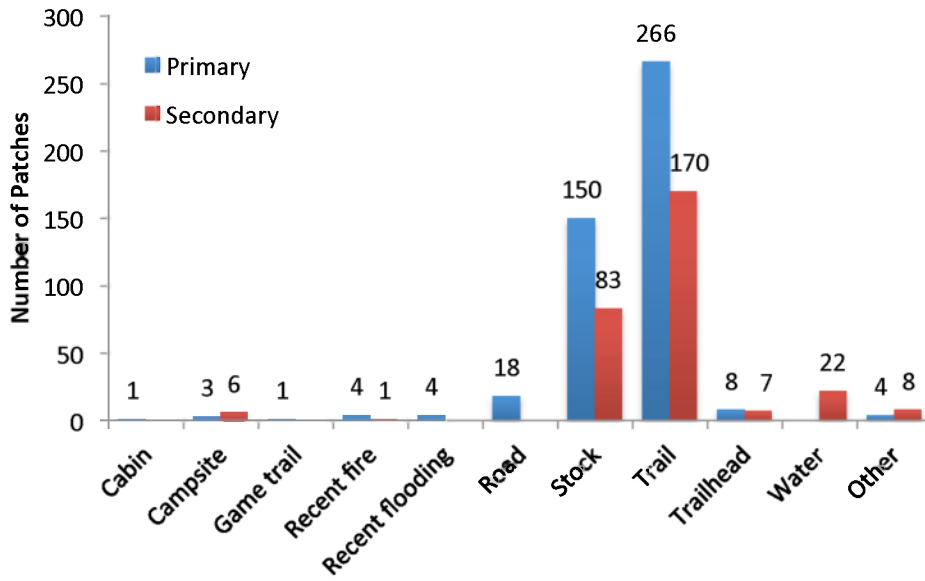


Figure 10. Primary and secondary disturbances associated with weed patches.

Ecological Associations

Ecological associations, including ecosystem type, dominant lifeform, and habitat were recorded for each weed patch observed to provide an ecological context for understanding weed distributions. Please see Appendix 1 for comprehensive list of ecological attributes collected and the associated database for detailed data on ecological attributes not covered in this report.

The majority of weed infestations were encountered in forest (>10% tree cover) or grassland ecosystems (51% and 42%, respectively), with the remaining found in riparian, wet meadow or scree (Figure 11). However, across ecosystem types, the dominant lifeforms associated with most weed patches were graminoid (32%), forb (30%), and woody shrub (24%), with only 15% of patches in conifer forest. Dominant life form information was missing for 26 weed patches. The majority of weed species were distributed across lifeform categories. However, some weed species were more often associated with specific lifeforms. For example, Cheatgrass and Meadow Hawkweed were most often associated with graminoids, while Oxeye Daisy was found within either forbs or woody shrubs (Table 1).

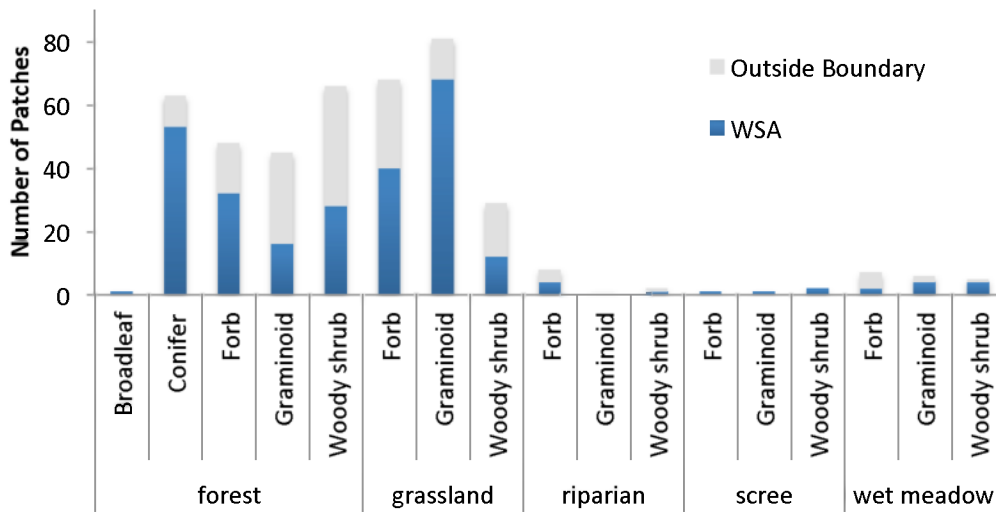


Figure 11. Ecosystem type and dominant lifeform associated with weed patches.

Table 1. Dominant lifeform associations by weed species.

Species	<i>Dominant Lifeform</i>					Total
	Broadleaf	Conifer	Forb	Graminoid	Woody shrub	
bull thistle		15	7	17	14	53
canada thistle	1	15	73	39	40	168
cheatgrass		3		16	3	22
common mullein		2	1	2	4	9
common tansy		1			1	2
diffuse knapweed					1	1
hoary alyssum		1			1	2
houndstongue		14	38	30	33	115
meadow hawkweed		2	3	18		23
musk thistle		2		1	1	4
orange hawkweed		8	8	8	1	25
oxeye daisy			1		1	2
spotted knapweed					2	2
sulfur cinquefoil				1	2	3
yellow toadflax			1			1
Total	1	63	132	132	104	435

Habitat types associated with each infestation were identified based on the hierarchical classification system of series, type, and phase developed by Pfister et al (1977). This does not necessarily represent the most abundant or dominant species associated with the weed patches, but rather the species identified by Pfister et al. (1977) as potential climax.

Pfister habitat type information was recorded for 239 weed patches occurring in the forest ecosystem type (Figure 12). The majority of these weed patches (59%) were associated with Engelmann Spruce (*Picea engelmannii*) climax series. The remaining patches were Douglas-fir (*Pseudotsuga menziesii*; 31%), Subalpine Fir (*Abies lasiocarpa*; 10%), and Lodgepole Pine (*Pinus contorta*; <1%). Nearly half of all patches, and the majority of weed species (71%) were associated with the Mallow Ninebark (*Physocarpus malvaceus*) habitat type within the Subalpine Fir and Douglas Fir series. Habitat type series, type and phase for each patch are available in the associated database.

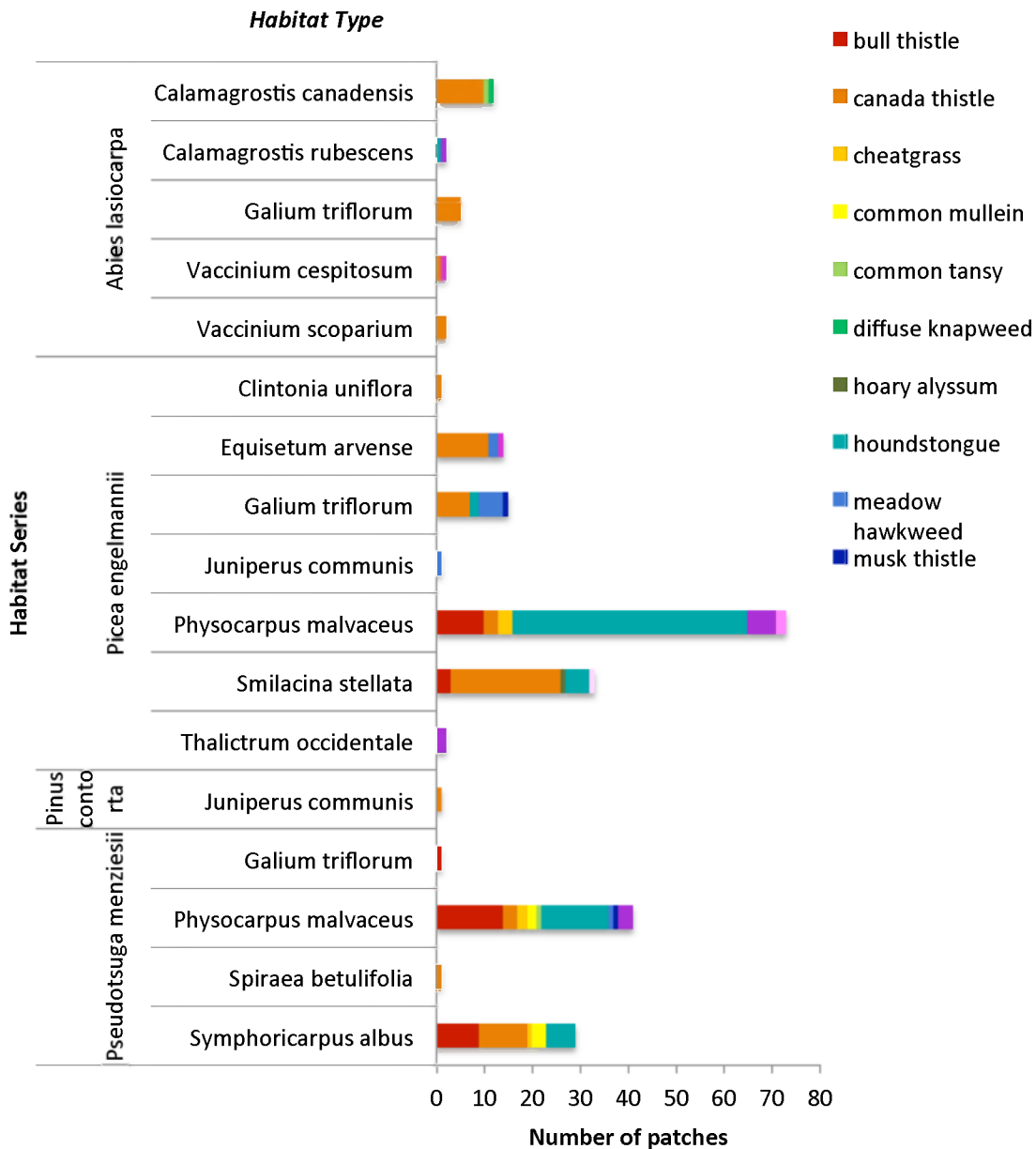


Figure 12. Habitat type classification associated with weed species in forest.

Distance to Water

To assess basic physical associations with mapped weed patches, we measured distance to water in 3 distance classes (0-10 ft., 10-50 ft., and greater than 50 ft.). The majority (68%) of weed patches were located over 50 feet from a water source (Figure 13). Consistent with observed water-mediated disturbance (see Figure 11), the majority of patches within 10 feet of water were Canada Thistle (88%). Other species found in close proximity to water were Houndstongue (8%), Bull Thistle (2%), and Yellow Toadflax (2%). Three patches had no water distance information recorded.

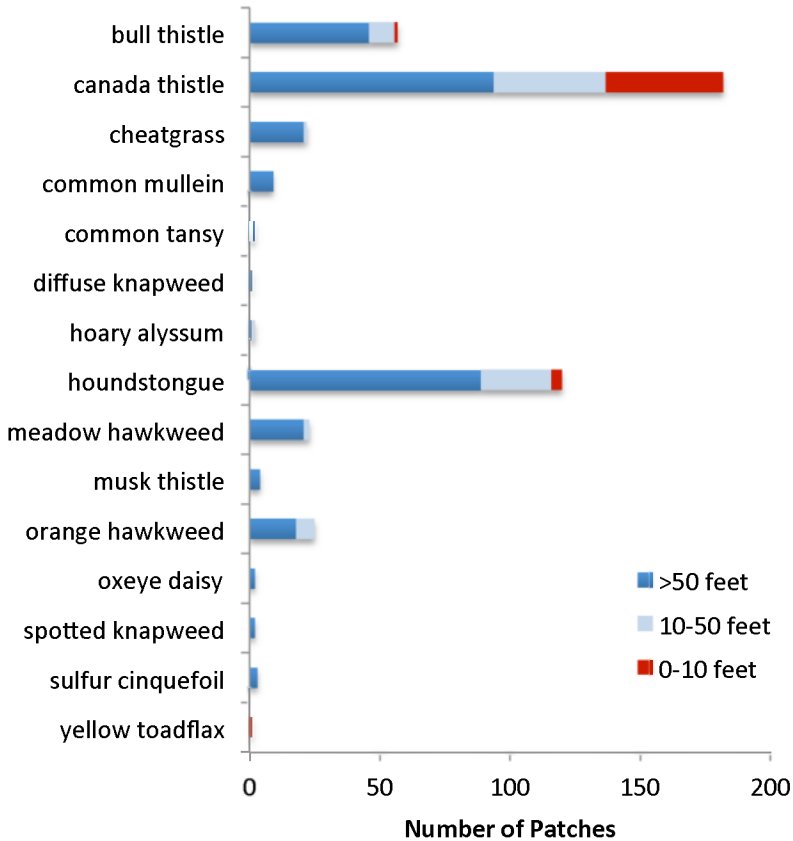


Figure 13. Distance of weed patches to water by species.

Wildlife Encounters

Trails represent important corridors of travel for many wildlife species. We documented wildlife use of all trails within the WSA, by recording direct and indirect wildlife encounters. Wildlife was identified by species if possible, and otherwise was classified by family or into major groups (e.g. bear, large carnivore, or furbearer). The type of encounter was recorded as a sighting (e.g. visual), auditory, track, or scat. Photos were taken when possible to verify identification, and are available upon request.

Given that nearly all monitoring occurred on trails, this attribute documents relative use along trails, not wildlife distributions across the WSA. Also, sampling is opportunistic, and the number of encounters does not equate to the number of individuals, since one individual is capable of more than one sign (e.g. multiple scats along a trail segment may belong to one individual), or type of sign (e.g. tracks and scat).

Wildlife Species & Encounter Type

A total of 318 wildlife encounters were reported of which 298 (94%) were within the WSA boundary. The majority (75%) of encounters were indirect (e.g. tracks, scat, or other sign; Figure 15), while the remaining 25% were direct (visual or auditory; Figure 16). Large carnivores (e.g. canid and felid species) were most prevalent (45%), including 2 wolves observed chasing a bull elk down Teepee Creek. A total of 67 bear sign were recorded, including 3 collected hair samples, 1 sighting of a black bear, and a close encounter with a female grizzly with 3 cubs. All 38 furbearer encounters were indirect and consisted of tracks or scat. Nineteen visual observations and 4 molt sign of mountain goats were reported. All pika and hoary marmot were directly observed, with 19 and 7 total detections, respectively. Other wildlife, including birds and other ungulates represented the remaining 7% of observations. Figures 14, 15 and 16 numerically and spatially summarize these findings.

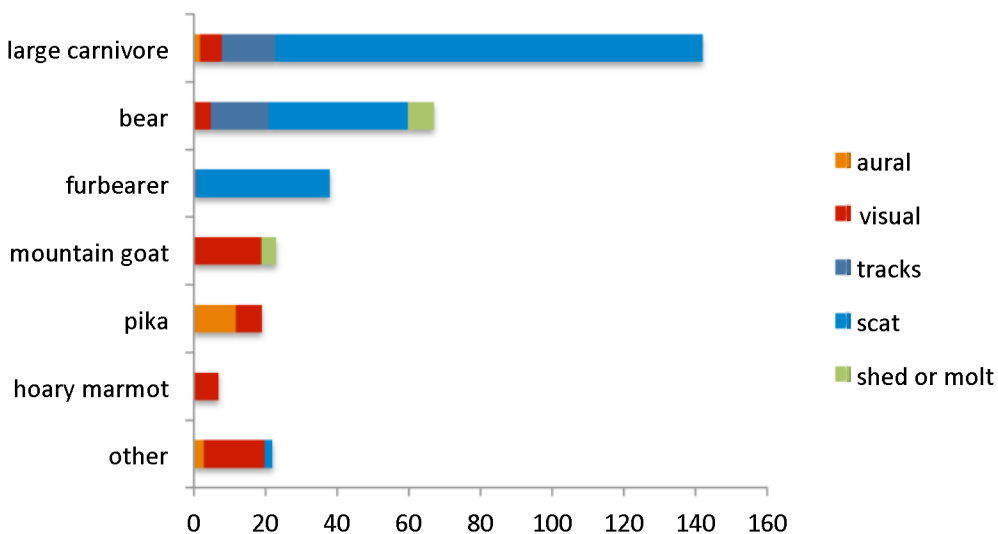


Figure 14. Number of wildlife encounters by taxonomic group (large carnivore includes all canid and felid species).

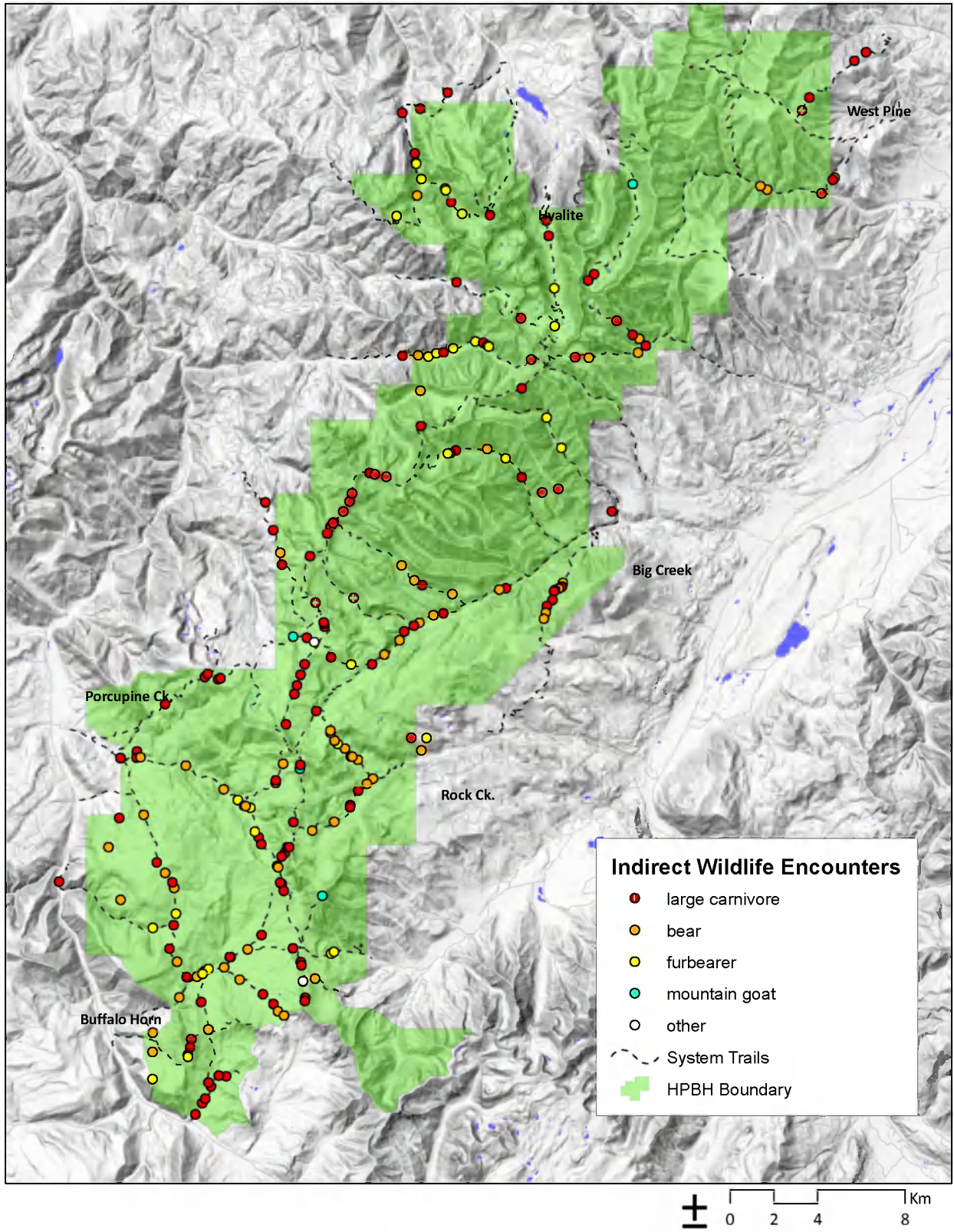


Figure 15. Location of indirect wildlife encounters (e.g. tracks, molt, scat or other sign).

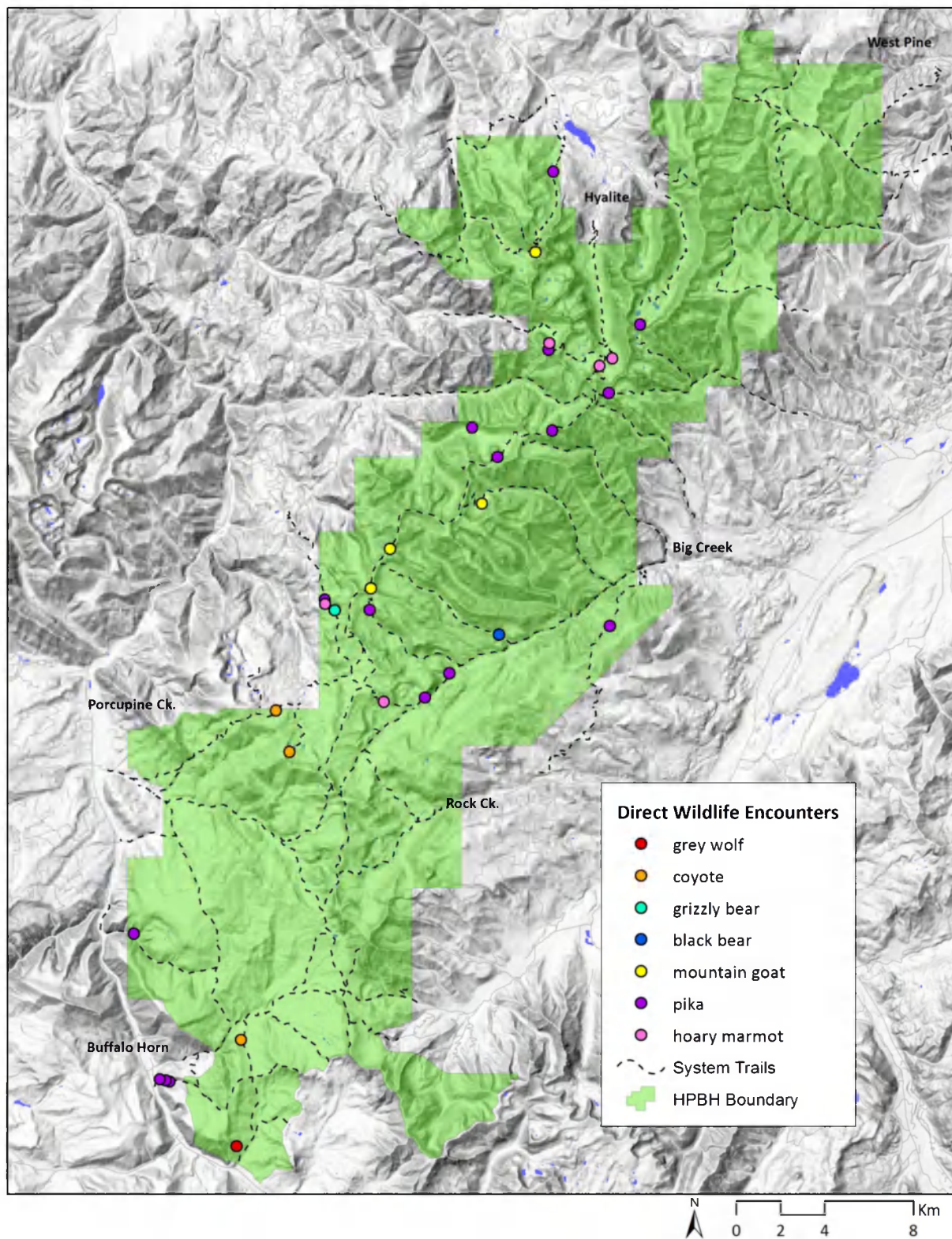


Figure 16. Location of direct wildlife encounters (e.g. visual/aural) by species.

Water Erosion

Wilderness character monitoring included documenting erosion events along waterbodies that were a result of recreational use (please note that erosion mediated by uncontrolled run-off along the trail was not monitored). Impacted areas were categorized by landform as stream, spring, wetland, pond, or lake. The width of streams was measured at bankfull height. For wetlands, ponds, and lakes, size was estimated in acres. For each impacted waterbody, erosion severity was categorized as slight, moderate, or severe (please refer to protocols available with supplementary materials for detailed descriptions of categories). Photos were taken of all documented erosion sites and are available upon request.

Landform and Erosion Severity

A total of 61 waterbodies with signs of erosion due to recreation were documented, 11 of which were located outside the WSA. The majority were located on streams (80%), followed by wetlands (13%), springs (5%), and one pond. Most documented sites had slight or moderate erosion (46% and 48%, respectively). All 4 severe erosion sites were along streams (Figures 17 and 18). Additional measurements, including width (streams) and size in acres (ponds and wetlands), are available for each erosion point in the associated database.

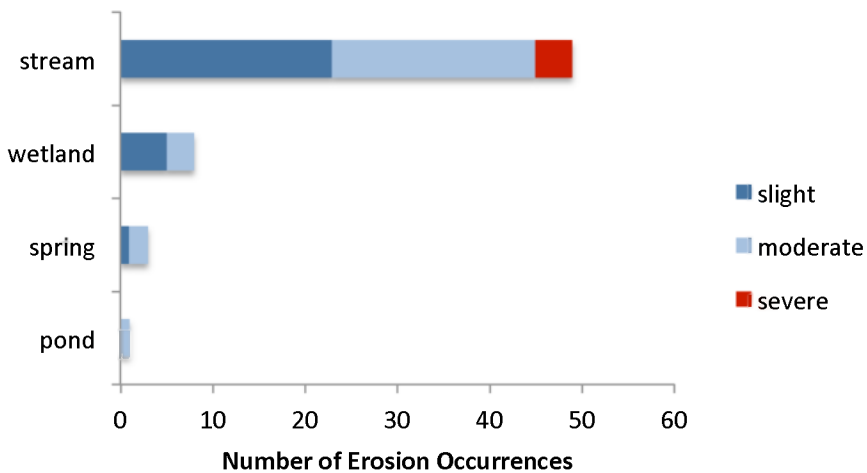


Figure 17. Waterbody type and severity of erosion due to recreation.

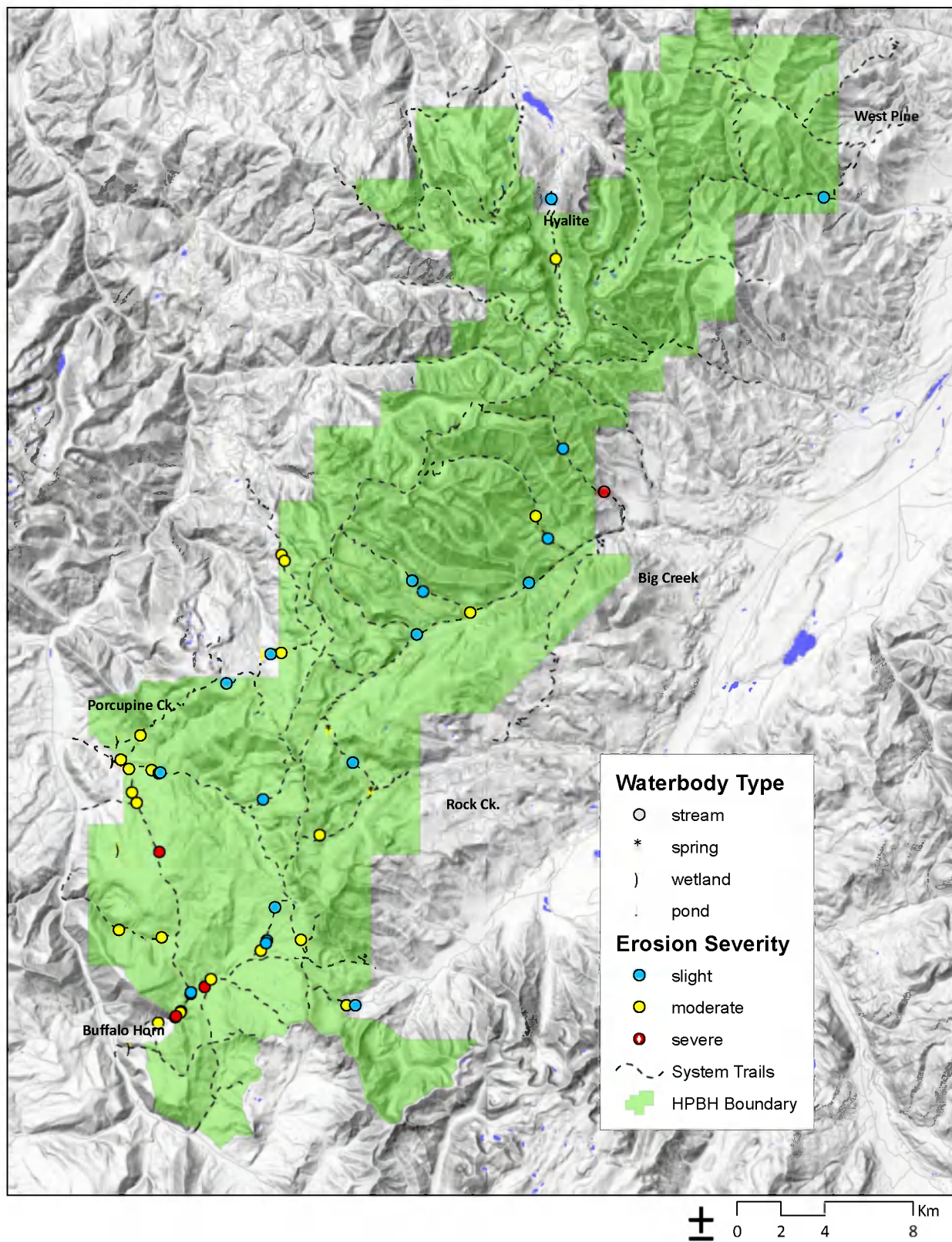


Figure 18. Location of water erosion sites by type and severity.

III. UNDEVELOPED QUALITY

Undeveloped quality is the third of four primary elements of wilderness character found within the language of the 1964 Wilderness Act. This quality refers to the extent in which “wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern occupation” (Landres et al., 2008). Non-recreational developments such as installations and signs are considered to affect the undeveloped quality of wilderness character. It is important to note that recreationally-focused developments, such as trails, campsites, shelters, etc. are considered in the next section, under the solitude or primitive and unconfined quality of wilderness character. This distinction is made so that developments are not double-counted under both qualities (Landres et al., 2008).

Installations and Developments

Types of human installations and developments were reported in the following categories: bridge, corral, dam, repeater, fence, old mine, old cabin, lookout, pole stash, cairn, or hitch rail. Photos were taken of all reported developments and are available upon request.

Development Type

A total of 319 installations and developments were reported, 242 of which were within the WSA boundary (Figures 19 and 20). Water diversions (e.g. erosion control, culverts, and water bars) were the most commonly observed (25%), followed by bridges (14%), cairns (12%), fences (8%), hitching posts (6%), latrines (3%), corrals (3%), pole stashes (2%), and old cabins (1%). An additional 81 developments were classified as “other”, including steps, barbed wire, chainsaw marks, barrels, and old posts.

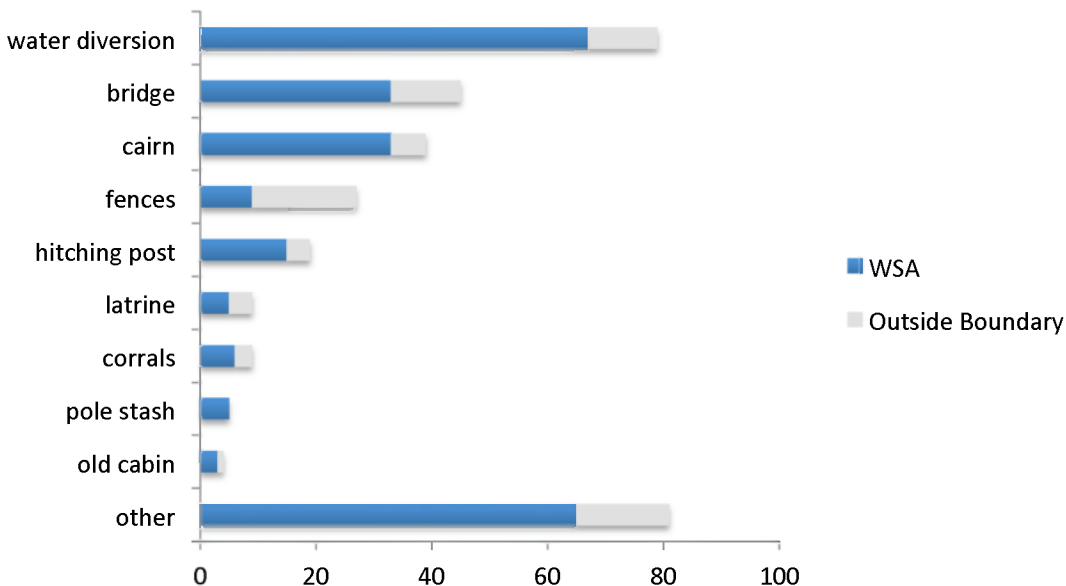


Figure 19. Number of installations and developments by type.

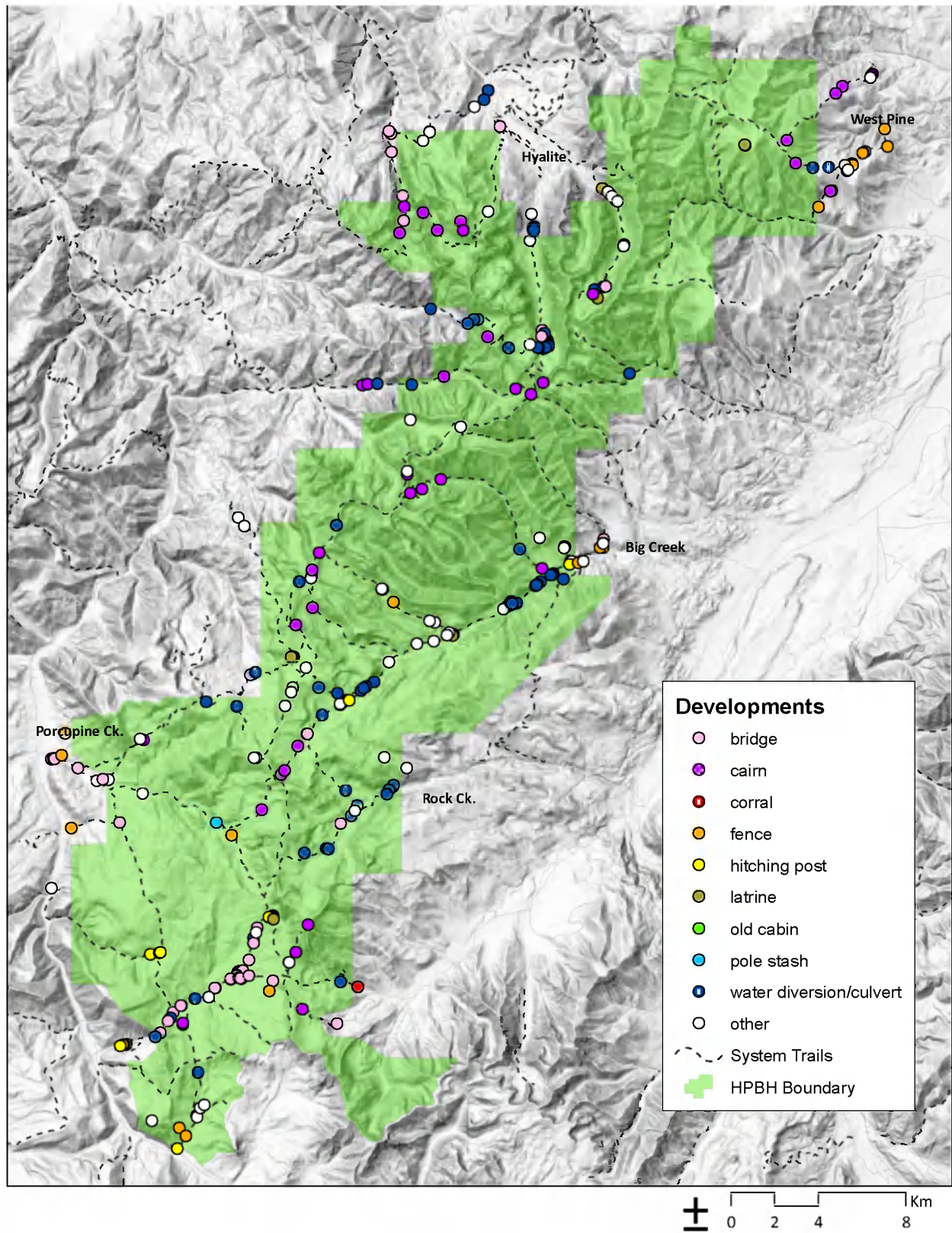


Figure 20. Locations and types of installations and developments.

Mine Prospects

Locations of old mining activity along trails were recorded by prospect type (adit, pit, or trench) and photographed (photographs available on request). Any safety issues or cave-ins were noted.

Mine Type

A single mine adit was encountered outside the WSA boundary near the Buffalo Horn Trailhead (# 1), (Figure 21). The entrance to the adit was noted as fenced.

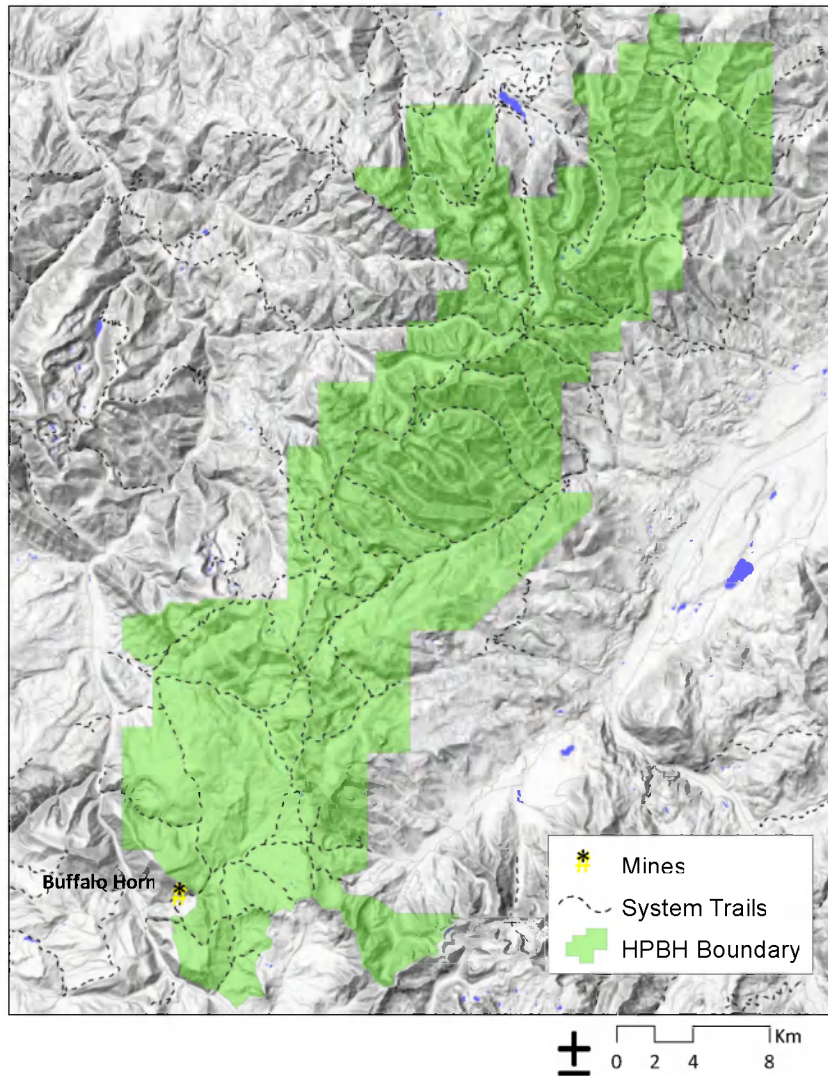


Figure 21. Location and type of mine prospects.

Signs

Signs were recorded throughout the field season and noted by type and condition. Sign types included: trail junction, interpretive, snowmobile marker, and recreational use sign (i.e. allowable uses/closures). Sign condition was categorized as: vandalized-legible, vandalized-illegible, missing (post with no sign), faded-illegible, faded-legible, or good condition. Signs with words were photographed for reference (digital files of sign photographs are available upon request).

Sign Type and Condition

A total of 267 signs were encountered along trails, 165 (62%) of which were within the WSA boundary. Most signs encountered were trail junction (45%), followed by interpretive (18%), recreational use (17%), and snowmobile markers (3%). The remaining 15% of signs classified as “other” included boundary and no trespassing signs. Most signs (69%) were in good condition, while 16% were faded-legible, 5% faded-illegible, 2% vandalized-legible, 2% vandalized illegible, and 5% missing. Four were missing condition information. Figures 22 and 23 numerically and spatially depict these attributes.

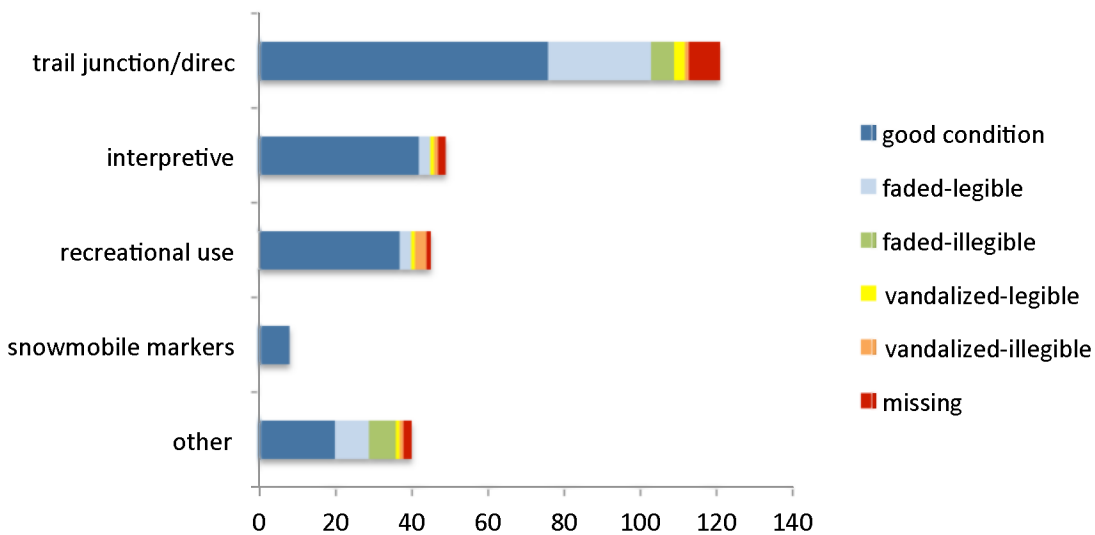


Figure 22. Number of signs by type and condition.

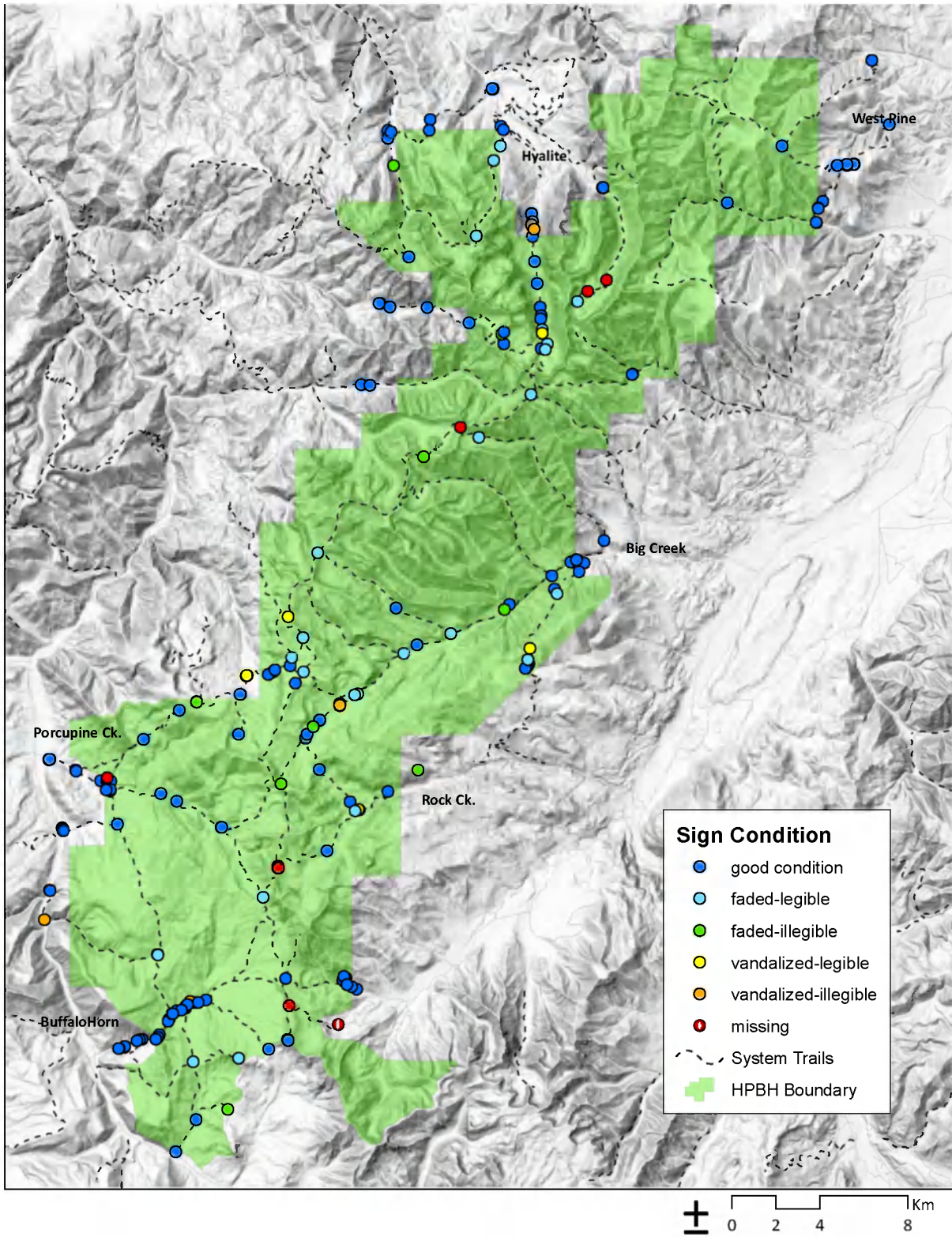


Figure 23. Locations of signs by condition.

Trail Closure Devices

Devices used to implement trail closures were reported according to the following categories: locked gates, unlocked gates, berms, boulders, or fences.

Trail Closure Type and Evidence of Violations

No trail closures were recorded in the study area.

IV. SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION QUALITY

Solitude or primitive and unconfined recreation quality is the last of four primary elements of wilderness character found within the language of the 1964 Wilderness Act. This quality refers to the extent to which “wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation” (Landres et al., 2008), and assesses recreationally-focused developments, such as trails, restrooms, shelters and campsites. Attributes included in the protocols that reflect this quality are: trail width, non-system trails, evidence of motorized or mechanized vehicle use, encounters with other users on trails, trailhead use, motorized noise, visual intrusions from developments outside of the Wilderness Study Area, and campsite characteristics and impacts.

Trail Width

Trail conditions were recorded for all trails leading into and within the WSA. When trail conditions varied from a single track, the trail width was categorized as double-track, braided/multiple trails, or old road bed. The length of impacted trail was measured from start and finish points and line data recorded in the field.

Trail Width

A total of 22.3 miles of impacted trails were recorded, representing 10% of all system trails monitored. Most impacted trails (15.5 miles) were within the WSA boundary. Double tracks accounted for 69% of impacted trails, and braiding occurred along 31%. No old road beds were recorded. Figure 24 shows the location of impacted trails.

Trail lengths represent minimum distances, since four sections of impacted trail were incomplete due to missing finish point data, and several records noted that trail conditions extended far beyond recorded trail section (see bullets, below; also see additional trail condition details provided in qualitative trail data summarized in Appendix 2).

- Persistent braiding was noted for trail #39, 57, 100, and 199.
- Variable trail width on History Rock Trail (#424). Extensive braiding and non-system trails network created by people and livestock near Big Creek trailhead.
- Additional double track and braiding was noted near Emerald Lake, and from Portal Creek Trailhead to Golden Trout Lakes.
- Double tracks and braiding all along Hidden Lake Divide Trail (#66) between junctions with #34 and #466, covering approximately 1.5 miles.

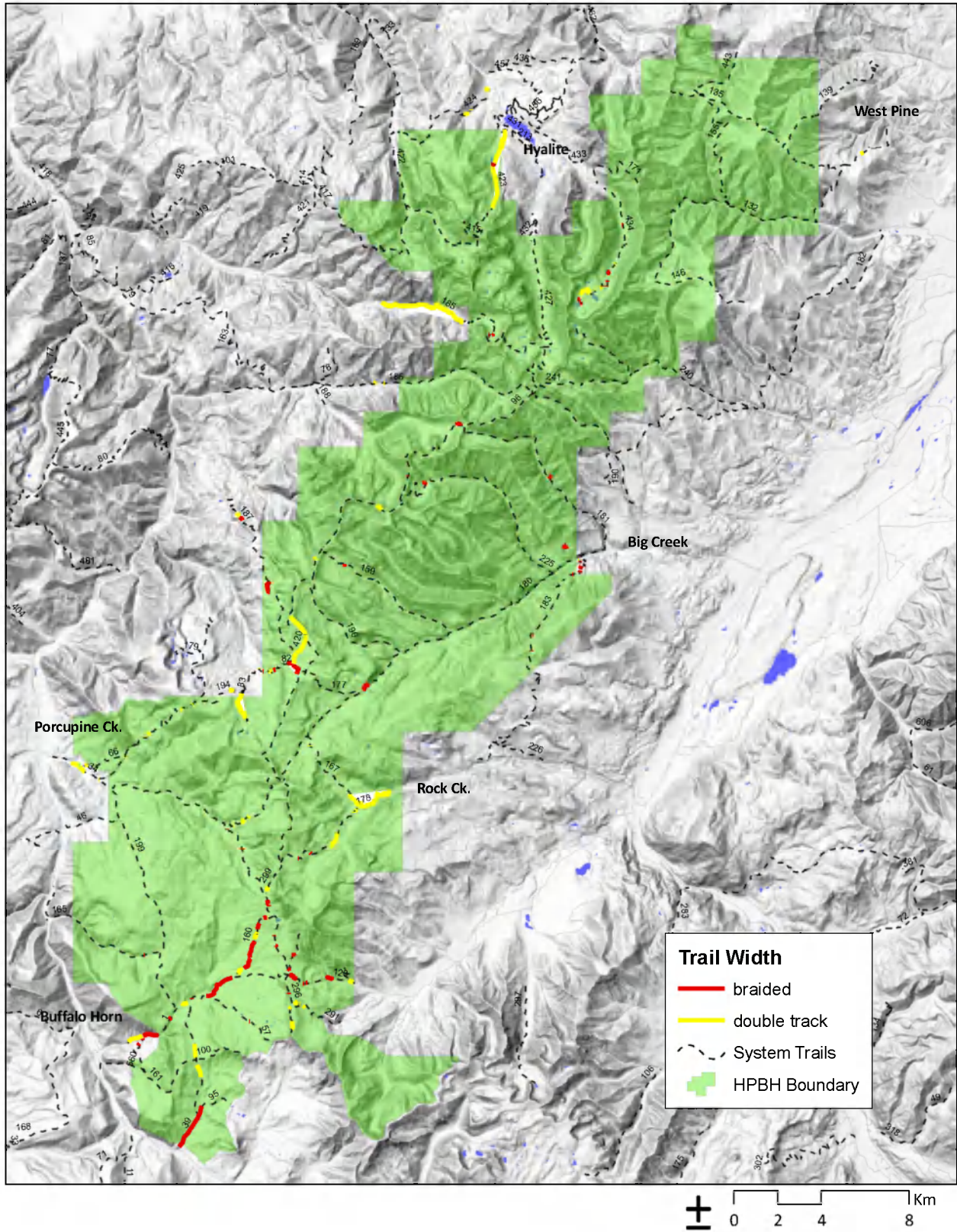


Figure 24. Impacted trail width by category. All other trails were single track.

Evidence of Mechanized and Motorized Use on Trails

Wilderness character monitoring protocols (Landres et al., 2008) were designed for use in Wilderness Areas, where recreational motorized or mechanized vehicle use is prohibited. The Wilderness Institute added this attribute to record motorized or mechanized use in Wilderness Study Areas in Montana (where motorized and mechanized use may be permitted on designated trails). Evidence of mechanized or motorized use was monitored on all trails. Each event was recorded as a point or line, and the type of track (motorcycle, bike, ATV, or vehicle) was recorded. This report only includes non-compliant use where physical evidence of mechanized vehicles (tire tracks) on trails was recorded in violation of current travel restrictions. See Appendix 5 for the 2011 interim summer travel restrictions (Special Order Number 10-11-00-01). This measure is not designed to capture volume of use, but indicates presence of evidence (e.g. tracks) from a single survey of system and non-system trails in the HPBH. This measure cannot account for the timing of use, and therefore does not include violations of daily restrictions or use after seasonal closure dates.

Type of Mechanized or Motorized Tracks

Evidence of mechanized use on closed trails was observed by mountain bikes on 13 trail sections and motorcycles on 11 trail sections within the WSA. Additionally, motorcycle tracks were observed on two trail sections (Porcupine Trail #199 and Buffalo Horn #1) prior to authorized open dates (e.g. July 16-Sept 4th). Mechanized and motorized use along non-system trails was noted, including evidence of bicycle use off Buffalo Horn Trail (#1) near the junction with Tom Miner Divide (#296) and both bicycle and motorbike use on non-system trails near Porcupine Creek trailhead. Outside the WSA, at the Tamprey Creek trailhead (#187), there was evidence that vehicles (e.g. cars or trucks) were driving a short distance up the trail. No ATV use was observed. Findings are summarized in Table 2, and Figure 25 shows trail sections with unauthorized use.

Amount of evidence was subject to trail conditions, and only trail sections with evidence were counted. Locating the start and/or finish of tracks was not always possible, therefore this measure represents a minimum measure of violation, since in many cases access via adjacent trails occurred but was not documented.

Table 2. Summary of evidence of unauthorized mechanized and motorized use within the HPBH by trail section.

Type	No. Trail sections	Length of Evidence (mi)
single- bicycle	13	28.3
single- motorbike	11 ^a	36.5

^aincludes 2 trail sections with tracks observed on July 3rd, prior to open season (July 16-Sep4th)

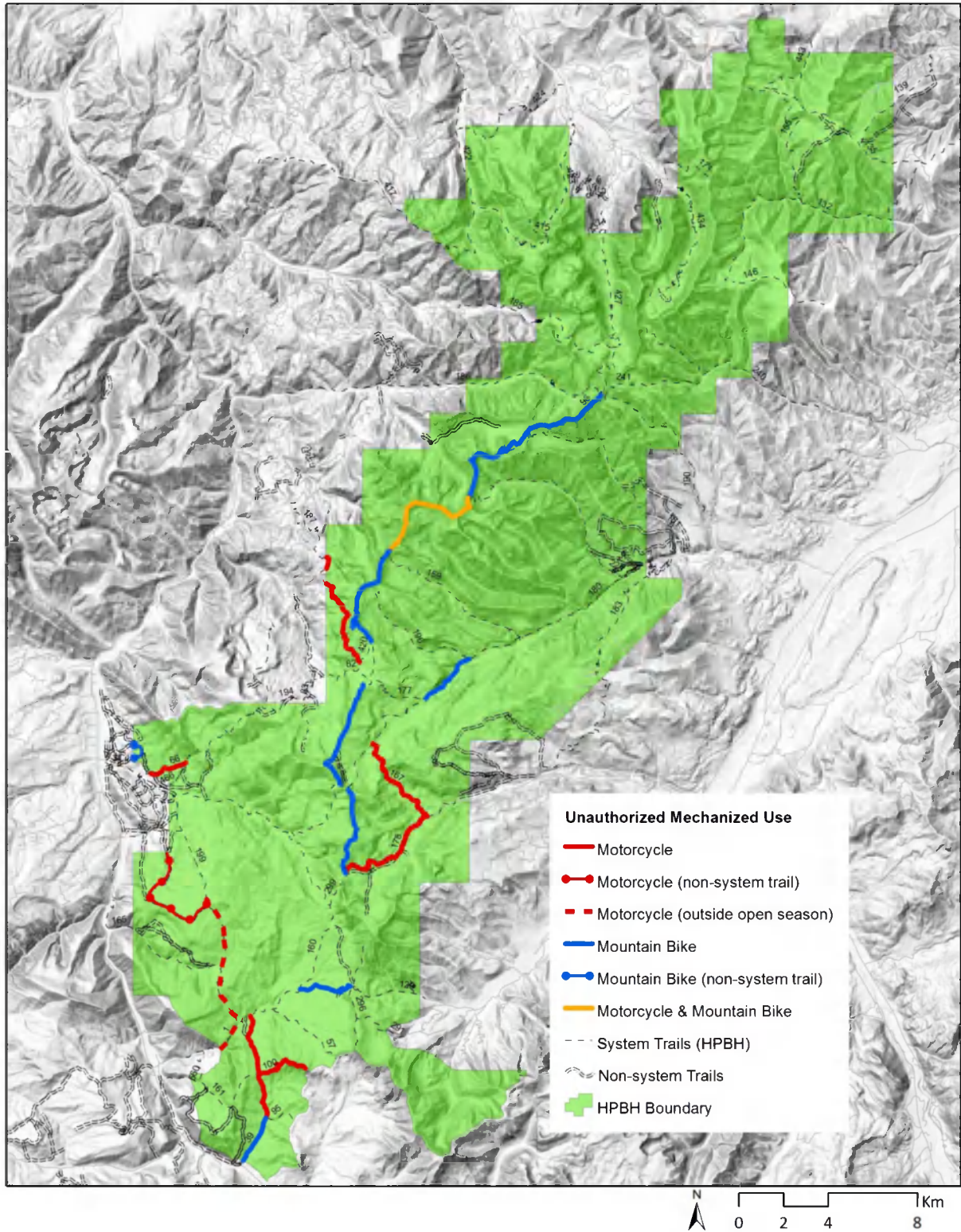


Figure 25. Location of trail sections with evidence of unauthorized mechanized and motorized use within the HPBH.

Non-system Trails

Non-system trails are trails that are not part of the official Forest Service trail system. When non-system trails were encountered, the trail type was categorized as: motorbike, ATV/UTV, horse travel, foot travel, or unclear. The origin of each trail was classified as either a new route created by recreational use, or an old road from historic mining, fire access, or logging activities. The length of non-system trails was mapped to the trail end, or as far as time constraints allowed.

Non-system Trail Type, Origin, and Monitoring Status

Forty-four miles of non-system trails were monitored, including 21 trails already in the USFS database. A total of 109 trails or trail fragments covering 5.8 miles were newly mapped in the field. The majority (63%) of these newly mapped trails were within the WSA boundary. Most were created by foot travel (58%) representing 3.9 miles, with 0.9 miles (16%) associated with horse travel, and 1.0 miles (15%) with unclear origin (Figure 26). Seven (6%) of the non-system trails surveyed originated from old routes; the remaining 94% were the result of new routes created by recreational use. Time constraints in the field limited complete surveying of the longest non-system trails. Of the 109 new trails located, 60 (55%) did not have their entire lengths measured (Figure 27). Completed trails ranged in length from 4 meters to 561 meters, and typically were short-cuts or short social trails. Unfinished trails tended to be longer, and included access to private properties and points of interest, old roads, and cattle trails. The longest section of non-system trail mapped was 1.3 miles and occurred outside the WSA boundary near the South Rock Creek trailhead following an old road grade.

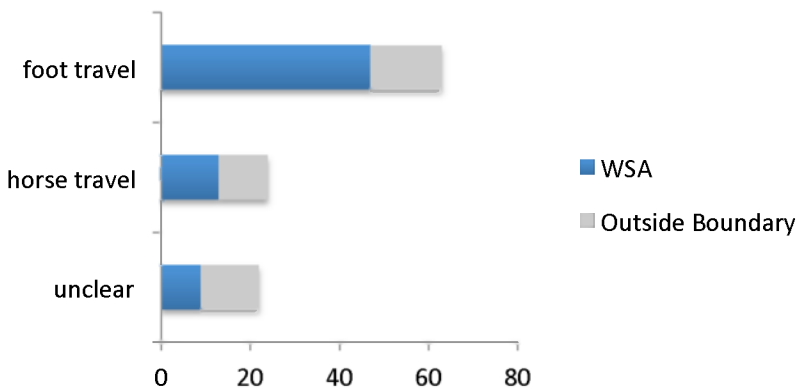


Figure 26. Number of non-system trails by trail type and location.

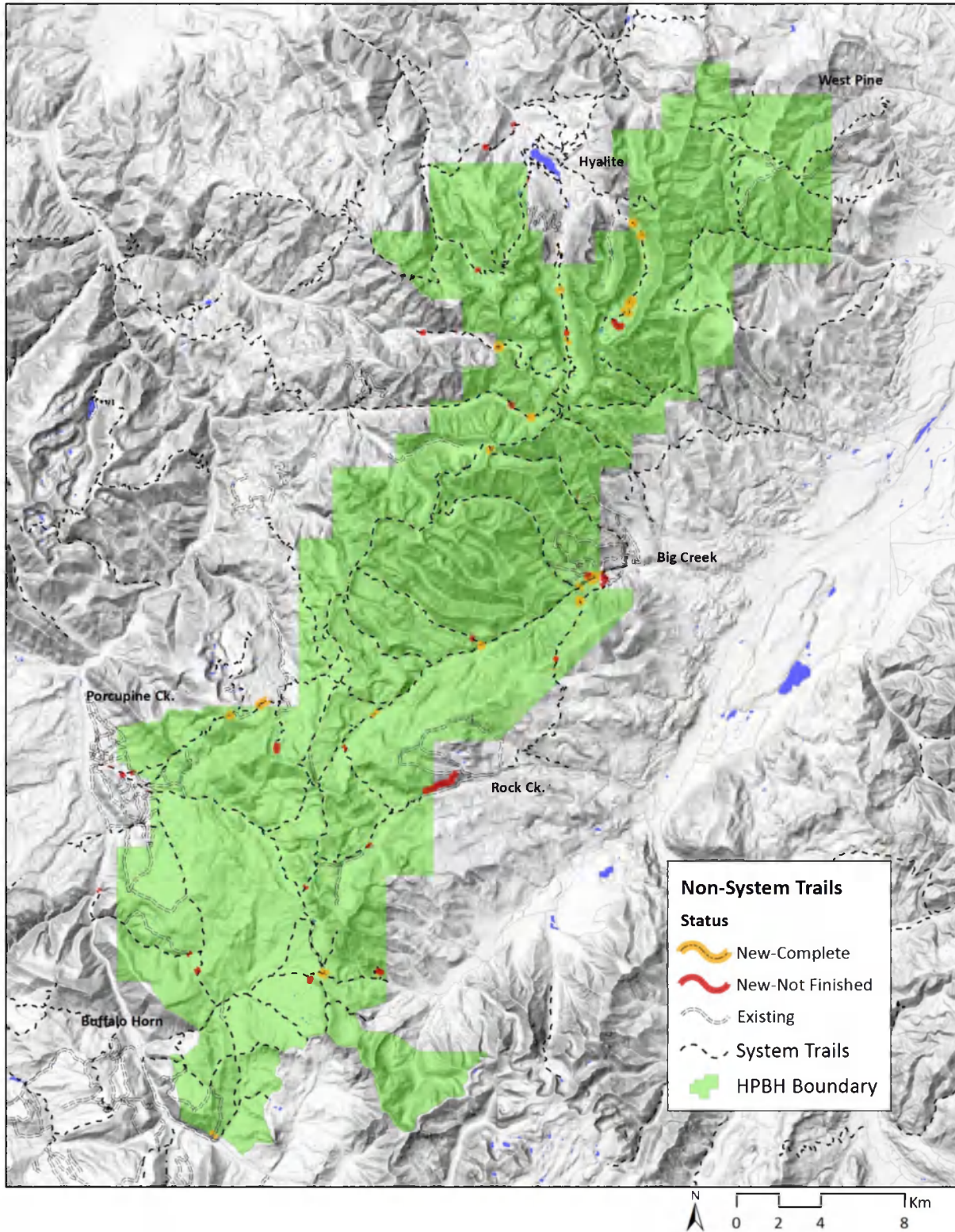


Figure 27. Locations of non-system trails and monitoring status (e.g. complete, not finished, or existing Gallatin National Forest layer).

Trailheads

Recreational use at trailheads was documented by recording the number of vehicles, horse trailers, and ORV trailers parked at the trailhead.

Vehicles and Trailers at Trailhead

Information on recreation use was recorded for 19 trailheads. Vehicles occurred at 13 (68%) of these trailheads, excluding the van used by the field team. The highest vehicle numbers were documented at Blackmore, Upper Portal, and Palace Butte trailheads (30, 19, and 13 vehicles, respectively). The Devil's Backbone Race was based out of the Upper Portal trailhead at the time of the count. Horse trailers were observed at 3 trailheads (Twin Cabin, Porcupine Creek, and West Pine). No ORV trailers were observed at any trailheads during the monitoring period.

Trailhead use is variable and influenced by time of day and week. These numbers are based on a single count (except for trail #434; see Table 3), and therefore do not necessarily reflect use across the season.

Table 3. Summary of vehicles at trailheads. Note: vehicle counts included the van used by the field team.

Trail #	Trailhead Name	Date Visited	Vehicles	Horse Trailers	ORV Trailers
180	Big Creek	8-Jul	2	-	-
423	Blackmore	14-Aug	30	-	-
1	Buffalo Horn	26-Jul	3	-	-
183	Donahue	1-Aug	0	-	-
434	East Fork Hyalite	22-Jul	6	-	-
434	East Fork Hyalite	24-Jul	23	-	-
165	Elkhorn Creek	22-Jun	0	-	-
424	History Rock	12-Aug	2	-	-
132	North Dry (Eightmile)	2-Sep	0	-	-
427	Palace Butte (Hyalite Creek)	22-Jul	13	-	-
34	Porcupine Creek	1-Jul	5	1	-
178	South Rock Creek	12-Aug	0	-	-
185	Squaw Creek	8-Aug	0	-	-
291	Sunlight	12-Jul	0	-	-
187	Tamphray Creek (Moose Ck.)	9-Sep	1	-	-
39	Tepee Creek	1-Jul	2	-	-
120	Tom Miner (Buffalo Horn Pass)	8-Jul	5	-	-
46	Twin Cabin	1-Oct	4	2	-
82	Upper Portal (Windy Pass)	16-Jul	19	-	-
139	West Pine	14-Sep	5	4	-

Encounters with People

Any encounters with people on trails were recorded during a single-pass survey of all monitored trails. Both the number of persons and the type of activity (hiker/backpacker, mountain bike, horse, ATV, motorbike, UTVs, or Forest Service staff) were documented.

Activity Type and Number

A total of 115 separate encounters (e.g. groups) were recorded across 66 days of monitoring, totaling 363 people. Most groups consisted of 2 or fewer people (63%), with the largest group sizes at Hyalite Lake, Grotto Falls, and Golden Trout Lake (20, 19, and 16, respectively). The majority (79%) of people encountered were hiker/backpackers, 12% were with horses or other pack stock, 6% were mountain bikers, <1% were USFS staff, and the remaining 2% were hunters or runners (Table 4). A total of 39 riding stock and 11 pack stock were counted, with the largest group size of 9 animals on Lewis Creek trail (# 181). Within the WSA, the majority of encounters (78%) were clustered in high-use corridors, defined as highly and fully developed trails (USFS trail development class 4 and 5) and trails to popular destinations (e.g. Heather and Golden Trout Lakes) including Porcupine Creek trailhead and Hyalite area trails (Figure 28).

Table 4. Number of people encountered on trails by recreational activity.

Activity	Number of Groups	Total People	Total Horse/Pack Stock
forest service staff	1	2	2
hiker/backpacker	82	287	0
horse packers	13	44	48
mountain bike	15	22	0
other	4	8	0
Total	115	363	50

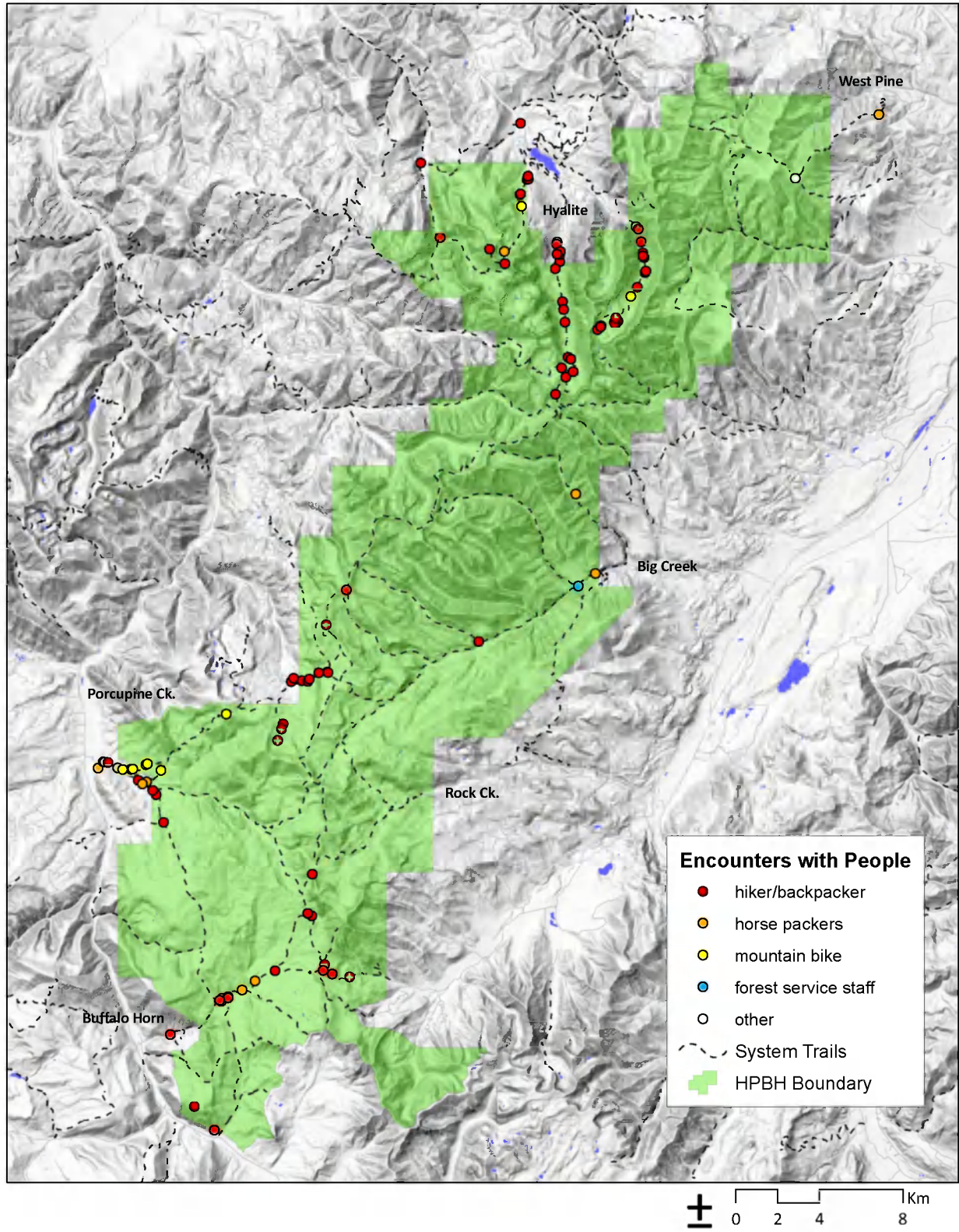


Figure 28. Location of encounters with people along trails.

Noise

Motorized noise was monitored throughout the field season. Duration of the noise was classified as under 1 minute, 1-5 minutes, 5-10 minutes or > 10 minutes. Noise intensity was categorized as barely audible (far in the distance), clearly heard (moderately near), loud (<1 mile), or variable. When possible, a visual confirmation of the noise source was recorded.

Duration, Intensity and Visual Confirmation of Noise Intrusions

A total of 182 motorized noise intrusions were recorded within the WSA boundary. The majority of noises recorded were from airplanes (89%), with the remaining attributed primarily to vehicles (6%) and helicopters (2%; Figure 29). Other noise heard was gunshots. Visual confirmation was not possible for 125 detections, so the source of these noises was based on auditory identification only. Gunshots and vehicles were the only types of noise that lasted more than 10 minutes, with the majority (95%) of intrusions lasting for 5 minutes or less. Most noises were heard clearly or were loud and close (84%), while the remaining 16% were barely audible or variable. The highest intensity noises occurred in the southern portion of the WSA. Noise intrusions due to airplanes were distributed throughout the WSA, while vehicles were only heard from the southeastern trails (e.g. Porcupine Creek, Elk Horn, and Tepee Creek), and helicopters were observed on Swan Creek and Gallatin Crest. Figure 30 shows the location of all noise intrusions by type and intensity.

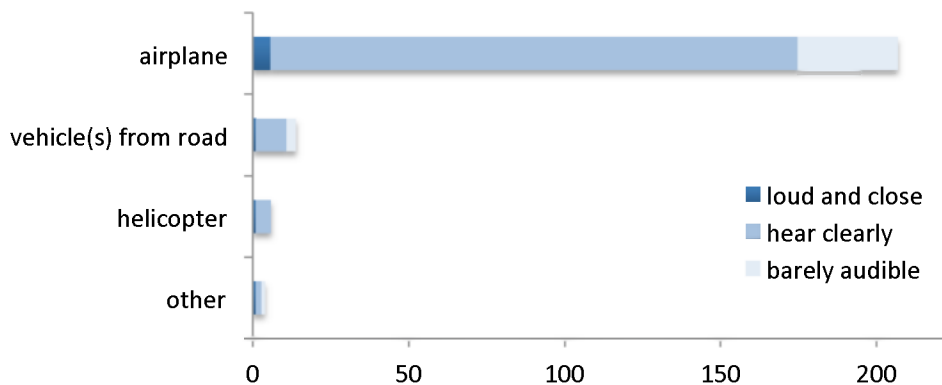


Figure 29. Noise intrusions by source and intensity

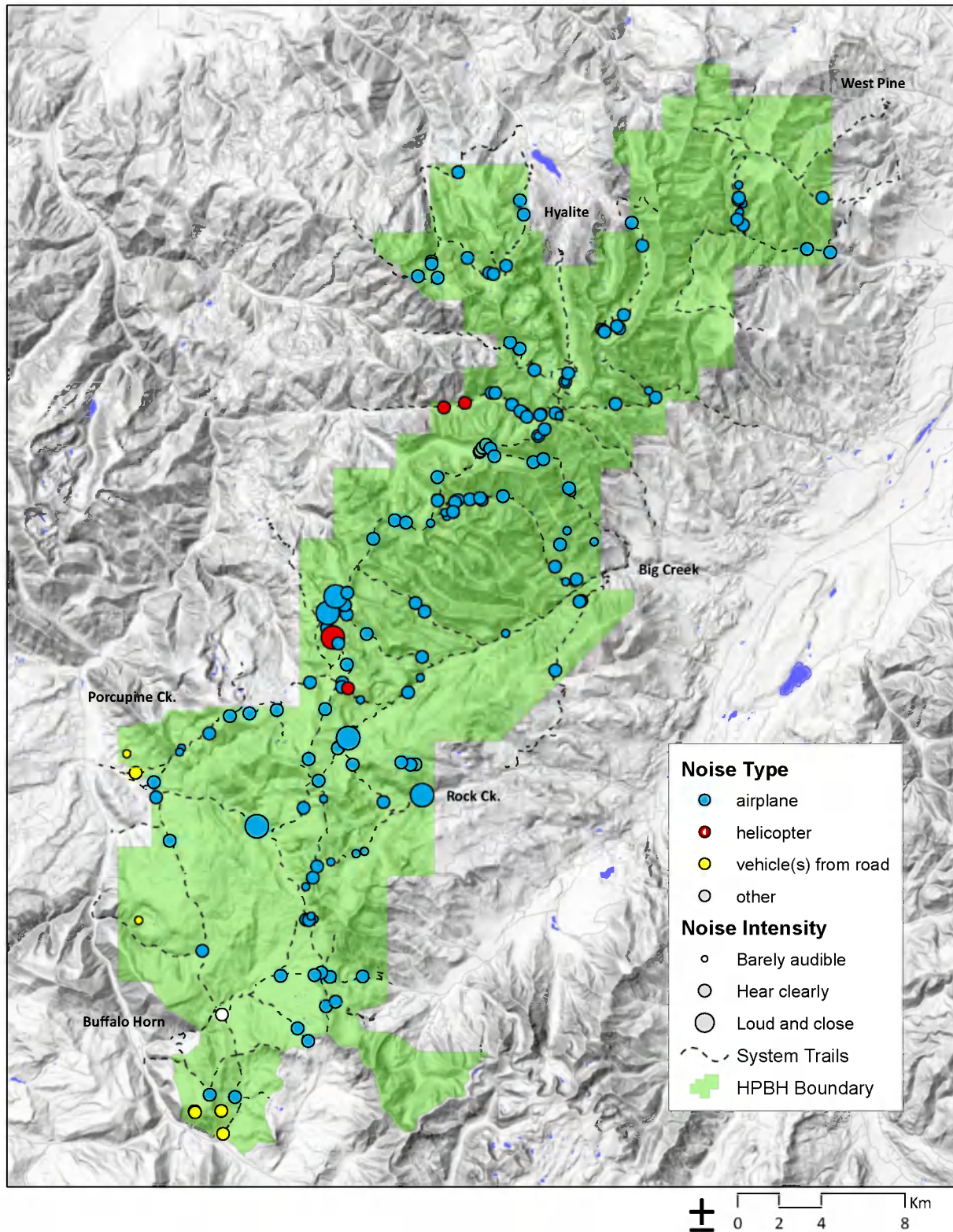


Figure 30. Locations, type, and intensity of motorized noise intrusions.

Visual Intrusions

Human development that was visible from within the Wilderness Study Area was documented as a visual intrusion. The location where intrusions were visible was recorded, and the type of intrusion was categorized as: buildings, highways, power lines, lights at night, cities/towns, dirt roads, clear cuts, repeaters/towers, or railways. Photos were taken of visual intrusions and are available upon request.

Type of Visual Intrusion

Thirty-nine visual intrusions were observed from within the WSA, including cities or towns (23%), buildings (23%), radio towers (23%), highways (10%), clearcuts (10%), and dirt roads (8%). The only “other” visible intrusion was Hyalite Reservoir. Cities and towns visible from within the WSA included Bozeman, Paradise Valley, and Big Sky Resort. This data is shown in Table 5 and Figure 31.

Table 5. Summary of Visual Intrusions by type.

Intrusion type	Total
cities/towns	9
buildings	9
highways	4
dirt roads	3
clear cuts	4
repeater/towers	9
other	1
Total	39

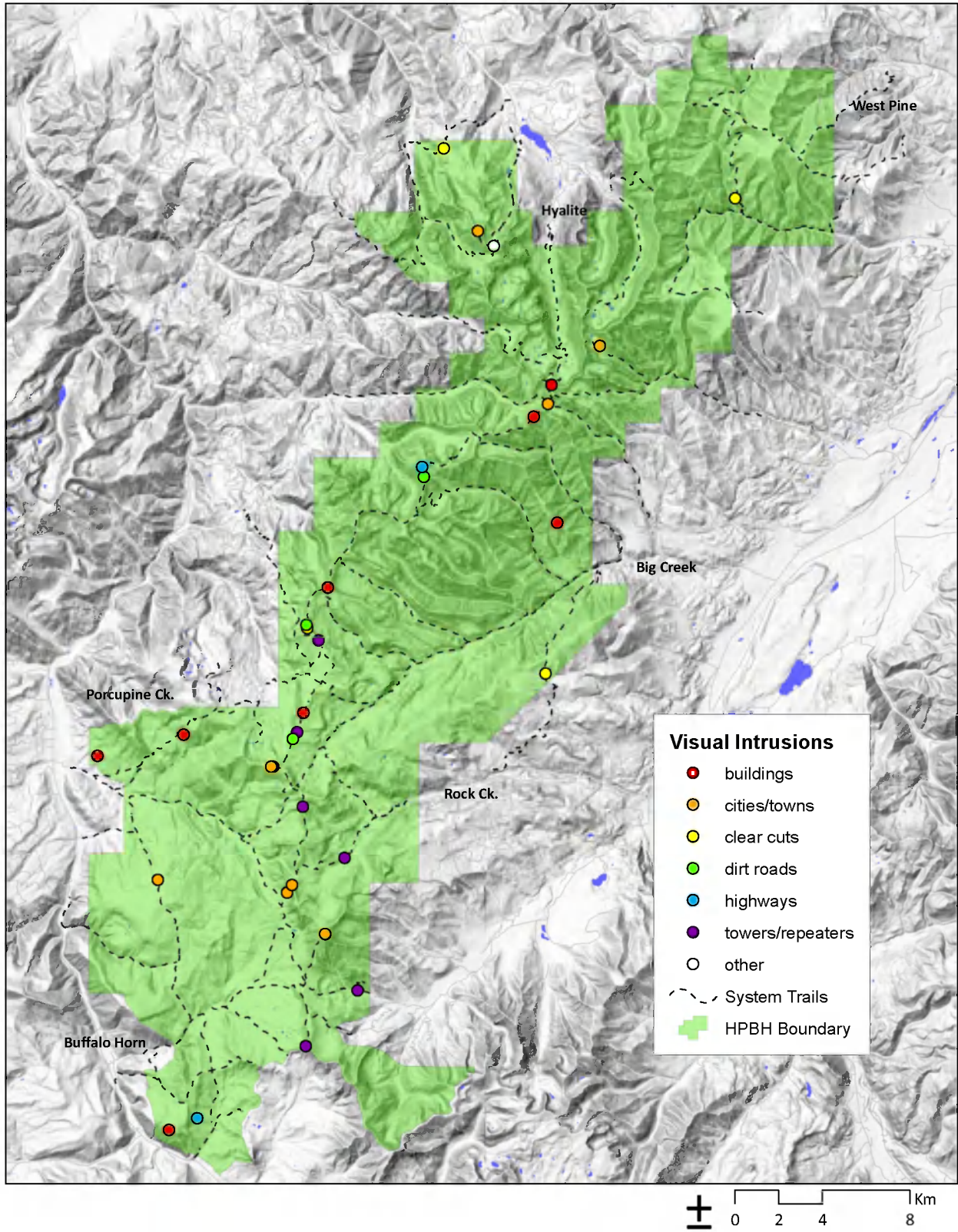


Figure 31. Visual intrusions by type seen from within the WSA.

Campsites

Attributes recorded at each campsite reflect campsite conditions and human impacts, and were based on standard Forest Service Campsite Inventory & Condition Evaluation protocols (see Appendix 4). Human impacts at each campsite were evaluated based on 1) vegetative loss, 2) mineral soil exposure 3) damage to trees, 4) number of trees with exposed roots, 5) the type and number of developments, 6) cleanliness, 7) the number of social trails, 8) camp area, and 9) barren core camp area. For each campsite, the ratings assigned to individual impact attributes were combined to generate a summary impact index score (see Appendix 4). To provide an ecological context for camp site conditions, information on campsite location and habitat associations was also collected. Here, we briefly summarize impact evaluation and ecological associations. For individual campsite attribute measures and photographs, see Appendix 3.

Impact Evaluation

A total of 111 campsites were recorded during the 2011 field season, 4 of which were outside the WSA (Figure 32). Most campsites were clustered around lakes, with 25% at Heather and Emerald Lakes, 11% near Hyalite Lake, 11% around Golden Trout Lakes, and 5% at Crater Lake (Figure 33).

Fifteen campsites were missing data for one or more impact attribute, and therefore an impact evaluation score was not calculated. Based on the summary impact evaluation scores of the 94 campsites with complete data, 21 (22%) of campsites were minimally impacted, nearly half (48%) were moderately impacted, and 28 (29%) were highly impacted (Table 6). One campsite, located on a non-system trail off North Dry Divide Trail (# 135), was considered extremely impacted (score ≥ 45). This camp appeared to be a well-used hunting camp with many developments and lots of litter and damage. The impact attributes that contributed most to overall impact scores were vegetation loss and cleanliness, which were ranked as “high” at 42% and 24% of campsites, respectively (Figure 34).

Note: Implemented protocols erroneously specified camp area categories as <50 , $50-500$, and >500 ft²; instead of <500 , $500-2,000$, or $>2,000$ ft² as is specified in the forest service protocol. Twenty-five campsites were classified as >500 ft². These were assigned to the camp area class of $500-2,000$ ft². Therefore, no campsites received the highest impact rating for camp areas (e.g. $>2,000$ ft²).

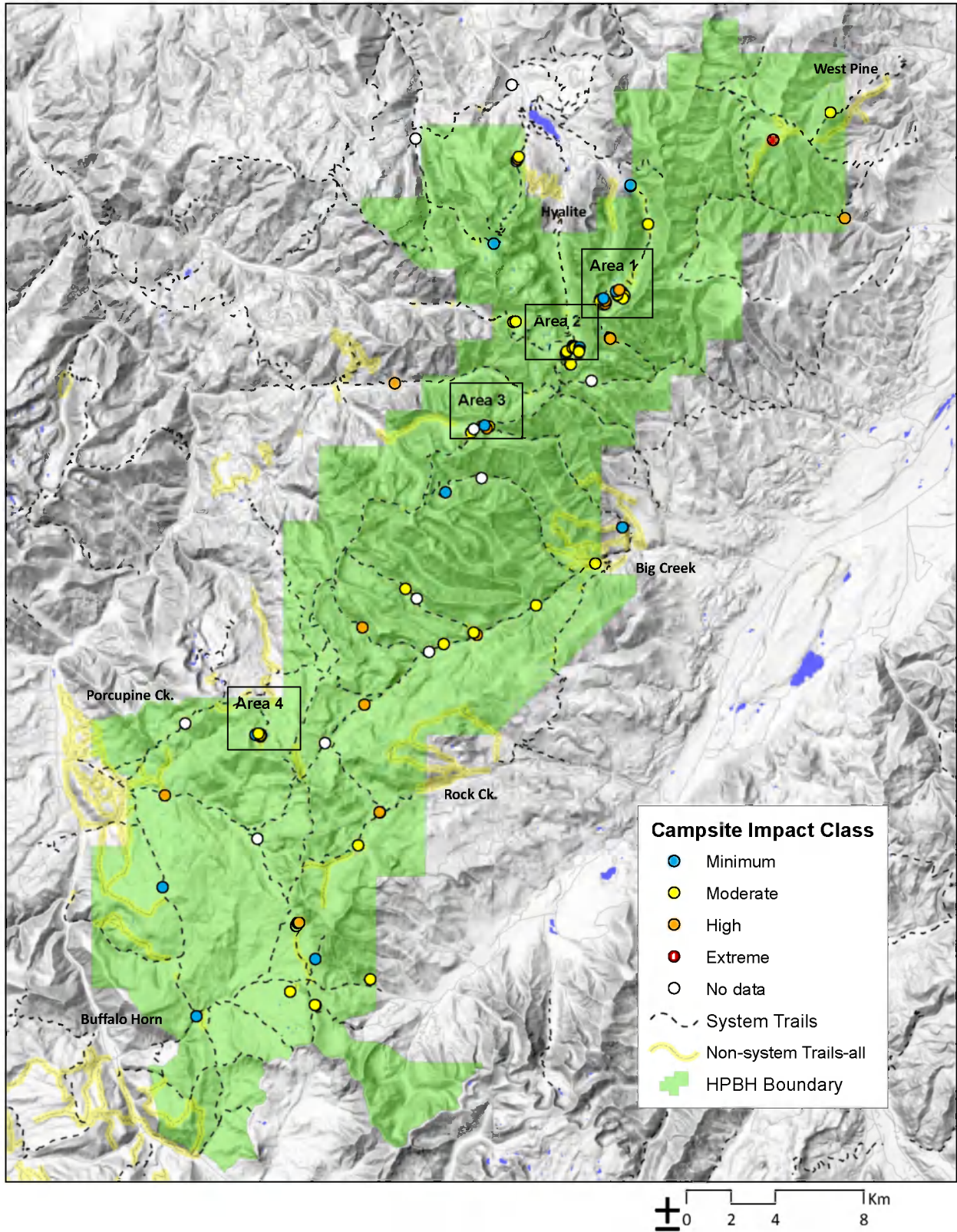


Figure 32. Location and impact class of campsites (Areas 1-4 are shown in detail in Figure 33).

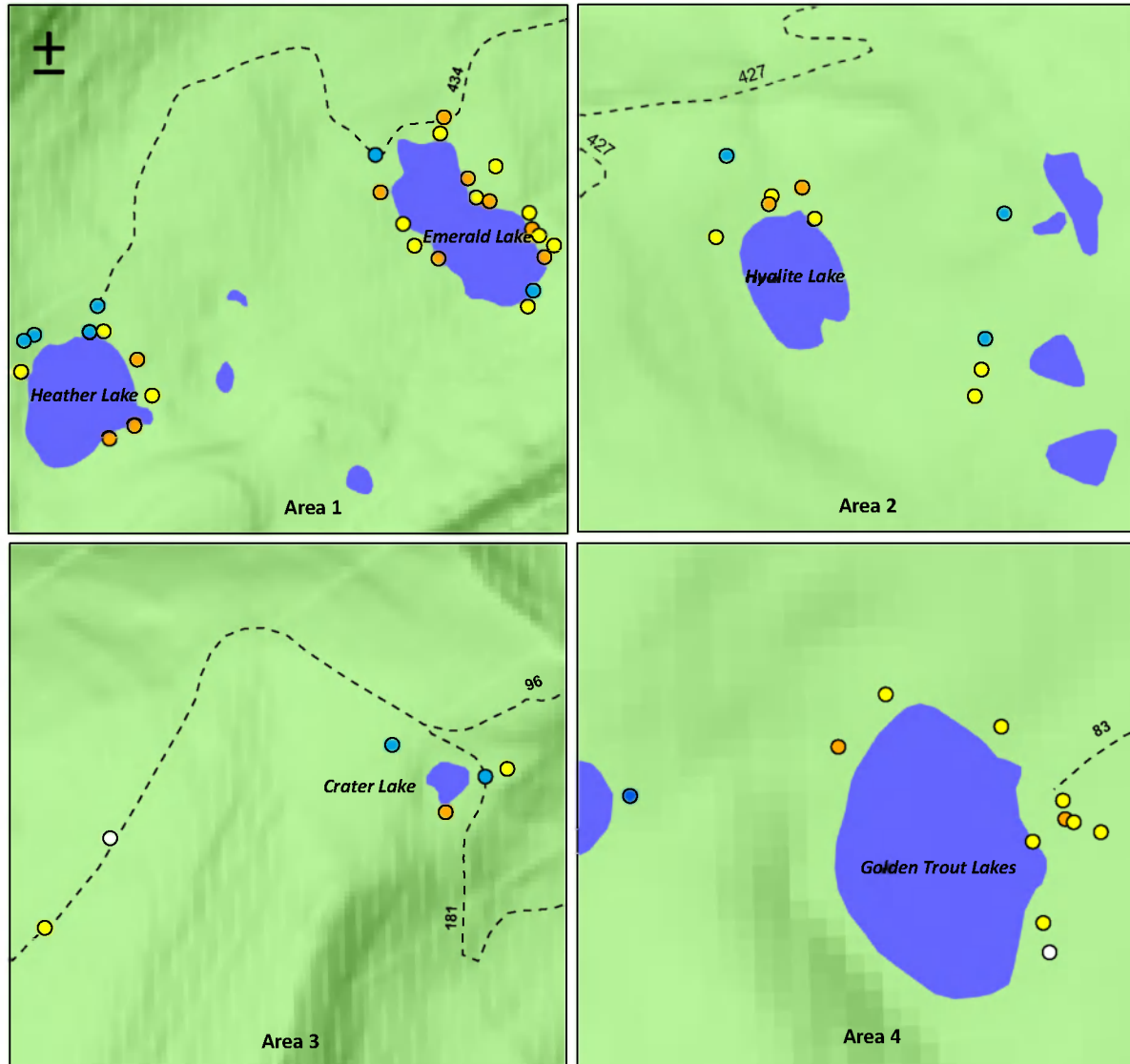


Figure 33. Location of campsites within areas of detail from Figure 32, including: 1) Heather and Emerald Lakes, 2) Hyalite Lake, 3) Crater Lake, and 4) Golden Trout Lakes).

Table 6. Number of campsites by impact evaluation score class.

Impact Index Score Class	Impact Index Score Range	Number of Campsites
Minimum	≤23	21
Moderate	24-34	46
High	35-44	28
Extreme	≥45	1
Missing Data	-	15
Total		111

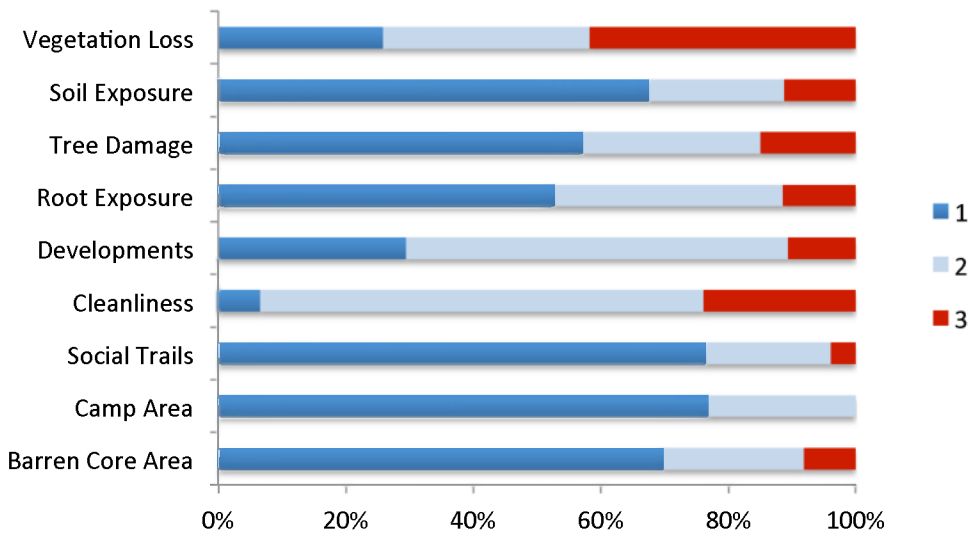


Figure 34. Proportion of campsites with impact ranking of 1=low, 2=moderate, or 3=high for each impact attribute (shows the relative contribution of each attribute)

Ecological Associations

The majority of campsites were associated with lakeshores (56%), followed by streamside (22%), meadows (8%), forests (7%), and saddles (3%). One campsite was located on a ridgeline, and 2 were missing landform data. Tree cover was <50% at the majority of campsites (65%). Subalpine fir and spruce were the most dominant tree species present at campsites (37% and 35% of campsites, respectively). Grouse whortleberry (*Vaccinium scoparium*), followed by yellow avalanche lily (*Erythronium grandiflorum*), were the most common dominant understory species (23% and 19% of campsites, respectively). However, dominant understory was represented by a diversity of plant species (e.g. 33 different species were most dominant within at least one campsite). Campsite-specific ecological attributes are detailed in Appendix 3.

Campsite location and landform was associated with the level of impact observed. Nearly all campsites with high impact scores (93%) were <200 feet from water and were located along lake shores or streams.

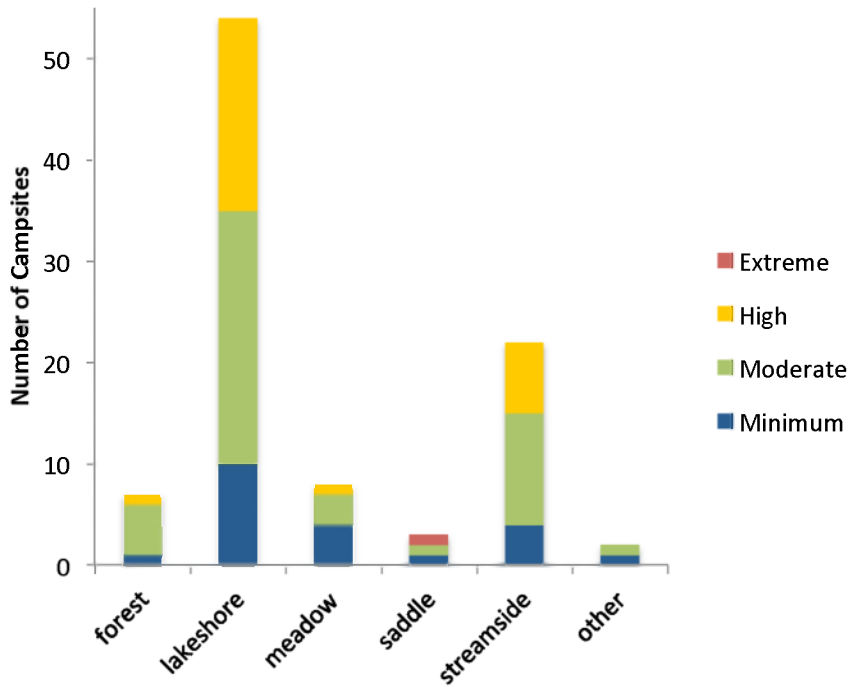


Figure 35. Number of campsites by landform category and impact class.

V. FOREST SPECIFIC ATTRIBUTES

No forest specific attributes, such as sensitive plant species, were recorded within the WSA.

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APPENDIX 1. MONITORING ATTRIBUTES

List of monitoring attributes recorded in the field in 2011. Detailed protocols are available upon request.

I. UNTRAMMELED QUALITY

Attribute group: Weed Point

Weed_Action

Action taken to manage infestation

II. NATURAL QUALITY

Attribute group: Weed Point

Weed_Collector

Wilderness Institute default

Weed_Landowner

USFS default

Weed_Unit

Gallatin National Forest (0258)

Weed_Species

Common name of weed species

Weed_Distribution

Distribution of weeds in patch (e.g. clumpy, scattered, linear)

Weed_Width

Width of linear patch or radius of non-linear patch (in feet)

Weed_Density

Percent coverage of weeds within area of infestation

Weed_Phenology

Life history phase of weeds in infestation

Weed_Disturb1/Disturb2

Primary and secondary disturbance/vector of infestation

Weed_DomLife

Dominant lifeform within area of infestation

Weed_Ecotype

Ecosystem type (e.g. wet meadow, grassland, forest, riparian)

Weed_Treecov

Estimate of % treecover over infestation

Weed_HabSeries/Type/Phase

Forest habitat series, type and phase (Pfister et. al 1977)

Weed_DomOver1/2/3

Up to three Understory species if >10% plot representation

Weed_DomUnder1/2/3

Up to three understory species if >10% plot representation

Weed_Struct1/Struct2

DBH class of largest tree <15 ft/ <50 ft from infestation

Weed_Water

Distance (ft) of infestation from nearest water

Weed_Actions

Action taken to manage infestation

Weed_Biocontrol

Presence or absence of biocontrol notes

Weed_Notes

Additional notes

Attribute group: Wildlife Point

Wild_Species

Species of wildlife encountered

Wild_ObsType

Type of wildlife sign encountered

Wild_Group

Individual, family, pair, etc.

Wild_Repro

Reproductive status, if evident

Observ_Qual

Degree of observer expertise

Wild_Total

Numeric total of individuals detected

Wild_Notes

Description or additional details of siting

Wild_Photo

Corresponding photo number from camera

Pika_Behavior

Select behavior category

Pika_Habitat

Select habitat category

Pika_Notes

Note presence and # of green haystacks

Attribute group: Water Erosion (human-caused)

Water_Landform	Landform (stream/lake) associated with erosion point
Water_Width	Width class at erosion point (streams only; high water mark)
Water_Acres	Acre estimate of all non-stream water features
Water_Severity	Severity rating of erosion (see protocols for details)
Water_Photo1/2	Corresponding photo1/2
Water_Notes	Describe site and any concerns identified

III. UNDEVELOPED QUALITY

Attribute group: Development Point

Dev_Type	Type of installation or development encountered
Dev_Photo	Corresponding photo number
Dev_Notes	Additional notes

Attribute group: Sign Point

Sign_Type	Sign type
Sign_Condition	Sign condition
Sign_Photo	Corresponding photo number
Sign_Notes	Additional notes

Attribute group: Trail Closure Point

Closure_Type	Type of trail closure device encountered
Closure_Violation	Description of evidence that closure is violated
Closure_Photo1/2	Corresponding photo 1/2
Closure_Notes	Additional notes

IV. SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION QUALITY

Attribute groups: Trail Width Point

TrailWidth_Name	Name of trail point
TrailWidth_Width	Width class of trail
TrailWidth_Start/Finish	Start/Finish of trail
TrailWidth_Notes	Additional notes

Attribute group: Motorized or Mechanized Use Point or Line

MotorMech_Name	Name of evidence for motorized use on trails
MotorMech_Start/Finish	Beginning or endpoint of evidence
MotorMech_Width	Track width of evidence
MotorMech_Photo	Corresponding photo number
MotorMech_Notes	Additional notes

Attribute group: Non-system Trails Line

Nst_Type	Type of non-system trail encountered
Nst_Vector	Age and source of non-system trail
Nst_Finish	Non system trail surveyed to its end or not
Nst_Notes	Additional notes

Attribute group: Campsite Point

Camp_Landform	Associated landform (e.g. lakeshore, streamside, meadow)
Camp_Area	Area class in square feet
Camp_Traildist	Distance from trail
Camp_Waterdist	Distance from nearest water
Camp_Campdist	Distance from adjacent campsites
Camp_Treecover	Percentage tree cover over campsite
Camp_DomTree1/2/3	Up to 3 dominant tree species (if >10% plot cover)
Camp_DomUnder1/2/3	Up to 3 dominant understory species (if >10% plot cover)
Camp_TreeDam	Rating of tree damage (see detailed protocols)
Camp_RootExp	Number of trees with exposed/damaged roots in campsite
Camp_Develop	Level of development observed within and around campsite
Camp_Clean	Level of cleanliness observed within and around campsite
Camp_Trails	Number of social trails observed within and around campsite
Camp_Barren	Barren area estimate within and around campsite
Camp_VegCover	Estimate of ground cover canopy coverage on core area
Camp_MinExp	Estimate of exposed mineral soil in core area
Camp_VegCoverOffsite	Offsite estimate of ground cover canopy coverage
Camp_MinExpOffsite	Offsite estimate of exposed mineral soil
Camp_Photo1/2	Photo number 1/2
Camp_Notes	Additional notes

Attribute group: People Point

People_Activity	Type of user encountered
People_Number	Number of people seen in encounter
Packstock_Number	Number of packstock in party
Ridingstock_Number	Number of riding stock in party
Trip_Length	Select overnight or day trip
People_Notes	Additional notes

Attribute group: Trailhead Point

TH_Name	Assigned name and/or number
TH_TotNumber	Total number of vehicles
TH_HorseNumber	Total number of horse trailers
TH_ORVNumber	Total number of ORV trailers
TH_Notes	Additional notes

Attribute group: Noise Point

Noise_Duration	Duration of noise (select from categories)
Noise_Intensity	Intensity rating of noise (select from categories)
Noise_VisConf	Indicate of source was seen
Noise_Notes	Additional notes

Attribute group: Visual Intrusion Point

VI_Type	Visible evidence of human impact outside WSA
VI_Photo	Photograph
VI_Notes	Additional notes

V. FOREST SPECIFIC ATTRIBUTES

Attribute group: Sensitive Plant Species

Sensitive_Name	Species name of plant identified
Sensitive_Pop	Population size class
Sensitive_Photo	Photograph
Sensitive_Notes	Additional notes

APPENDIX 2. SUMMARY OF FIELD NOTES

This appendix summarizes relevant field information from the “Trip Reports” written by field leaders for each monitoring trip. Information is organized by area and trail number, and includes information on trail conditions, weed distributions, and other trail notes.

Big Creek Area

- #190 (Hyalite Creek): Trail #190 down Hyalite Creek was not found, despite a targeted search. No trail was found descending from the Crest Trail and no cleared routes were visible leading down the valley. The assumption is this trail is no longer used or maintained.
- #181 (Lewis Creek): The trail was difficult to find leaving Crater Lake, but once found was fairly straightforward, but with some steep terrain, inconsistent tread and many downed trees. The lower 5 miles of trail are intertwined with the creek with numerous creek crossings and much brush. On this portion of the trail crews consistently encountered Houndstongue and Bull Thistle, with Canada thistle in wet, seepy areas. Due to time constraints, weed patches from the WSA boundary to the trailhead were incompletely mapped.
- #225 (Cliff Creek): Trail is in poor condition and overgrown; seemingly rarely travelled, with many downed trees. It was entirely washed away in one area with other portions being in danger of being washed away. Sporadic blazes were found, but the tread was lost in open grassy areas, and difficult to follow and commonly intertwined with game trails which were easily mistaken for the main trail. Trail was lost near the Crest (#96) and crews bushwhacked up a steep cliffy area to reach #96. This trail was relatively weed-free.
- #159 (Bark Cabin Creek): Trail was in reasonable condition, but somewhat overgrown. From the Crest trail (#96) it was a little hard to find. In places (especially lower down), non-system trails were more used than the system trails, with the main trail sometimes difficult to discern. Crews did not have time to completely monitor the extensive networks of non-system trails in the Bark Cabin Creek area. The portions that were surveyed had large numbers of weed patches associated with them. The meadows surrounding a large outfitter camp at the confluence of Bark Cabin (#159) and Big Creek (#180) had many weeds, and the camp itself had a dominant understory of dandelion and other “disturbance” species.
- #196 (Mist Creek): From #180, crews spent half an hour looking for the junction with the #196, but were unable to locate it. On a subsequent trip, crews found #196 descending from the Crest Trail (#96), but only with much difficulty. Crews laboriously followed old trail blazes, small rock cairns, and cut logs down in the drainage, but tread was hard to distinguish.
- #177: Trail was in fair condition and easy to find and follow, but had some erosion issues.
- #180 (Big Creek): The main Big Creek Trail was in good condition. The tread in some portions was beat up, but overall it was easy to find and follow. There were blazes to mark the sometimes difficult-to-follow upper portions of the trail (where it intersects with the #96). Some of the blazes need to be re-marked. There were many networks of non-system trails that crews did not have time to completely monitor. At some points it was difficult to distinguish the main trail from user-created trails. The first mile or so of trail was relatively weed-free, with the exception of the day use area near the trailhead. Subsequently, weeds were prevalent, in

particular Bull Thistle, Canada Thistle, Houndstongue, and an unknown but suspected weedy hawkweed species (it wasn't in bloom yet, so identification as Orange Hawkweed – as recorded in the dataset-- is uncertain). Houndstongue was common in both large and small patches throughout the drainage, favoring open grassy/shrub areas, but found also in forested areas. Bull Thistle was usually found in small patches in the drier and rockier parts of the trail. Crews noted many dead Bull Thistle rosettes as far as Bark Cabin Creek (#159) and some evidence of spraying on Houndstongue as well. Canada Thistle was less prevalent and mostly found in dense patches surrounding wet seep areas.

- #183 (Donahue Creek Trail): The trail was in good condition and only slightly overgrown in spots. The first two miles (largely outside the WSA) had the majority of weeds, herds of cattle, heavy grazing and stock use, and a lot of trail braiding. Much of the grass and vegetation was trampled and grazed. It was very difficult to decipher which of the trails was the system trail, and as a result non-system trails were incompletely mapped and monitored in this area. There was evidence of sporadic spraying all along the trail for the first mile. We Found Bull Thistle, Canada Thistle, Cheatgrass, Sulfur Cinquefoil and Houndstongue along trail outside the WSA, with fewer weed patches and less evidence of cattle and stock use within the WSA.
- Non-system trail starting at the Big Creek Trailhead and connecting with Cliff Creek (#225): Houndstongue and Musk, Canada and Bull Thistle were found consistently along the first 1/5 mile of this non-system trail. Some evidence of weed management via spraying.
- Non-system trail loop west of Mountain Sky Guest Ranch: The trail was easy to find from trail #181 along the 6500 ft contour. Trail was lost as crews climbed out of the western drainage to the ridge, but found again heading east on the ridge. Trail is very faint where the loop connects on the east side. Weeds included Bull Thistle, Canada Thistle, Houndstongue, and Common Mullein and were thick at lower elevations, in particular in areas of old burn and heavy stock use. All the weeds were seeding, so polygons were not collected (for fear of carrying and spreading the seeds), but instead, weed points and lines were taken.

Rock Creek Area

- #178 (Rock Creek Trail): Trail conditions were good. The trail was built on an old road bed, and much of it was two-track. Some braiding was present at the upper reaches and along very steep sections. Canada Thistle was found in wetter spots along the road bed, And Bull Thistle in drier spots; in some areas they grew together, and with Houndstongue.
- #167: Trail conditions were good. Canada Thistle was mapped in wet open sites below 9000 feet with some patches of meadow hawkweed on dry open slopes at lower elevations.
- Trail conditions on Rock Creek non-system trails varied, from an overgrown track on an old roadbed, to navigating a network of game trails, and traveling on an unmaintained, user blazed section on a ridge. One non-system trail leaves the road bed and continues up a ridge; it is initially easy to follow, but soon gives way to a confusing network of game trails indistinguishable from the main trail. Halfway up the ridge, an area with some blazing was noted but did not appear to have any recent use, or any recent trail clearing. We followed the trail up to the top of the ridge and then continued about another .5 miles along the ridge where the blazes stopped and the trail disappeared.

Porcupine /Buffalo Horn Area

- #39, #199: These trails had consistent braiding or double track, sometimes triple track, probably due to almost impassably muddy conditions (early summer), horse traffic and erosion. Trails had not been recently cleared. Most trails had no signage, and if they did, the sign was on the ground. After Buffalo Horn Station, #39 heading north was hard to follow: the was more defined and appeared to be the system trail.
- # 57 and #1 (near the ridge and pass) were difficult to find. Trails were difficult to follow in meadows. #1 from Buffalo Horn Pass down into Buffalo Horn Creek had huge trees down in the trail that made it difficult to pass, nearly impossible for horses. There was one non-system trail heading south from #1 towards Buffalo Horn Lakes. One plant of houndstongue was found on #1 along Buffalo Horn Creek, and along both trails several patches of Canada thistle were found in wet areas.
- #95 and #100: No specific comments.
- #165 (Elkhorn Creek) and non-system trail north of #165: Trail #165 was in good shape but some areas were flooded with runoff (early summer), and two track and braided sections were frequently found in wet areas. Approaching from the east (and junction with #199), the non-system trail north of #165 was found and taken for about 1 mile but then lost. One patch of yellow toadflax was found on #165.
- #161 (Wilson Draw): Much of trail had deepened tread with muddy eroded sections from heavy horse traffic, lots of pot holes and widened stretches. Deep ruts in mud created speed bump like mounds filled with muddy water in between.
- #46 (Twin Cabin Creek): No specific comments.
- #34: No specific comments.
- Non-system trails in the Porcupine drainage: There were many non system trails in this area that, due to time constraints, were incompletely mapped. The non-system trail south of Porcupine station was very muddy and had some difficult sections where horse traffic had created a very uneven trail surface. Braiding was common along the steep sections of this trail. The non-system trail north of the station was well established, with evidence of muddy conditions that had mostly dried out, and braiding for much of its length. Canada thistle, bull thistle, and houndstongue were found along non-system trails in the area, in particular in riparian or wet areas.

Hyalite/Blackmore Area

- #424/#422/#423: Trail conditions fairly good, but with frequent trail-width changes, particularly toward the northern end of #42 (where trail is widened). An avalanche appears to have wiped out a large section of #423 on the south side of the Mount Blackmore Saddle. Trail was lost for a quarter mile and trees were stacked up to ten feet tall in some places over existing trail.

- Canada thistle was recorded along these trails, primarily concentrated in wet open sites below 9,000 feet.
- #417: This trail was difficult to find at the junction with #422. There was no clear trail through the meadow to the forest where trail was found, but there were several horse trails and a user blaze placed incorrectly. Once found, it was well marked and easy to follow until the switchbacks that descend from the ridge near the WSA boundary. Here, the tread was hard to find, the terrain difficult and sloughed off. Most people presumably bushwhack and scramble to the top. Part of the old switchbacks were found upon descent, but the trail was patchy and consisted primarily of slippery, screed tread.
- #427: No signs for lookout points or waterfalls were found along the trail; as a result, many non-system trails branch off to the creek, presumably created by people searching for the falls. Non-system trails stemmed from both sides of trail 427 to get to waterfalls, vistas, and climbing spots. We made non-system trail lines for these trails and finished some of the shorter ones while marking the first hundred yards or so of the longer non-system trail's.
- #171: Appeared to be old road bed that got very little use (only start of the trail was surveyed)
- Non-system trail along Flanders Creek appears to be an old 4WD road that follows the creek.
- #434 (Emerald Lake Trail): The entire trail was widened from heavy use but as the trail approached lake it became narrower. Braiding was noted along the trail, especially along switchbacks where people cut across for a more direct route (every switchback was cut with braided non-system trails). There were no signs for lookout points or waterfalls along the trail, resulting in many non-system trails branching off to the creek.
- #185 (Squaw Creek): The first two miles of #185 was a wide double track. A well-established non-system trail cut through a series of switchbacks. A variety of weeds were found on #185, including Tansy, Canada Thistle, Oxeye Daisy, and Spotted Knapweed. Motorized tracks were recorded.
- #186 (Swan Creek): Canada thistle was prevalent on #186, and motorized tracks were recorded.
- Non-system trail off of south fork Swan Creek (#186): This trail was difficult to find, and the start of the trail was hard to follow and find, as there are multiple smaller, less used user trails that lead to the main non-system trail. Once found, the trail was very easy to follow, blazed, and recently cleared. We found one patch of Canada thistle in the meadow at the end of the non-system trail.
- #240/#241: No comments.

Tamphray Creek/ Portal Creek /Windy Pass/Eaglehead Mountain

- #66: There were a few downed trees or deepened tread in steep sections on this trail.
- #83: The trail was widened from the Portal Creek Trailhead to Golden Trout Lakes. #82: Trail #82 up to Windy Pass is a high traffic area and was wider than single track in many places with some braiding.

- Non-system trail to the east of Eaglehead Mountain: Easy to find and follow.
- #187 (Tamphray Creek): Trail was in good condition and recently cleared. Continuous and consistent motorbike tracks were found along trail #187.

Tom Miner

- #296: A few non-system trails were found off of #296 to the peak, generally to lookouts. Several non-system trails were noted near the rocky outcroppings and rock formations toward the end of the interpretive trail that explored the area.
- #120: No specific comments.
- #291: Some erosion and double-track/muddy conditions.

Eightmile (please refer to Figure 1 for trail coverage in this area)

Weed Summary:

The weed monitoring data for this area is not comprehensive. Time did not permit full monitoring of the extensive infestations in this area, and many trails were challenging to navigate, or difficult to find. All areas disturbed by cattle grazing and the lower elevations of the burn area were extensively infested with many weed species. The dominant weed species found were Musk Thistle, Bull Thistle, Canada Thistle, and Houndstongue. We also found a small patch of Meadow Hawkweed on the eastern-most mile of the Eightmile drainage and (potentially) a Tansy plant just north of the campsite along Eightmile Creek. We could not confirm the Tansy due to a lack of flowering stalks. We also found cheatgrass in disturbed areas, mostly underneath trees and where cattle had been grazing.

The dominant species (the Thistle complex and [to a lesser extent] Houndstongue) were pretty much continuously present with clumpy distribution constituting 20-80% of the total vegetation coverage. This distribution continued as far as could be seen into the burned areas and throughout all areas where there were clear signs of cattle grazing. Weed density diminished with elevation. By 8000' the weeds were in concentrated and less frequent patches. By 8600' the larger patches became rare, and by 8800' only occasional small patches were found. The unburned, ungrazed forested areas above 8000' had only occasional weeds.

Dense weed populations were found all the way down trail #132 to the North Dry Creek Road even without obvious signs of grazing or fire disturbance. Also, the meadows bordering private land where cattle are kept were vast fields of Musk Thistle. The grazing and trampling disturbance was really evident with several cattle-specific developments and many cattle trails throughout the area.

Trail Summary:

The trail conditions outside of the burned areas were generally good. In the areas where cattle grazing was present, there were often confusing side trails weaving through the meadow or forest.

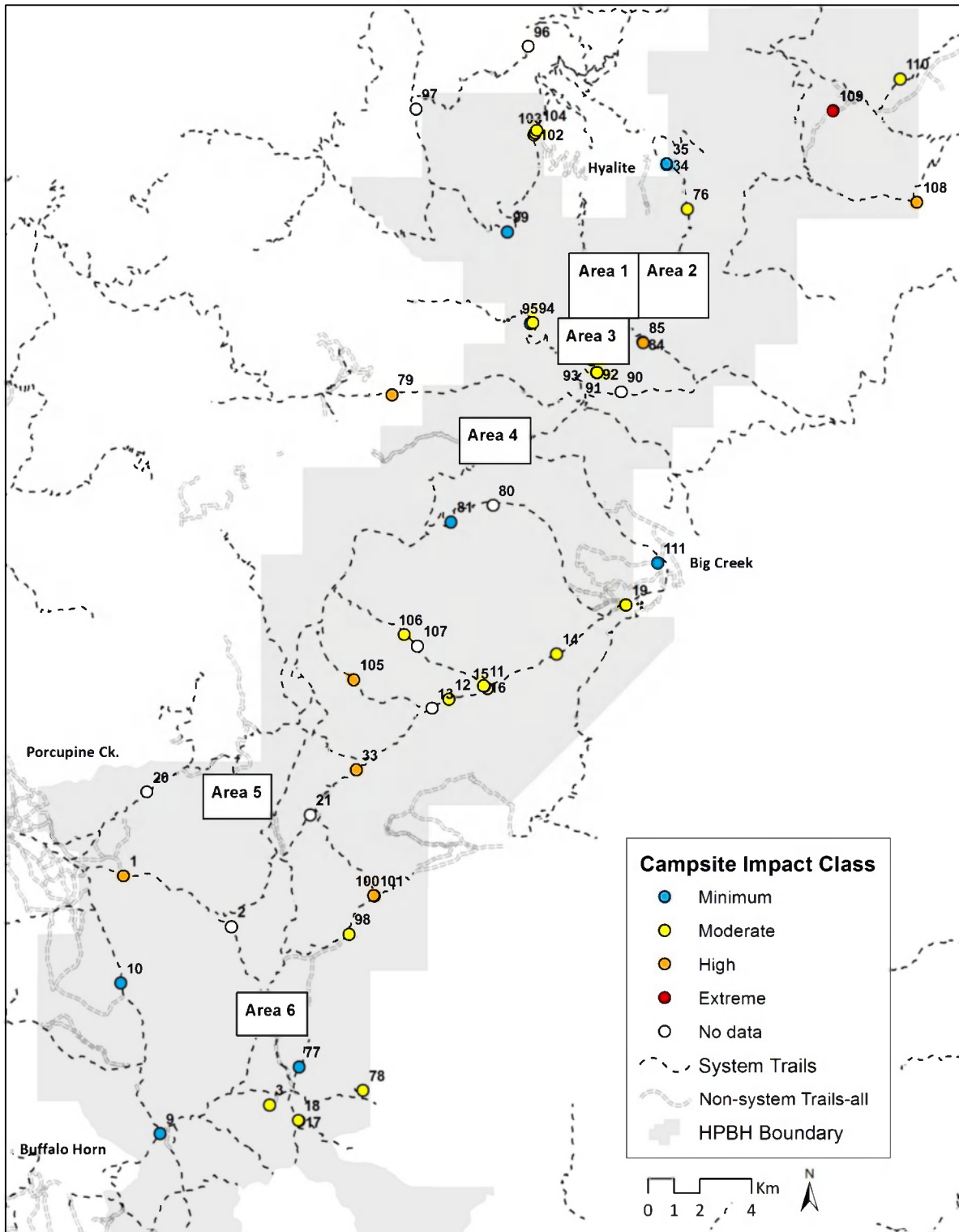
All trails within the burned areas were in rough shape. Even areas that had been cleared had many downed trees. The tread was difficult to follow and was being taken over by perennial plants due to lack

of use. On steep slopes the tread was often gone completely. We had a very hard time staying on the trails and finding them.

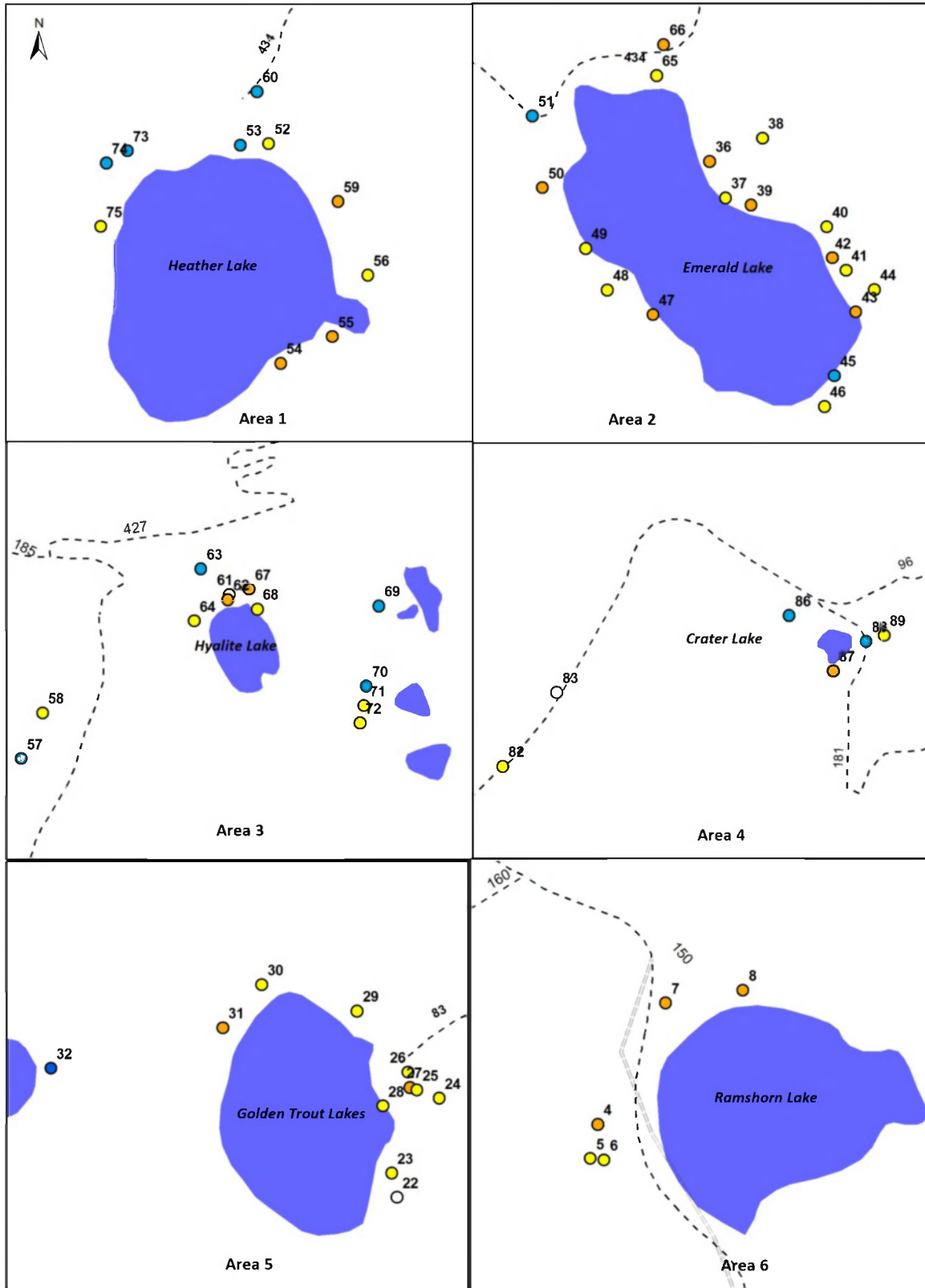
Trail Notes:

- #132: Some portions of trail #132 were clearly marked while others were very vague and difficult to follow, especially through the meadows near the private land. Along Eightmile Creek the trail was hard follow, overgrown, and had countless downed trees. We doubt that trail #132 beyond the junction with #155 is used.
- #155: From junction with #132, #155 was followed for approximately 3 miles north until trail dissipated into a series of game trails and was lost. Trail #155 was pretty easy to follow up the first mile of switchbacks. There were many downed trees, but the tread was pretty well defined. As the trail continued, the tread became less and less distinct. By three miles in, we were very uncertain where the trail was and it became indistinguishable from the network of game trails.
- #135 and Non-system trail south of #135: Trail #135 was well blazed and easy to follow. We monitored one non-system trail that paralleled #135. It was blazed with orange dots. There were also many confusing networks of non-system trail south along the nearby ridges and around the outfitter camp. It looked like several different people were blazing different trails and we gave up trying to piece together one cohesive trail.
- #139: Monitored to junction with #135. Good condition, well-marked and easy to find. This trail was thick with weeds at lower elevations. We found bull thistle, Canada thistle, houndstongue, and common mullein in large thick patches. All the weeds were seeding, so polygons were not collected to prevent the spread the seeds. Instead, weed points, and some weed lines were taken for the infestations that followed the trail.

APPENDIX 3. CAMPSITE INVENTORY & CONDITION



Location and impact class of inventoried campsites (see next page for map of areas 1-6)



Location and impact class of inventoried campsites for areas 1-6 (see map on previous page)

Campsite #1



Location

Easting (m)	485,225
Northing (m)	5,006,189
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	Streamside
Tree Cover	>75%
Dominant Trees (1-3)	spruce, lodgepole pine,
Dominant Understory (1-3)	<i>Chamerion angustifolium</i> , <i>Actaea L.</i> , <i>streptopus amplexifolius</i>

Conditions

Veg. cover at Site/Off Site	26-50%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	39
Impact Class	High

Campsite #2



Location

Easting (m)	489,401
Northing (m)	5,004,225
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	-

Ecological Associations

Landform	Streamside
Tree Cover	<25%
Dominant Trees (1-3)	lodgepole pine, spruce, subalpine fir <i>Erythronium grandiflorum</i> , <i>Thalictrum occidentale</i> ,
Dominant Understory (1-3)	<i>Calypso bulbosa</i>

Conditions

Veg. cover at Site/Off Site	26-50%/26-50%
Mineral Soil Exposure at Site/Off Site	26-50%/26-50%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	-
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #3



Location

Easting (m)	490,879
Northing (m)	4,997,318
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	forest
Tree Cover	50%- 75%
Dominant Trees (1-3)	lodgepole pine, subalpine fir, spruce <i>Erythronium grandiflorum</i> , <i>Thalictrum occidentale</i> ,
Dominant Understory (1-3)	<i>Fragaria virginiana</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	None
Development	None
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	28
Impact Class	Moderate

Campsite #4

(no photos)

Location

Easting (m)	491,159
Northing (m)	5,000,325
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	lodgepole pine, subalpine fir, spruce
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , unk grass, <i>Potentilla spp</i>

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	>3 discernible or >1 well-worn
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	44
Impact Class	High

Campsite #5

(no photos)

Location

Easting (m)	491,152
Northing (m)	5,000,295
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	lodgepole pine, subalpine fir, spruce
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , unk grass, <i>Potentilla spp</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	33
Impact Class	Moderate

Campsite #6

(no photos)

Location

Easting (m)	491,165
Northing (m)	5,000,293
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	lodgepole pine, subalpine fir, spruce
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> ,

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	28
Impact Class	Moderate

Campsite #7

(no photos)

Location

Easting (m)	491,219
Northing (m)	5,000,433
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, lodgepole pine, spruce
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , unk. grass, <i>Potentilla spp</i>

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	>3 discernible or >1 well-worn
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	43
Impact Class	High

Campsite #8

(no photos)

Location

Easting (m)	491,288
Northing (m)	5,000,444
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	>75%
Dominant Trees (1-3)	spruce, subalpine fir, lodgepole pine
Dominant Understory (1-3)	-

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	44
Impact Class	High

Campsite #9



Location

Easting (m)	486,646
Northing (m)	4,996,206
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	25%- 50%
Dominant Trees (1-3)	lodgepole pine
Dominant Understory (1-3)	<i>Juniperus communis</i> , <i>Gaultheria L.</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	-
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #10



Location

Easting (m)	485,124
Northing (m)	5,002,039
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	forest
Tree Cover	25%- 50%
Dominant Trees (1-3)	lodgepole pine, spruce, subalpine fir
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Pedicularis groenlandica</i> , <i>Claytonia spp.</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	23
Impact Class	Minimum

Campsite #11

(no photos)

Location

Easting (m)	499,172
Northing (m)	5,013,551
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>Taraxacum officinale</i> , <i>Trifolium spp.</i> , unk. grass

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	32
Impact Class	Moderate

Campsite #12



Location

Easting (m)	497,825
Northing (m)	5,013,029
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	douglas fir
Dominant Understory (1-3)	unk. grass, <i>Fragaria virginiana</i> , <i>Thalictrum occidentale</i>

Conditions

Veg. cover at Site/Off Site	6-25%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	32
Impact Class	Moderate

Campsite #13

(no photos)

Location

Easting (m)	497,164
Northing (m)	5,012,673
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	-
Dominant Understory (1-3)	-

Conditions

Veg. cover at Site/Off Site	
Mineral Soil Exposure at Site/Off Site	
Tree Damage	-
Root Exposure	-
Development	-
Cleanliness	-
Social Trails	-
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #14

(no photos)

Location

Easting (m)	501,992
Northing (m)	5,014,781
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce <i>Antennaria spp., Potentilla spp., Festuca idahoensis</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #15



Location

Easting (m)	499,323
Northing (m)	5,013,448
Distance to Trail	>200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	>75%
Dominant Trees (1-3)	douglas fir
Dominant Understory (1-3)	<i>Taraxacum officinale</i> , unk. grass

Conditions

Veg. cover at Site/Off Site	6-25%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Human waste, much litter or manure
Social Trails	>3 discernible or >1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	42
Impact Class	High

Campsite #16

(no photos)

Location

Easting (m)	499,184
Northing (m)	5,013,544
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce <i>Taraxacum officinale</i> , <i>Trifolium spp.</i> , <i>Thalictrum occidentale</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	31
Impact Class	Moderate

Campsite #17



Location

Easting (m)	492,032
Northing (m)	4,996,705
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	forest
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, white bark pine, subalpine fir <i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Arnica cordifolia</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	None
Cleanliness	No more than scattered charcoal from 1 fire ring
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #18



Location

Easting (m)	491,997
Northing (m)	4,996,715
Distance to Trail	>200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	forest
Tree Cover	25%- 50%
Dominant Trees (1-3)	white bark pine, spruce, subalpine fir
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> <i>Chamerion angustifolium</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	None
Cleanliness	No more than scattered charcoal from 1 fire ring
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	24
Impact Class	Moderate

Campsite #19

(no photos)

Location

Easting (m)	504,677
Northing (m)	5,016,679
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce <i>Taraxacum officinale</i> , <i>Trifolium spp.</i> , <i>Calamagrostis rubescens</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	25
Impact Class	Moderate

Campsite #20

(no photos)

Location

Easting (m)	486,140
Northing (m)	5,009,437
Distance to Trail	-
Distance to Water	-
Distance to Closest Campsite	-

Ecological Associations

Landform	
Tree Cover	
Dominant Trees (1-3)	-
Dominant Understory (1-3)	-

Conditions

Veg. cover at Site/Off Site	
Mineral Soil Exposure at Site/Off Site	
Tree Damage	-
Root Exposure	-
Development	-
Cleanliness	-
Social Trails	-
Camp Area	-
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #21

(no photos)

Location

Easting (m)	492,456
Northing (m)	5,008,552
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, <i>Erythronium grandiflorum</i> , <i>Claytonia lanceolata</i> , <i>Rumex</i>
Dominant Understory (1-3)	<i>spp.</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/26-50%
Tree Damage	None
Root Exposure	-
Development	None
Cleanliness	No more than scattered charcoal from 1 fire ring
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #22



Location

Easting (m)	489,540
Northing (m)	5,008,847
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, limber pine, subalpine fir <i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Claytonia L.</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	6-25%/76-100%
Mineral Soil Exposure at Site/Off Site	76-100%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #23



Location

Easting (m)	489,537
Northing (m)	5,008,864
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, limber pine, <i>Rhododendron albiflorum</i> , <i>Erythronium grandiflorum</i> ,
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/51-75%
Mineral Soil Exposure at Site/Off Site	
Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	No more than scattered charcoal from 1 fire ring
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	30
Impact Class	Moderate

Campsite #24



Location

Easting (m)	489,569
Northing (m)	5,008,914
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, limber pine, subalpine fir
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Claytonia L.</i>

Conditions

Veg. cover at Site/Off Site	26-50%/76-100%
Mineral Soil Exposure at Site/Off Site	26-50%/6-25%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	31
Impact Class	Moderate

Campsite #25



Location

Easting (m)	489,554
Northing (m)	5,008,919
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, limber pine,
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat Remnants of >1 fire ring, some litter or manure
Cleanliness	
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	31
Impact Class	Moderate

Campsite #26



Location

Easting (m)	489,548
Northing (m)	5,008,931
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, limber pine, subalpine fir <i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Claytonia L.</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	76-100%/6-25%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	34
Impact Class	Moderate

Campsite #27



Location

Easting (m)	489,549
Northing (m)	5,008,921
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, limber pine, subalpine fir <i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Claytonia L.</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	76-100%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	37
Impact Class	High

Campsite #28



Location

Easting (m)	489,531
Northing (m)	5,008,908
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Rhododendron albiflorum</i> ,

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	29
Impact Class	Moderate

Campsite #29



Location

Easting (m)	489,514
Northing (m)	5,008,972
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, limber pine, subalpine fir <i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Claytonia L.</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	26-50%/76-100%
Mineral Soil Exposure at Site/Off Site	26-50%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	31
Impact Class	Moderate

Campsite #30



Location

Easting (m)	489,450
Northing (m)	5,008,990
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	loblolly pine <i>Erythronium grandiflorum</i> , <i>Caltha leptosepala</i> , <i>Claytonia lanceolata</i>
Dominant Understory (1-3)	<i>lanceolata</i>

Conditions

Veg. cover at Site/Off Site	0-5%/26-50%
Mineral Soil Exposure at Site/Off Site	
Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	29
Impact Class	Moderate

Campsite #31



Location

Easting (m)	489,424
Northing (m)	5,008,961
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce, limber pine, subalpine fir <i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	76-100%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	36
Impact Class	High

Campsite #32



Location

Easting (m)	489,309
Northing (m)	5,008,934
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	limber pine, subalpine fir, spruce
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Arnica cordifolia</i>

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #33

(no photo)

Location

Easting (m)	494,235
Northing (m)	5,010,292
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	subalpine fir, spruce, lodgepole pine
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Taraxacum officinale</i> , <i>Lupinus spp.</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	38
Impact Class	High

Campsite #34



Location

Easting (m)	506,258
Northing (m)	5,033,739
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	forest
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce,
Dominant Understory (1-3)	<i>Trifolium pratense</i> , <i>Fragaria virginiana</i> , <i>Taraxacum officinale</i>

Conditions

Veg. cover at Site/Off Site	26-50%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	34
Impact Class	Moderate

Campsite #35



Location

Easting (m)	506,257
Northing (m)	5,033,764
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>Geranium richardsonii</i> , unk. grass, <i>Fragaria virginiana</i>

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #36



Location

Easting (m)	505,805
Northing (m)	5,028,922
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>lupinus spp</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	36
Impact Class	High

Campsite #37



Location

Easting (m)	505,823
Northing (m)	5,028,882
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	33
Impact Class	Moderate

Campsite #38



Location

Easting (m)	505,862
Northing (m)	5,028,947
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	forest
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Claytonia lanceolata</i> , <i>Senecio triangularis</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #39



Location

Easting (m)	505,850
Northing (m)	5,028,874
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	41
Impact Class	High

Campsite #40



Location

Easting (m)	505,932
Northing (m)	5,028,851
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	spruce, limber pine,
Dominant Understory (1-3)	<i>lupinus spp</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #41



Location

Easting (m)	505,953
Northing (m)	5,028,804
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	spruce, limber pine,
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	33
Impact Class	Moderate

Campsite #42



Location

Easting (m)	505,938
Northing (m)	5,028,817
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Arnica cordifolia</i> , <i>Claytonia lanceolata</i>

Conditions

Veg. cover at Site/Off Site	0-5%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	45
Impact Class	High

Campsite #43



Location

Easting (m)	505,963
Northing (m)	5,028,759
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Arnica cordifolia</i> , unk. grass

Conditions

Veg. cover at Site/Off Site	0-5%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/6-25%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	39
Impact Class	High

Campsite #44



Location

Easting (m)	505,983
Northing (m)	5,028,783
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	33
Impact Class	Moderate

Campsite #45



Location

Easting (m)	505,940
Northing (m)	5,028,690
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Caltha leptosepala</i> , <i>Phyllodoce empetrifomis</i>

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	23
Impact Class	Minimum

Campsite #46



Location

Easting (m)	505,929
Northing (m)	5,028,657
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #47



Location

Easting (m)	505,744
Northing (m)	5,028,756
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>antennaria spp.</i> , <i>Claytonia lanceolata</i>

Conditions

Veg. cover at Site/Off Site	6-25%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	43
Impact Class	High

Campsite #48

(no photo)

Location

Easting (m)	505,695
Northing (m)	5,028,783
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	>75%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Arnica cordifolia</i> , <i>Chamerion angustifolium</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	30
Impact Class	Moderate

Campsite #49



Location

Easting (m)	505,672
Northing (m)	5,028,828
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	-
Dominant Understory (1-3)	<i>Claytonia lanceolata</i> , <i>Caltha leptosepala</i> , <i>Ranunculus eschscholtzii</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	25
Impact Class	Moderate

Campsite #50



Location

Easting (m)	505,625
Northing (m)	5,028,893
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Caltha leptosepala</i> , <i>Phyllodoce empetriformis</i> , <i>Claytonia lanceolata</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	36
Impact Class	High

Campsite #51



Location

Easting (m)	505,614
Northing (m)	5,028,971
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	NA
Dominant Trees (1-3)	NA
Dominant Understory (1-3)	<i>Claytonia lanceolata</i> , unk. grass, <i>Dodecatheon pulchellum</i>

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #52



Location

Easting (m)	505,053
Northing (m)	5,028,606
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, limber pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Claytonia lanceolata</i> ,

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #53



Location

Easting (m)	505,024
Northing (m)	5,028,604
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	NA
Dominant Trees (1-3)	NA
Dominant Understory (1-3)	unk. grass

Conditions

Veg. cover at Site/Off Site	26-50%/26-50%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #54



Location

Easting (m)	505,065
Northing (m)	5,028,384
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	40
Impact Class	High

Campsite #55



Location

Easting (m)	505,117
Northing (m)	5,028,410
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	38
Impact Class	High

Campsite #56



Location

Easting (m)	505,153
Northing (m)	5,028,473
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	white bark pine, spruce, subalpine fir
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	34
Impact Class	Moderate

Campsite #57



Location

Easting (m)	503,343
Northing (m)	5,026,182
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Claytonia L.</i> , <i>Erythronium grandiflorum</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	21
Impact Class	Minimum

Campsite #58

(no photo)

Location

Easting (m)	503,380
Northing (m)	5,026,261
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Cassiope D.</i> , <i>Vaccinium scoparium</i> , <i>Ranunculus macauleyi</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/0-5%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	29
Impact Class	Moderate

Campsite #59



Location

Easting (m)	505,123
Northing (m)	5,028,548
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce,
Dominant Understory (1-3)	<i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/26-50%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	40
Impact Class	High

Campsite #60



Location

Easting (m)	505,041
Northing (m)	5,028,659
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	NA
Dominant Trees (1-3)	subalpine fir, white bark pine,
Dominant Understory (1-3)	unk. grass

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #61



Location

Easting (m)	503,703
Northing (m)	5,026,465
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Claytonia L.</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	51-75%/6-25%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	-
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	31
Impact Class	Moderate

Campsite #62



Location

Easting (m)	503,699
Northing (m)	5,026,456
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Vaccinium scoparium</i> , <i>Claytonia L.</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	51-75%/6-25%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Human waste, much litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	41
Impact Class	High

Campsite #63



Location

Easting (m)	503,653
Northing (m)	5,026,509
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Ranunculus macauleyi</i>

Conditions

Veg. cover at Site/Off Site	6-25%/6-25%
Mineral Soil Exposure at Site/Off Site	51-75%/51-75%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #64



Location

Easting (m)	503,641
Northing (m)	5,026,419
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Ranunculus macauleyi</i> ,

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	51-75%/26-50%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	30
Impact Class	Moderate

Campsite #65



Location

Easting (m)	505,748
Northing (m)	5,029,014
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce,
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , unk. grass, <i>Arnica cordifolia</i>

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	29
Impact Class	Moderate

Campsite #66



Location

Easting (m)	505,756
Northing (m)	5,029,048
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce
Dominant Understory (1-3)	barren

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	42
Impact Class	High

Campsite #67

(no photo)

Location

Easting (m)	503,736
Northing (m)	5,026,474
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Ranunculus eschscholtzii</i> , <i>Vaccinium scoparium</i> , <i>Erythronium grandiflorum</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	37
Impact Class	High

Campsite #68

(no photo)

Location

Easting (m)	503,750
Northing (m)	5,026,440
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Ranunculus eschscholtzii</i> , <i>Vaccinium scoparium</i> , <i>Erythronium grandiflorum</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	32
Impact Class	Moderate

Campsite #69

(no photo)

Location

Easting (m)	503,960
Northing (m)	5,026,445
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	meadow
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Ranunculus eschscholtzii</i> , <i>Vaccinium scoparium</i> , <i>Erythronium grandiflorum</i>

Conditions

Veg. cover at Site/Off Site	26-50%/26-50%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	None
Cleanliness	No more than scattered charcoal from 1 fire ring
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	20
Impact Class	Minimum

Campsite #70

(no photo)

Location

Easting (m)	503,939
Northing (m)	5,026,307
Distance to Trail	>200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	meadow
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Ranunculus eschscholtzii</i> , <i>Carex spp.</i> , <i>Erythronium grandiflorum</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/26-50%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #71

(no photo)

Location

Easting (m)	503,935
Northing (m)	5,026,273
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	meadow
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Ranunculus eschscholtzii</i> , <i>Vaccinium scoparium</i> , <i>Erythronium grandiflorum</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/26-50%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	29
Impact Class	Moderate

Campsite #72

(no photo)

Location

Easting (m)	503,928
Northing (m)	5,026,243
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	meadow
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Senecio triangularis</i> , <i>Vaccinium scoparium</i> , <i>Erythronium grandiflorum</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/26-50%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	24
Impact Class	Moderate

Campsite #73



Location

Easting (m)	504,910
Northing (m)	5,028,599
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	<i>Phyllodoce empetriformis</i> , <i>Vaccinium scoparium</i> , <i>ranunculus spp</i>

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	21
Impact Class	Minimum

Campsite #74



Location

Easting (m)	504,888
Northing (m)	5,028,586
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, spruce, white bark pine
Dominant Understory (1-3)	unk. grass, <i>Vaccinium scoparium</i> , <i>ranunculus</i> spp

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/26-50%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	23
Impact Class	Minimum

Campsite #75



Location

Easting (m)	504,883
Northing (m)	5,028,522
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Dodecatheon pulchellum</i> ,

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	24
Impact Class	Moderate

Campsite #76



Location

Easting (m)	507,052
Northing (m)	5,032,011
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce, subalpine fir, lodgepole pine
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Arnica cordifolia</i> , <i>Thalictrum occidentale</i>

Conditions

Veg. cover at Site/Off Site	26-50%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #77



Location

Easting (m)	492,026
Northing (m)	4,998,793
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	saddle
Tree Cover	<25%
Dominant Trees (1-3)	limber pine, white bark pine,
Dominant Understory (1-3)	<i>Pedicularis racemosa</i> , <i>Antennaria alpina</i> , <i>festuca</i>

Conditions

Veg. cover at Site/Off Site	26-50%/26-50%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #78



Location

Easting (m)	494,503
Northing (m)	4,997,877
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	other
Tree Cover	<25%
Dominant Trees (1-3)	-
Dominant Understory (1-3)	<i>rosa spp, Antennaria alpina, unk. grass</i>

Conditions

Veg. cover at Site/Off Site	0-5%/26-50%
Mineral Soil Exposure at Site/Off Site	26-50%/6-25%
Tree Damage	None
Root Exposure	None
Development	>1 fire ring or other major development
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	31
Impact Class	Moderate

Campsite #79



Location

Easting (m)	495,619
Northing (m)	5,024,820
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	spruce, douglas fir,
Dominant Understory (1-3)	<i>Heracleum maximum</i> , <i>Sambucus racemosa</i> , <i>Phleum pratense</i>

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	>1 fire ring or other major development
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	37
Impact Class	High

Campsite #80

(no photo)

Location

Easting (m)	499,533
Northing (m)	5,020,533
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce, douglas fir,
Dominant Understory (1-3)	<i>Arnica cordifolia</i> , <i>Maianthemum stellatum</i> , <i>Thalictrum occidentale</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	-
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #81



Location

Easting (m)	497,909
Northing (m)	5,019,895
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	-

Ecological Associations

Landform	meadow
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce, limber pine,
Dominant Understory (1-3)	<i>lupinus spp</i> , <i>Arnica cordifolia</i> , <i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	-
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	23
Impact Class	Minimum

Campsite #82



Location

Easting (m)	499,068
Northing (m)	5,022,596
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	meadow
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, limber pine,
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Ranunculus eschscholtzii</i> , <i>Claytonia lanceolata</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	None
Cleanliness	No more than scattered charcoal from 1 fire ring
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	24
Impact Class	Moderate

Campsite #83

(no photo)

Location

Easting (m)	499,180
Northing (m)	5,022,750
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	-

Ecological Associations

Landform	meadow
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, white bark pine, spruce
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Arnica cordifolia</i> , <i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	-
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	2-3 discernible, max. 1 well-worn
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #84



Location

Easting (m)	505,327
Northing (m)	5,026,866
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	other
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, white bark pine, limber pine
Dominant Understory (1-3)	<i>Claytonia L.</i> , <i>Ranunculus macauleyi</i> , <i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	76-100%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	-
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #85



Location

Easting (m)	505,347
Northing (m)	5,026,832
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	forest
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, white bark pine,
Dominant Understory (1-3)	<i>Arnica cordifolia</i> , <i>Vaccinium scoparium</i> , <i>lupinus spp</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	35
Impact Class	High

Campsite #86

(no photo)

Location

Easting (m)	499,667
Northing (m)	5,022,911
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, white bark pine,
Dominant Understory (1-3)	<i>unk. grass, Vaccinium scoparium , Fragaria virginiana</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #87

(no photo)

Location

Easting (m)	499,759
Northing (m)	5,022,795
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	spruce, white bark pine, subalpine fir
Dominant Understory (1-3)	<i>Mertensia spp.</i> , <i>Carex spp.</i> , <i>unk. grass</i>

Conditions

Veg. cover at Site/Off Site	26-50%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/6-25%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	42
Impact Class	High

Campsite #88



Location

Easting (m)	499,827
Northing (m)	5,022,857
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	white bark pine, subalpine fir,
Dominant Understory (1-3)	<i>mertensia spp</i> , <i>unk. grass</i> ,

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #89



Location

Easting (m)	499,865
Northing (m)	5,022,870
Distance to Trail	>200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	subalpine fir, white bark pine,
Dominant Understory (1-3)	<i>mertensia spp, unk. grass, lupinus spp</i>

Conditions

Veg. cover at Site/Off Site	0-5%/51-75%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	1-6 trees with roots exposed
Development	None
Cleanliness	No more than scattered charcoal from 1 fire ring
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #90



Location

Easting (m)	504,497
Northing (m)	5,024,930
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	25%- 50%
Dominant Trees (1-3)	white bark pine, limber pine, subalpine fir
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Phyllodoce empetriformis</i> , <i>lupine spp</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/6-25%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #91



Location

Easting (m)	503,539
Northing (m)	5,025,679
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Claytonia L.</i> , <i>Ranunculus macauleyi</i> , <i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	51-75%/26-50%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #92



Location

Easting (m)	503,552
Northing (m)	5,025,670
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Claytonia L.</i> , <i>Ranunculus macauleyi</i> , <i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	51-75%/26-50%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #93



Location

Easting (m)	503,562
Northing (m)	5,025,678
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	subalpine fir, limber pine, white bark pine
Dominant Understory (1-3)	<i>Claytonia L.</i> , <i>Ranunculus macauleyi</i> , <i>Phyllodoce empetrifomis</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	51-75%/26-50%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	26
Impact Class	Moderate

Campsite #94



Location

Easting (m)	501,071
Northing (m)	5,027,607
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	douglas fir, white bark pine, subalpine fir
Dominant Understory (1-3)	<i>Erythronium grandiflorum</i> , <i>Claytonia L.</i> , <i>Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	51-75%/26-50%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	26
Impact Class	Moderate

Campsite #95



Location

Easting (m)	500,971
Northing (m)	5,027,588
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	limber pine, white bark pine, subalpine fir <i>Erythronium grandiflorum</i> , <i>Claytonia L.</i> , <i>Vaccinium scoparium</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	21
Impact Class	Minimum

Campsite #96



Location

Easting (m)	500,894
Northing (m)	5,038,306
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	meadow
Tree Cover	<25%
Dominant Trees (1-3)	NA
Dominant Understory (1-3)	<i>Geranium viscosissimum</i> , <i>Cirsium arvense</i> , <i>Achillea millefolium</i>

Conditions

Veg. cover at Site/Off Site	26-50%/76-100%
Mineral Soil Exposure at Site/Off Site	26-50%/6-25%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #97



Location

Easting (m)	496,554
Northing (m)	5,035,878
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	25%- 50%
Dominant Trees (1-3)	douglas fir, spruce, <i>Thalictrum occidentale</i> , <i>Geranium viscosissimum</i> , <i>Mertensia paniculata</i>
Dominant Understory (1-3)	

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	-
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #98



Location

Easting (m)	493,958
Northing (m)	5,003,931
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	spruce, subalpine fir, lodgepole pine
Dominant Understory (1-3)	<i>Achillea millefolium</i> , <i>Fragaria virginiana</i> , <i>potentilla</i> spp.

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	27
Impact Class	Moderate

Campsite #99



Location

Easting (m)	500,080
Northing (m)	5,031,132
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	meadow
Tree Cover	<25%
Dominant Trees (1-3)	NA
Dominant Understory (1-3)	<i>lupinus spp, Achillea millefolium, mertensia spp</i>

Conditions

Veg. cover at Site/Off Site	26-50%/26-50%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	None
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	22
Impact Class	Minimum

Campsite #100



Location

Easting (m)	494,947
Northing (m)	5,005,419
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce lodgepole pine
Dominant Understory (1-3)	<i>Equisetum arvense</i> , <i>Vaccinium scoparium</i> , <i>Chamerion angustifolium</i>

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	41
Impact Class	High

Campsite #101



Location

Easting (m)	494,918
Northing (m)	5,005,432
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	spruce lodgepole pine
Dominant Understory (1-3)	<i>Achillea millefolium</i> , <i>potentilla spp.</i> , <i>antennaria spp.</i>

Conditions

Veg. cover at Site/Off Site	26-50%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	>500 ft. ²

Impact Evaluation

Impact Index Score	36
Impact Class	High

Campsite #102



Location

Easting (m)	501,108
Northing (m)	5,034,872
Distance to Trail	>200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce, subalpine fir, douglas fir
Dominant Understory (1-3)	<i>Geranium viscosissimum</i> , <i>Ribes lacustre</i> , heart leaved <i>arnica</i>

Conditions

Veg. cover at Site/Off Site	6-25%/76-100%
Mineral Soil Exposure at Site/Off Site	51-75%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #103



Location

Easting (m)	501,167
Northing (m)	5,034,953
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	50%- 75%
Dominant Trees (1-3)	spruce, subalpine fir, douglas fir
Dominant Understory (1-3)	<i>Taraxacum officinale</i> , <i>Achillea millefolium</i> , <i>Arnica cordifolia</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	76-100%/0-5%
Tree Damage	1-8 scarred, or 1-3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	38
Impact Class	High

Campsite #104



Location

Easting (m)	501,215
Northing (m)	5,035,056
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	<500 ft

Ecological Associations

Landform	lakeshore
Tree Cover	<25%
Dominant Trees (1-3)	NA
Dominant Understory (1-3)	<i>Taraxacum officinale</i> , <i>Cirsium aridum</i> , <i>Heracleum maximum</i>

Conditions

Veg. cover at Site/Off Site	6-25%/26-50%
Mineral Soil Exposure at Site/Off Site	51-75%/26-50%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	26
Impact Class	Moderate

Campsite #105



Location

Easting (m)	494,151
Northing (m)	5,013,790
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	meadow
Tree Cover	50%- 75%
Dominant Trees (1-3)	subalpine fir, spruce, lodgepole pine
Dominant Understory (1-3)	<i>Erigeron speciosus</i> , <i>Fragaria virginiana</i> , <i>Achillea millefolium</i>

Conditions

Veg. cover at Site/Off Site	51-75%/76-100%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Human waste, much litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	40
Impact Class	High

Campsite #106



Location

Easting (m)	496,098
Northing (m)	5,015,529
Distance to Trail	<200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	<25%
Dominant Trees (1-3)	lodgepole pine, spruce,
Dominant Understory (1-3)	<i>Heracleum maximum</i> , <i>Chamerion angustifolium</i> , <i>geranium spp</i>

Conditions

Veg. cover at Site/Off Site	76-100%/76-100%
Mineral Soil Exposure at Site/Off Site	0-5%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	>500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	34
Impact Class	Moderate

Campsite #107

(no photos)

Location

Easting (m)	496,599
Northing (m)	5,015,094
Distance to Trail	-
Distance to Water	-
Distance to Closest Campsite	-

Ecological Associations

Landform	
Tree Cover	
Dominant Trees (1-3)	-
Dominant Understory (1-3)	-

Conditions

Veg. cover at Site/Off Site	
Mineral Soil Exposure at Site/Off Site	
Tree Damage	-
Root Exposure	-
Development	-
Cleanliness	-
Social Trails	-
Camp Area	-
Barren Core Camp Area	-

Impact Evaluation

Impact Index Score	-
Impact Class	missing data

Campsite #108

(no photos)

Location

Easting (m)	515,944
Northing (m)	5,032,275
Distance to Trail	>200 ft
Distance to Water	<200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	streamside
Tree Cover	25%- 50%
Dominant Trees (1-3)	douglas fir
Dominant Understory (1-3)	<i>Bromus inermis</i> , <i>Calochortus nuttallii</i> , <i>Achillea millefolium</i>

Conditions

Veg. cover at Site/Off Site	51-75%/51-75%
Mineral Soil Exposure at Site/Off Site	26-50%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	1-6 trees with roots exposed
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	35
Impact Class	High

Campsite #109



Location

Easting (m)	512,699
Northing (m)	5,035,818
Distance to Trail	>200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	saddle
Tree Cover	50%- 75%
Dominant Trees (1-3)	subalpine fir, lodgepole pine,
Dominant Understory (1-3)	<i>Vaccinium scoparium</i> , <i>Erythronium grandiflorum</i> , <i>Arnica cordifolia</i>

Conditions

Veg. cover at Site/Off Site	6-25%/51-75%
Mineral Soil Exposure at Site/Off Site	6-25%/0-5%
Tree Damage	>8 scarred trees, or >3 badly scarred or felled
Root Exposure	>6 trees with roots exposed
Development	>1 fire ring or other major development
Cleanliness	Human waste, much litter or manure
Social Trails	>3 discernible or >1 well-worn
Camp Area	>500 ft. ²
Barren Core Camp Area	50-500 ft. ²

Impact Evaluation

Impact Index Score	51
Impact Class	Extreme

Campsite #110



Location

Easting (m)	515,290
Northing (m)	5,037,050
Distance to Trail	<200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	saddle
Tree Cover	50%- 75%
Dominant Trees (1-3)	white bark pine
Dominant Understory (1-3)	<i>goldenrod, pinegrass, Vaccinium scoparium</i>

Conditions

Veg. cover at Site/Off Site	0-5%/76-100%
Mineral Soil Exposure at Site/Off Site	76-100%/0-5%
Tree Damage	No more than broken lower branches
Root Exposure	None
Development	1 fire ring with or without primitive log seat
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	32
Impact Class	Moderate

Campsite #111



Location

Easting (m)	505,899
Northing (m)	5,018,304
Distance to Trail	>200 ft
Distance to Water	>200 ft
Distance to Closest Campsite	>500 ft

Ecological Associations

Landform	other
Tree Cover	<25%
Dominant Trees (1-3)	douglas fir
Dominant Understory (1-3)	<i>festuca spp.</i> , <i>Artemisia tridentata</i> , <i>Juniperus communis</i>

Conditions

Veg. cover at Site/Off Site	26-50%/26-50%
Mineral Soil Exposure at Site/Off Site	6-25%/6-25%
Tree Damage	None
Root Exposure	None
Development	None
Cleanliness	Remnants of >1 fire ring, some litter or manure
Social Trails	No more than 1 discernible trail
Camp Area	<500 ft. ²
Barren Core Camp Area	<50 ft. ²

Impact Evaluation

Impact Index Score	21
Impact Class	Minimum

APPENDIX 4. CAMPSITE CONDITION EVALUATION WORKSHEET

Wilderness Campsite Inventory & Condition Evaluation (TLWSA 2010)

Date Evaluated: _____

Evaluated by: _____

Objectives:

1. Find out how many and where the campsites are
2. Create a GPS waypoint for each site
3. Evaluate changing campsite conditions (trend) over time
4. Photo record each site

PART 1: General Site Description

1. SITE NUMBER (Tr. #-campsite #): _____
2. Lat/Long _____
3. Elevation _____
4. DISTANCE TO CONSTRUCTED TRAIL: <200 ft **OR** >200ft
5. DISTANCE TO WATER: <200ft **OR** >200ft
6. DISTANCE TO CLOSEST CAMPSITE: <500ft **OR** >500ft
7. TWO PHOTOS from photo points that best describe the site. Note the compass bearing from the center of camp to the photo point for future replication.

PART 2: Wilderness Challenge Survey

- A. Evaluate disturbance to **ground cover of core camp only!**
Choose one:
- 1....flattened vegetation but still alive, minimal physical change
 - 2....vegetation worn away around center of activity
 - 3....vegetation lost on most of site, but humus and litter still present
 - 4....bare mineral soil widespread over most of site
- B. Evaluate severe damage to trees at site. A severely damaged tree has one of the following:
- been felled and is at least 4 inches in diameter
 - scarring that exceeds 1 square foot in total area
 - highly exposed roots totaling three linear feet
- Choose one:**
- 0....0-5 severely damaged trees
 - 1....6-10 severely damaged trees
 - 2....>10 severely damaged trees
- C. Quantify **total disturbed area** for site, adding satellite areas to core area:
Choose one:
- 0....Sum of disturbed areas equals 0 – 250 ft square
 - 1....Sum of disturbed areas equals 251 – 1000 ft square
 - 2....Sum of disturbed areas is greater than 1000 ft square

PART 3: Impact Evaluation

<p>1. VEGETATIVE COVER: <u>AREA</u> 50% 5 – 76-100% 75%</p>	<p><u>ON CAMPSITE</u> 1 – 0-5% 3 – 26-50% 5 – 76-100% 2 – 6-25% 4 – 51-75%</p>	<p><u>ON UNUSED COMPARATIVE</u> 1 – 0-5% 3 – 26- 2 – 6-25% 4 – 51-</p>
<p>2. MINERAL SOIL EXPOSURE 50% 5 – 76-100% 75%</p>	<p>1 – 0-5% 3 – 26-50% 5 – 76-100% 2 – 6-25% 4 – 51-75%</p>	<p>1 – 0-5% 3 – 26- 2 – 6-25% 4 – 51-</p>

		Rating (Circle one category)		
		1	2	
3	<u>SCORE WEIGHT TOTAL</u>			
<p>3. VEGETATIVE LOSS (Difference of two or more classes)</p>	<p>x2</p>	<p>(No difference in cover class)</p>	<p>(Difference of one cover class)</p>	<p>coverage</p>
<p>4. MINERAL SOIL EXPOSURE (Difference of two or more classes)</p>	<p>x3</p>	<p>(No difference in cover class)</p>	<p>(Difference of one cover class)</p>	<p>coverage</p>
<p>5. TREE DAMAGE >3 x2 # of trees damaged _____ felled)</p>		<p>(No more than broken lower branches)</p>	<p>(1-8 scarred trees, or 1-3 badly scarred or badly scarred or felled)</p>	<p>(> 8 scarred trees, or badly scarred or felled)</p>
<p>6. ROOT EXPOSURE with roots x3 # of trees with exposed roots _____</p>		<p>(None)</p>	<p>(1-6 trees with roots exposed)</p>	<p>(> 6 trees exposed)</p>
<p>7. DEVELOPMENT ring or other x1 without primitive major development)</p>		<p>(None)</p>	<p>(1 fire ring with or log seat)</p>	<p>(> 1 fire ring)</p>
<p>8. CLEANLINESS waste, much x1 No. of fire scars _____ manure)</p>		<p>(No more than scattered charcoal from 1 fire ring)</p>	<p>(Remnants of > 1 fire ring, some litter or manure)</p>	<p>(Human litter or manure)</p>
<p>9. SOCIAL TRAILS discernible or more x2 No. of trails _____</p>		<p>(No more than 1 discernable trail)</p>	<p>(2-3 discernable, max. 1 well-worn)</p>	<p>(> 3 than 1 well worn)</p>
<p>10. CAMP AREA x4 Estimated camp area _____</p>		<p>(< 500 ft square)</p>	<p>(500-2000 ft square)</p>	<p>(> 2000 ft square)</p>
<p>11. BARREN CORE CAMP AREA square) x2 Estimated camp area _____ IMPACT INDEX _____</p>		<p>(< 50 ft square)</p>	<p>(50 – 500 ft square)</p>	<p>(> 500 ft square)</p>

*Impact index scores: <23 = minimum, 24 to 34 = moderate, 35 to 45 = high, >45 = extreme

APPENDIX 5. 2011 INTERIM SUMMER TRAVEL RESTRICTIONS

Order Number: 11-11-00-02

**GALLATIN NATIONAL FOREST
10 East Babcock Ave.
P.O. Box 130, Federal Building
Bozeman, MT 59771
Forest Supervisor's Special Order**

Pursuant to 36 Code of Federal Regulations 261.50 (a) & (b) the following restrictions are in effect on the Gallatin National Forest. These restrictions are in addition to those enumerated in Subpart A, Part 261, Title 36 Code of Federal Regulations, and become effective when signed and will remain in effect for one year and may be reissued.

36 CFR 261.56 – Use of Vehicles Off National Forest System Roads:

When provided by an order, it is prohibited to possess or use a vehicle off National Forest System roads. [36 CFR 261.56]

For the purposes of this order, it is prohibited to use or possess any motor vehicle (including but not limited to motorcycles, ATVs, 4x4 vehicles) or bicycle in the Hyalite Porcupine Buffalo Horn (HPBH) Wilderness Study Area (WSA) (as described by Public Law 95-150) and displayed on the attached map exhibit. Use or possession of these vehicles is prohibited yearlong, except on roads or trails that are specifically designated as open during specific time periods as listed below. See the map exhibit attached to this order.

36 CFR 261.55 – Forest Development Trails:

Using any type of vehicle prohibited by the order. [36 CFR 261.55 (b)]

For the purposes of this order, it is prohibited to use or possess any motor vehicle (including but not limited to motorcycles, ATVs, 4x4 vehicle) or bicycle off of a designated open trail within the HPBH WSA. Use or possession of these vehicles is prohibited yearlong, except on trails that are specifically designated as open during specific time periods as listed below. See the map exhibit attached to this order.

Bicycles:

- A. The following trails are **designated as open** to bicycles year long. Bicycles must stay on the designated open trail, cross country travel is prohibited. Designated open trails include: West Pine #139; North Dry Divide #135 from the trailhead in T. 4 S. R.8E. Sec. 30 northwest approximately two miles to the junction with the West Pine Trail #139 in the northwest quarter of Section 24; Donahue #183, Blackmore #423; South Cottonwood #422; History Rock # 424; Storm Castle Ridge #417; Twin Cabin #46; First Cutoff

Creek #466; Hidden Lakes Cutoff #194; Hidden Lakes #179; Hidden Lake Divide #66; Storm Castle #185, Porcupine #199.

- B. The following trails are **designated as open** to bicycles from June 16 through March 31: Porcupine Creek #34 and Buffalo Horn #1. Bicycles are prohibited seasonally on these trails between April 1 – June 15 to protect the trail resource. Bicycles must stay on designated open trails, cross country travel is prohibited.
- C. The following trails are **designated as open to bicycles** yearlong, except that bicycles are prohibited on specific days from July 16 to September 4 (also see Gallatin NF Order # 08-11-00-01) Bicycles must stay on the following designated trails, cross country travel is prohibited:
 - a. The East Fork of Hyalite Trail #434 is designated as open to bicycles only on Tuesday, Wednesday, Thursday, Friday and Saturday from July 16th – September 4th. Bicycles are prohibited on the East Fork Hyalite Trail #434 on Sunday and Monday between July 16th and September 4th.
 - b. The Hyalite Trail #427 is designated as open to bicycles only on Sunday, Monday, Tuesday, Wednesday, and Thursday from July 16 – September 4. Bicycles are prohibited on the Hyalite Trail on Friday and Saturday from July 16 – September 4. This trail is designated as open to bicycling from the trailhead in T.5S., R.6E., Sec. 34 south to the junction with the Storm Castle Trail #185 in the northwest quarter of Sec. 23, T.5S., R.6E. only. Bicycles are prohibited yearlong on the Hyalite Trail #434 south of this junction. See the map exhibit attached.

Bicycles are defined as a vehicle with two wheels in tandem, propelled by foot pedals, and having handlebars for steering.

Motorcycles:

- A. The following trails are **designated as open to motorcycles** from July 16 – September 4. Motorcycles must stay on the designated open trail, cross country travel is prohibited. See the attached map exhibit
 - a. Buffalo Horn #1; Porcupine #199; Porcupine Creek #34; Ramshorn Lake #160; First Cutoff Trail #466; Hidden Lakes Divide #66; Hidden Lakes Cutoff # 194; Hidden Lakes 179; and Storm Castle Creek #185.
- B. The following trails are **designated as open to motorcycles** from July 16 – September 4, except on specific days noted below:
 - a. The East Fork of Hyalite Trail #434 is designated as open to motorcycles only on Wednesday, Thursday, Friday and Saturday from July 16th – September 4th. Motorcycles are prohibited on the East Fork Hyalite Trail #434 on Sunday, Monday and Tuesday between July 16th and September 4th.
 - b. The Hyalite Trail #427 is designated as open to motorcycles only on Sunday, Monday, Tuesday, Wednesday, and Thursday from July 16 – September 4. Motorcycles are prohibited on the Hyalite Trail on Friday and Saturday from July 16 – September 4. This trail is designated as open to motorcycling from the trailhead in T.5S., R.6E., Sec. 34 south to the junction with the Storm Castle Trail #185 in the northwest quarter of Sec. 23, T.5s., R.6E. only. Motorcycles are

prohibited yearlong on the Hyalite Trail #434 south of this junction. See the map exhibit attached.

Motorcycles are defined as a two-wheeled motor vehicle 50 inches or less in width on which two wheels are not side-by-side but in-line with the direction of travel.

These temporary restrictions are necessary to comply with a court ordered injunction for the HPBH Wilderness Study Area.

Exemptions:

Pursuant to 36 CFR 261.50(e), the following persons are exempt from this order:

1. Persons with a permit specifically authorizing the otherwise prohibited act or omission.
2. Any Federal, State, or local officer, or member of an organized rescue or firefighting force in the performance of an official duty.

Done at Bozeman, Montana this 19th day of May, 2011.

MARY C. ERICKSON
Forest Supervisor
Gallatin National Forest

Penalty: Violations of these Prohibitions are punishable by a fine of not more than \$5,000 for an individual or \$10,000 for an organization, or imprisonment for not more than six months, or both. [16 USC 551 and 18 USC 3559 and 3571].

Notification: A copy of this order shall be posted as prescribed under 36 CFR 261.51.

**Interim Summer Trails
 Hyalite Porcupine Buffalo Horn Wilderness Study Area
 Gallatin National Forest
 Special Order Number 10-11-00-01
 Exhibit A**

