



Lower Thunder Creek Trail and Camp Modifications Environmental Assessment



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ON THE COVER

Photo showing the forest in the vicinity of the proposed new McAllister Hiker Camps, Thunder Creek Valley, North Cascades National Park Service Complex.
NPS photo/Rob Burrows

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Chapter 1 - Introduction

1.1: PROPOSAL

The National Park Service (NPS) is proposing to reroute 1,500 feet of trail for hiker and stock use and relocate a hiker and group camp in the vicinity of McAllister Camps on the Thunder Creek Trail. Additionally, the NPS proposes to construct a new administrative camp near Junction camp another 3.5 miles up the same trail.

1.2: BACKGROUND

The Thunder Creek Trail is located in North Cascades National Park Service Complex (Park Complex) including portions of Ross Lake National Recreation Area (ROLA) and North Cascades National Park (NOCA). The trail and associated designated campsites related to the proposed action are located in the Stephen Mather Wilderness (Figure 1). Lower Thunder Creek trail and associated camps range in elevation from 1,200 feet at the trailhead at Colonial Creek Campground to 3,000 feet at Junction Camps (Figure 1). Thunder Creek sits in a north-south oriented U-shaped glacier carved valley that contains a variety of landforms including bedrock knobs, debris cones, debris aprons, floodplains, old river terraces, and glacial drift. To learn more about the trail see the [Thunder Creek Trail Guide](#) on the park's website (NPS 2018)

The NPS has maintained a trail and campsites for pack stock and hikers up Thunder Creek for over 50 years. The trail is maintained to standards established in the park's Trails Handbook; there are different standards for trails that are meant to accommodate hiker use only versus pack stock and hiker use. Backcountry camping along the trail is only allowed in designated camps, which protects natural and cultural resources by containing and concentrating recreational use to specific areas. Backcountry camping is only allowed by permit in the park complex, including along the Lower Thunder Creek trail. "The objective of the backcountry permit system is to disperse visitor use, reduce crowding and conflicts, and provide information and education about safe and low impact wilderness and backcountry use, thereby providing a quality wilderness experience that protects natural resources." ([Ross Lake National Recreation Area General Management Plan](#); NPS 2012). For more information about the backcountry permit system see the [Wilderness Trip Planner](#) on the park's website (NPS 2018)

Designated camps are connected to the main trail by short access trails. There may be multiple campsites within each camp area that allows for multiple groups to use the area but still maintain some solitude when camping. Each campsite has spaces allocated for a cooking/campfire area, tent pads, and when applicable stock animal areas. Because the NPS requires visitors to camp in specific places, the park conducts a hazard tree abatement program in accordance with National Park Service Pacific West Region Directive PW-062. The objective of this directive is, "To provide parks with a framework for a hazard tree program that will minimize threats to life and property from the failure of hazard trees within developed areas, consistent with the NPS mission of conserving parks' natural and cultural resources." The directive expressly addresses designated campsites in wilderness, "Where wilderness or backcountry campsites or other developments are designated and assigned by the NPS, e.g., permitted campsites, these areas should be identified for inclusion in the hazard tree management program, and such sites should be surveyed and hazards abated/mitigated."

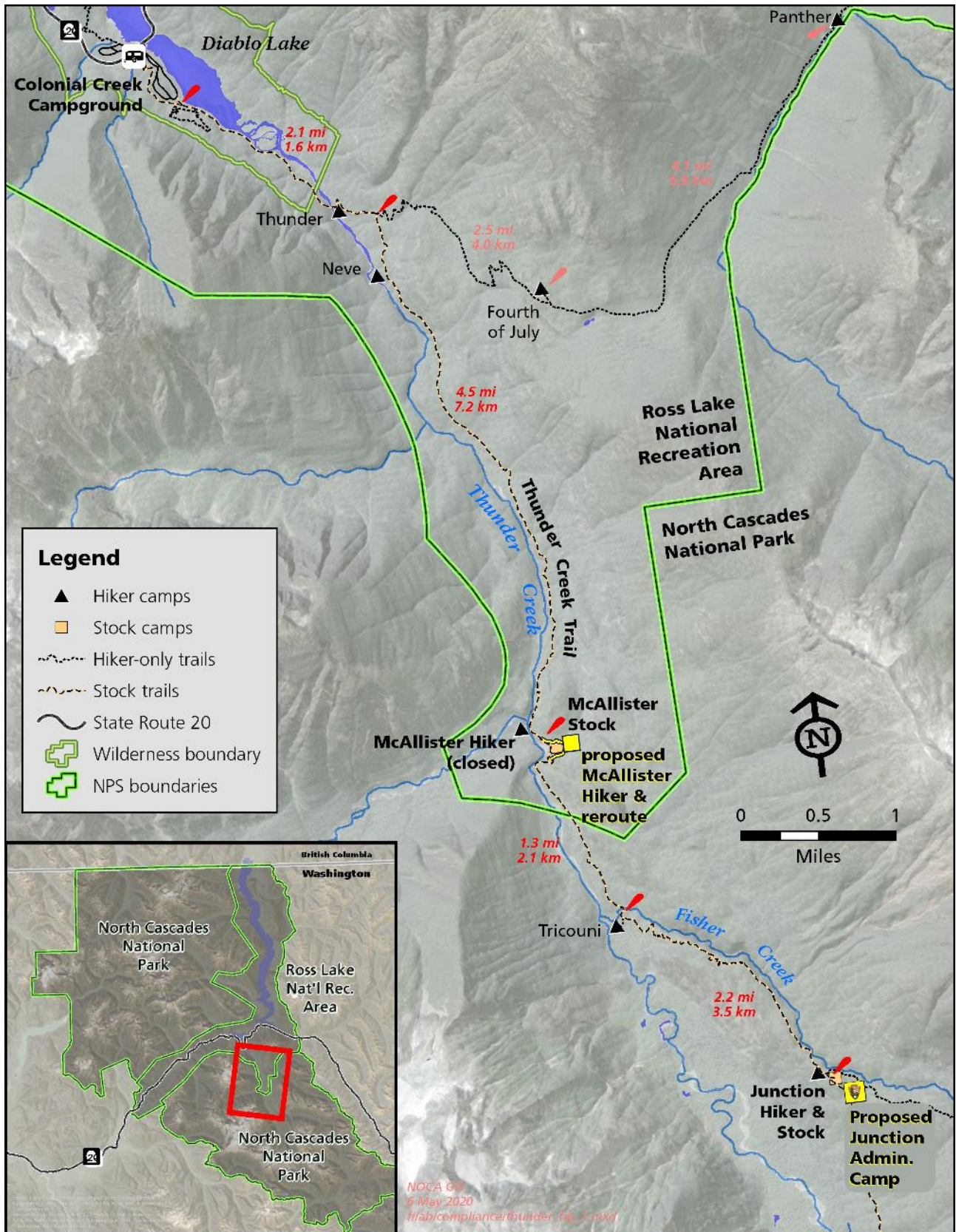


Figure 1. Map showing the Thunder Creek Trail, current locations of camps in lower Thunder Creek, the boundary between Ross National Recreation Area and North Cascades National Park, and surrounding topography.

Recreation along Thunder Creek Trail and camping within the designated camps is increasing in popularity. All camps in lower Thunder Creek have seen year-over-year increases in recreational use. From 2007 to 2017 backcountry overnight use along Thunder Creek increased from 430 to 1,100 visitor use nights per year at McAllister Hiker camp, an increase of 155% (Figure 2). This trend corresponds to a similar pattern of increased overnight use across the Park Complex.

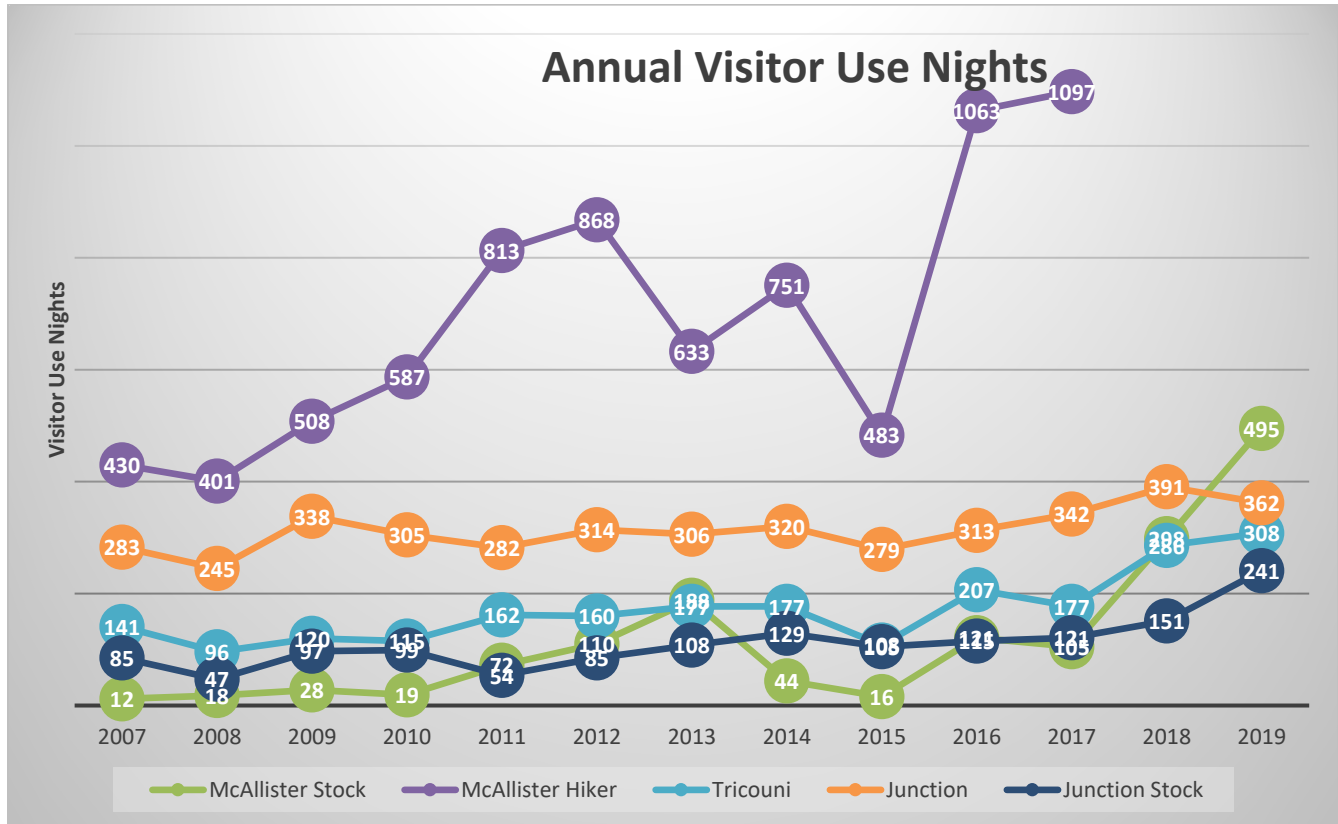


Figure 2. Total overnight use from backcountry permit data for camps in lower Thunder Creek including McAllister Stock, McAllister Hiker, Tricouni Hiker, Junction Hiker, Junction Stock. McAllister Hiker camp was closed in 2018 resulting in no public use. Use at McAllister Hiker camp is higher than the others because it has significantly higher capacity with four 4-person sites and one 12-person group site. The data represented in this graph is visitor use nights which is the sum of all nights spent by all people at each camp. Appendix D has more extensive data for additional camps in Thunder and Panther Creeks.

1.3: PURPOSE AND NEED FOR ACTION

The purpose this action is to preserve wilderness character in lower Thunder Creek by minimizing the impacts associated with recreation. This is accomplished by rerouting the trail to safely accommodate both hiker and stock use and the continued policy of maintaining designated campsites within the wilderness. The preservation of wilderness character includes natural and cultural resources and wilderness-centered visitor opportunities.

The need for the project arises from the National Park Service’s responsibilities under the Organic Act of 1916 and the Wilderness Act of 1964. Maintaining the wilderness character, allowing for recreation, and minimizing impacts to resources are further addressed in the North Cascades National Park Wilderness Management Plan (NPS 1989) and [Ross Lake National Recreation Area General Management Plan](#) (NPS

2012). As a whole these provide the legislative and policy framework for the NPS and its actions, including the proposed action. For more information on the Park Complex including purpose and significance see the [Foundation Document](#) (NPS 2017).

The effects of erosion, flooding, increased visitor use, and resource protection concerns have created the need for action. The trail follows the top edge of a large actively eroding bluff above Thunder Creek just west of McAllister Stock camp (Figure 3). There is limited space between the bluff and McAllister Stock camp to continue to incrementally move the trail eastward. One corner on the trail has been infringed upon by a slow-moving mass movement classified as a slump or creep, to the point it presents a hazard for stock use. In November 2017 a large flood on Thunder Creek completely washed out the pedestrian bridge that provided access from the main trail to McAllister Hiker camp. The debris of the bridge now sits on a gravel bar in Thunder Creek and is comprised of wood and two 50-foot long, 2,300-pound steel I-beams. The concrete, wood, and rock abutments remain on the bedrock bench above Thunder Creek (Figure 4). A survey that same year identified approximately thirty large diameter hazard trees in the McAllister Hiker camp, necessitating closure of the entire camp to protect the natural condition of the forest there. McAllister Hiker camp includes a single large group site for up to twelve people and four smaller sites designed to accommodate up to four backpackers each. Normally, in accordance with established policy, the NPS would fell hazard trees in designated camps to abate the risk of falling dead and dying trees. In this instance, the hazard trees in the vicinity of McAllister Hiker camp are valuable wildlife habitat and the NPS prefers not to cut such a large number of trees and instead prefers to move the camp. In turn, relocation of the camp supports wilderness character by maintaining the area so it “generally appears to have been affected primarily by the forces of nature, with the imprint of man’s work... substantially unnoticeable” (Section 2(c), Wilderness Act of 1964). The NPS trail crew often occupies McAllister and Junction Stock camps when conducting annual trail maintenance work, often for weeks at a time. This results in competition with the public for camp space in the valley. The NPS prefers to alleviate this competition by relocating McAllister Hiker and constructing a new administrative camp near the other Junction camps.



Figure 3. Photo showing the eroding bluff above Thunder Creek in the vicinity of the McAllister camps. The trail follows the edge of the bluff on the middle left side of the photo.



Figure 4. The bridge abutment in the foreground and Thunder Creek in a small gorge in the background where the bridge was washed out during the flood in late November 2017. Note the bent over bolts on the abutment.

Chapter 2 – Alternatives

2.1: ALTERNATIVE I: PROPOSED ACTION

The Proposed Action:

- Reroute ~1,500 feet of the Thunder Creek trail for stock and hiker use in the vicinity of McAllister Stock camp. This includes construction of a new puncheon bridge over a small creek.
- Relocate the McAllister Hiker camp to the vicinity of McAllister Stock camp. The new improved camp would retain the same capacity of one 12-person group camp and four 4-person camps.
- Expand McAllister Stock camp by building a cook area 100 feet from tent pads.
- Construct a new administrative camp that can accommodate stock and NPS staff only near Junction Stock camp.
- Construction would take approximately sixty-four days on a reoccurring schedule of eight days working and 6 days off (alternating 7 nights in a row in a camp and 7 nights out). The trail crew would camp at both McAllister Stock and Junction Stock during construction with most time spent at McAllister Stock.
- The work proposed is within the standard operating procedures, training, and experience of the NPS trail crew and there no special safety concerns for workers or visitors. The trail crew practices standard precautions and mitigations to reduce the spread of invasive plants, avoid or reduce impacts to sensitive species, protect water quality, and to reduce disruption to visitors' experience.

The new trail would be constructed to current “All Purpose” trail standards with a 24” wide trail tread and vegetation cleared along the corridor 8-feet wide by 10-feet high. During construction the trail crew would endeavor to remove as few trees as possible, but up to twenty trees ranging in size from 12-to-18 inches in diameter at breast height (DBH) may be removed.

A small puncheon trail bridge (10-foot span) (Figure 5) would be built onsite using primarily native material including trees smaller than 18 inches DBH and decking from the old Thunder Creek Bridge that washed out. The work would require various hand tools, power saws, and other small power tools such as hand drills. Trail relocation would take an eight-person trail crew approximately thirty-two days.

To address the loss of the previous group site at McAllister Hiker camp a new group site would be constructed ~500 feet east of the current McAllister Stock camp (Figure 6). This would include a single separate cook area at least 100 feet away from four dirt tent pads that can accommodate up to four 2-to- 3-person tents. The tent pads would be organized in two separate campsites so that the site could be used as two separate sites as well as for up to a 12-person group. This camp would have a new open air pit toilet with a [Wallowa toilet](#) box. Up to 400 feet of new access trails would be constructed with an 18-inch wide



Figure 5. An example of a recently built puncheon bridge on the Thunder Creek Trail.

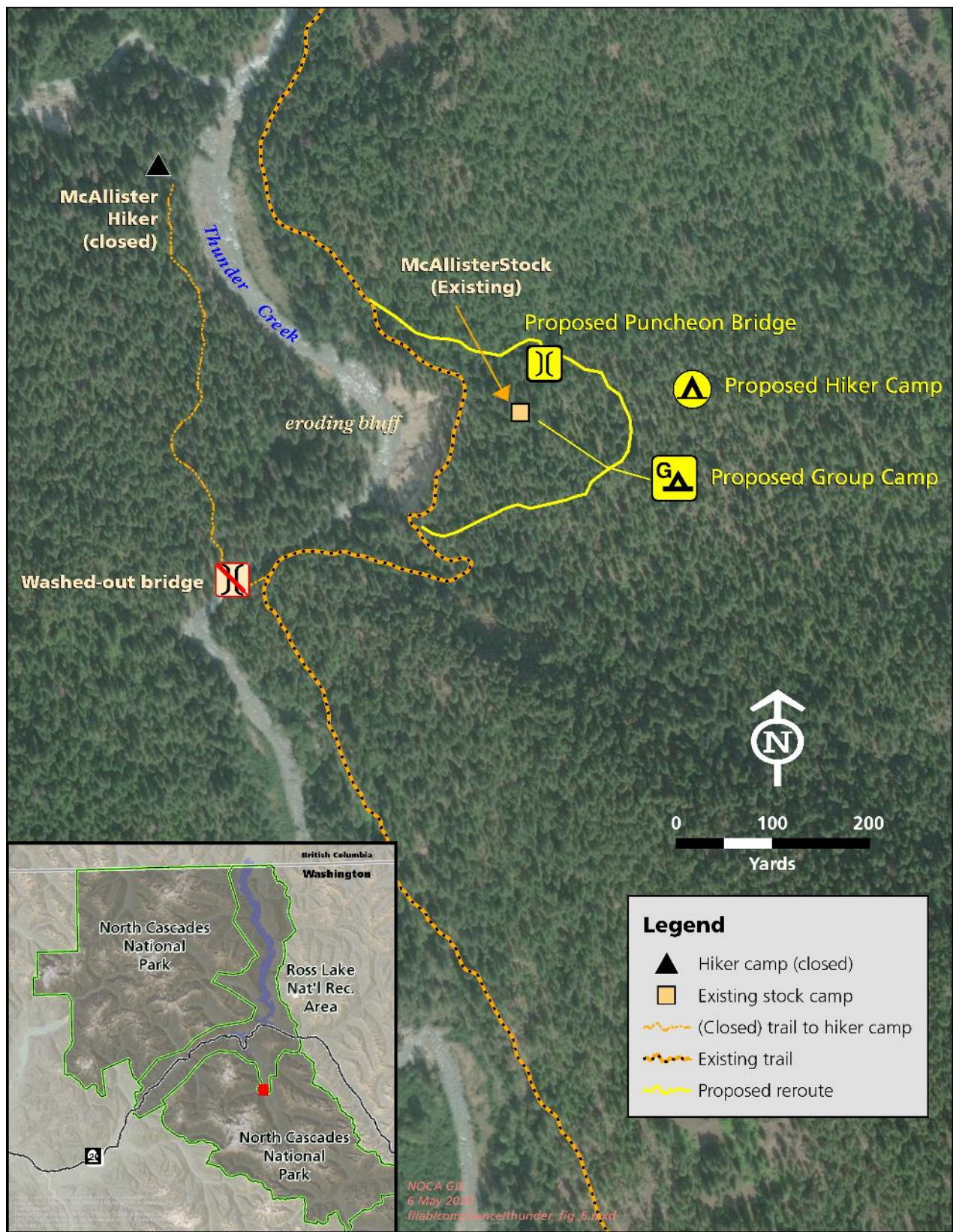


Figure 6. McAllister area trail and camp conditions and proposed relocations.

tread and vegetation clearing in a 4-foot wide by 8-foot high corridor. Construction of all the camp elements would remove up to fifteen standing dead trees ranging in size from 12-to-24 inches (DBH).

The current layout of McAllister stock camp has a cook area/fire ring so close to the tent pads that the risk of bear human conflict is increased. To reduce this risk the NPS proposes to rehabilitate the existing cook area and build a new cook area located ~100 feet to the west of the current camp. To provide NPS staff space to camp that will not conflict with public use, the NPS would construct a new administrative camp east-southeast of Junction Stock camp (Figure 7). This administrative camp is intended for NPS staff use only. This new camp would have up to four dirt tent pads, a cook area, a new Wallowa toilet, two hitch rails, a metal tool storage box (moved from Junction Stock camp), and up to 400 feet of access trails (the portion to the hitch rails would be cleared for the wider standard for stock access and the hiker camp standard above for human only access). Construction of all the camp elements would remove up to ten trees ranging in size from 12 to 18 inches DBH.

Construction of the camps would take an eight-person trail crew approximately thirty-two days and require various hand tools, power saws, and other small power tools such as hand drills. See the minimum requirements analysis (MRA) in Appendix A for an explanation of prohibited uses in the designated wilderness and when those uses can be relaxed following the proper analysis. The dimensions of the tent pads will be approximately 8-feet by 10-feet and the cook areas up to 20-feet by 24-feet. Tent pads would be elevated so that they are clearly delineated for use as a tent pad using logs or rocks as cribbing for ~40 cubic feet of fill. The fill would be leftover mineral soil from trail construction. All new camps would have signs installed that clearly show visitors where the cook areas, tent/sleeping areas, toilet, and water sources are. These signs would meet the current standards for the Stephen Mather Wilderness that have appropriate symbols routed and burned into 4X4 posts installed in the ground. In addition, each area would have a rock fire ring installed since campfires are allowed in all of the camps covered in this proposal. In order to facilitate proper food storage for visitors using the public camps bear wires would be installed at each of the new cook areas mentioned above. To the greatest extent possible the camp locations and design have been chosen to fit as many of the “preferred design features” (PDFs) listed in Appendix B. These PDFs are chosen to minimize resource impacts and conflicts as much as possible for camp developments. For example, the landforms and geologic hazards of potential camp areas are considered by reviewing the park’s geologic landform map (see Appendix C for proposed action camp area landform maps). In addition, campsites will be sited so that adjacent parties are not within sight of each other or of the main trail in order to provide solitude in the campsites. A conceptual layout of what a four-site hiker camp might look like based on many PDFs is shown in Figure 8.

Finally, there would be limited restoration of the abandoned trail near McAllister Stock camp and campsites at McAllister Hiker camp as access, staffing, and funding allow. Any structures, such as fire grates/rings, tent pad cribbing logs, and trail structures would be removed. Old tent pads would be scarified. Further restoration would rely on natural processes such as forest decay and regrowth. Abandoned trails would be scarified, “naturalized” by spreading logs, brush, and duff across the surface, and then planted with seeds or seedlings of native plants. The bridge abutments which include a mix of native rock, concrete, and wood would be demolished and removed. The washed-out bridge would be disassembled, and the stringers removed from the wilderness by helicopter (see MRA in Appendix A). This would require up to 3 flights to remove the bridge.

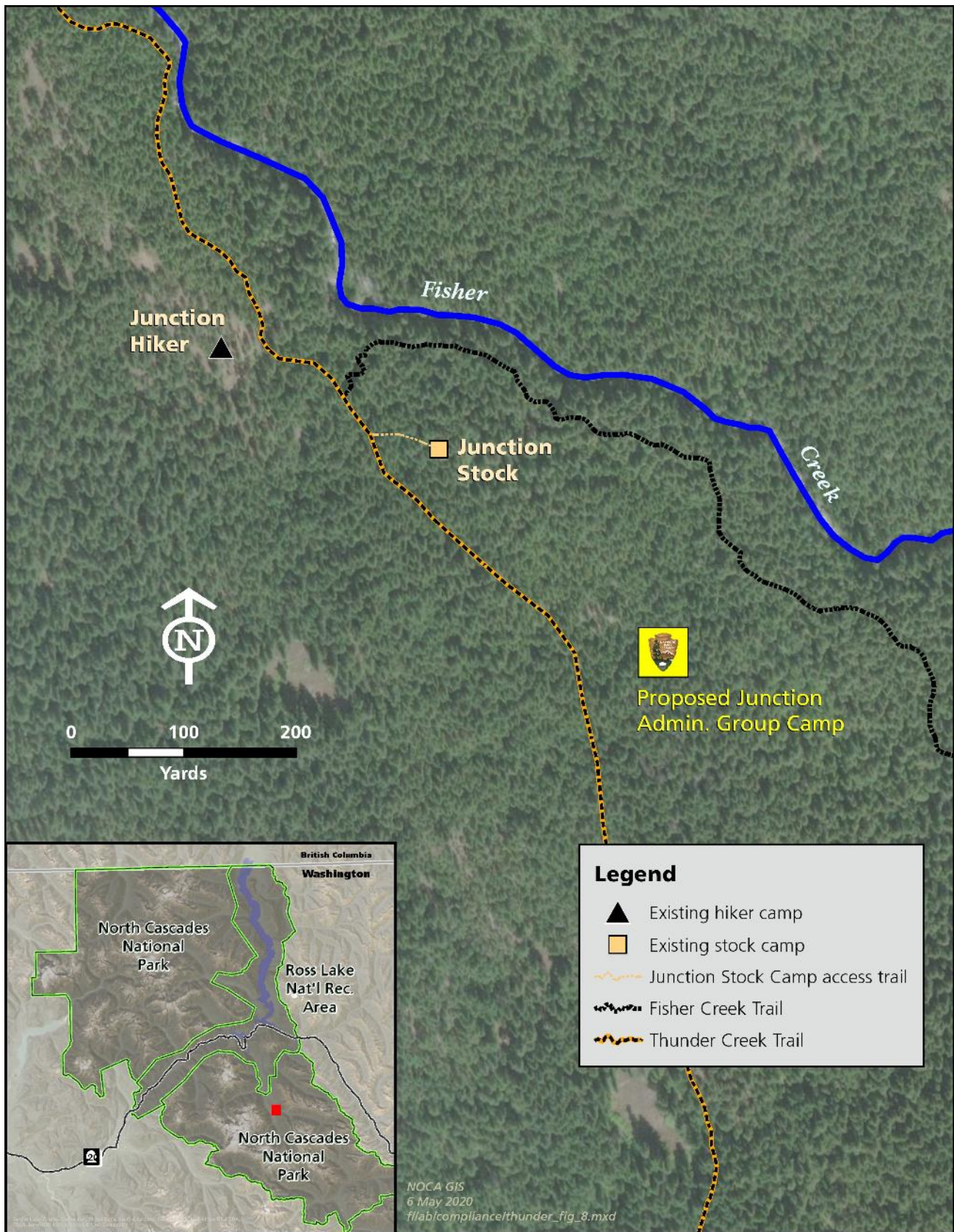


Figure 7. Vicinity of Junction Camps showing proposed new location for an administrative camp.

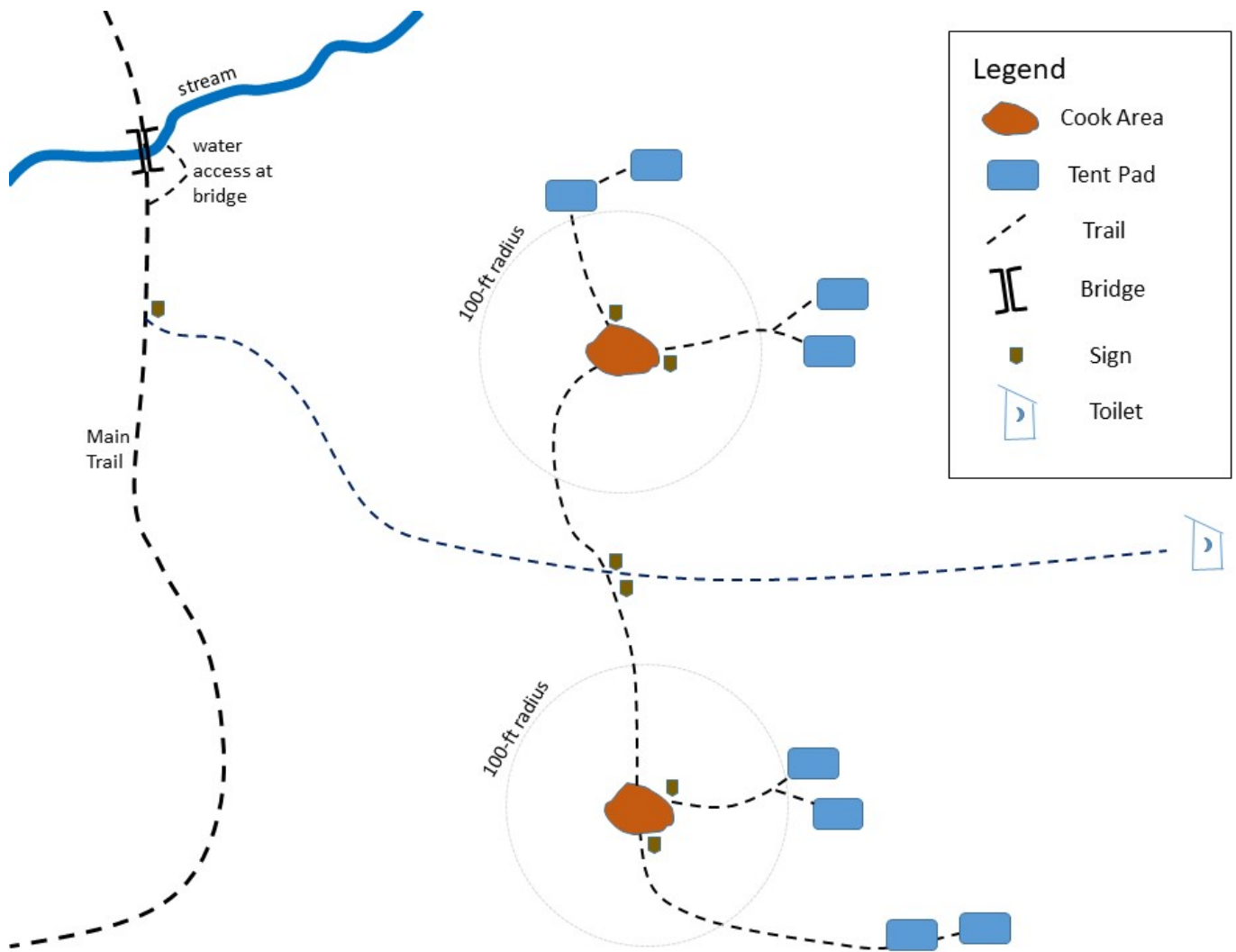


Figure 8. Diagram showing a conceptual layout of a four-site hiker camp. Shows a camp organized to meet PDFs from Appendix B including camp areas at least 100 feet away from water, sleeping areas at least 100 feet away from cook areas, separation between sites and trails to provide privacy and solitude, and the toilet at least 200 feet away from water. Trail junctions are signed to clearly indicate what a trail leads to.

2.2: ALTERNATIVE II: NO ACTION ALTERNATIVE

Under the No Action Alternative the Thunder Creek Trail would likely undergo incremental rerouting to respond to future erosion of the river bluff, likely by a combination of user-created social trail formation and perhaps some minor trail rerouting by the NPS in the future. McAllister Hiker camps would remain closed. Administrative use would continue as well as NPS staff sharing McAllister Stock and Junction Stock camps capacity with the public.

There would be limited restoration of the abandoned campsites as detailed above under Alternative I.

The washed-out bridge would be disassembled but left in the wilderness. As needed, decking or other small parts could be used in future maintenance projects in the area. Otherwise, what is not able to be feasibly hiked or packed out by stock would remain in the wilderness. The bridge stringer and any other large parts would be winched from the river bar into the adjacent forest out of sight of the trail. The bridge abutments, which are fixed in place and include a mix of native rock, concrete, and wood, would be left in place.

2.3: ALTERNATIVES CONSIDERED BUT DISMISSED

2.3.1 Re-Open McAllister Hiker Camp

The alternative of re-opening the existing McAllister Hiker camp and reinstalling the washed-out bridge that spanned Thunder Creek was considered but dismissed from detailed analysis. The primary reason for dismissal is that re-opening as a designated campsite would necessitate felling more than thirty hazard trees, many which are large diameter mature trees, which was deemed too great of an environmental impact. In addition, this camp is located in suitable northern spotted owl habitat and felling suitable nest trees would have created unacceptable impacts. Dismissing this option has the added benefit that there is no longer a need for a bridge across Thunder Creek thereby removing an installation in designated wilderness and reducing maintenance needs and potential for damage from future floods.

2.3.2 Other Locations Considered

Several other locations to replace and redistribute the camp capacity of McAllister Hiker Camps were considered but dismissed:

- A potential new location was identified just north of and across Fisher Creek from Tricouni camp. This location was dismissed because it was located in excellent suitable nesting habitat for northern spotted owl.
- The option was discussed to replace the capacity of McAllister Hiker camps by adding to existing camps such as Neve, McAllister Stock, Tricouni, and Junction Camps. Alternatives with various combinations of these were dismissed after the proposed action site was identified. It is challenging to find a site that meets as many PDFs as possible and the proposed action site meets some of the most critical. Expanding the footprint at several different locations introduces a higher level of uncertainty as to what the environmental impacts would be. Additionally, the location of McAllister camps along the trail provides a desirable distance for many people (~7 miles) for a first day of backpacking up the Thunder Creek trail.

2.3.3 Capacity Changes

While there would be a small increase in capacity in the proposed action with the construction of an administrative camp near Junction Stock, addressing changes in capacity (either increases or decreases) in lower Thunder Creek was dismissed because this is beyond the scope of this particular review. Addressing overnight capacity beyond the site-specific level is a larger question that needs to be addressed systematically across the Stephen Mather Wilderness. The NPS plans to take this up in the next few years in a comprehensive wilderness stewardship plan.

2.3.4 Project Work Solely with Non-motorized Tools

Removal of the washed-out bridge debris was considered with stock animals, but the steel I-beams (50-foot long and 2,300-pounds) are too large to be removed intact. The prospect of cutting up the I-beams by hand so that stock may transport them out would be an onerous, extremely time-consuming task that is considered unfeasible due to risks of repetitive stress injury to workers. It may be possible to cut up the I-beams with motorized tools for stock removal, but this would result in long durations of motorized noise in the wilderness, more noise than would be produced by solely using a helicopter for removal.

Use of non-motorized tools only was considered and dismissed from detailed analysis in this EA, but it is considered in more detail in the MRA (Appendix A). While many construction tasks outlined in the proposed action could be accomplished without motorized tools, when the project is considered on balance with all the other trail maintenance needs in the wilderness, power tools are deemed to be the minimum tool for use in designated wilderness. Chainsaw and motorized tool use for the project work helps a limited number of trail crew members to keep all trails and designated camps in the Park Complex up to established standards. Not keeping trails to maintenance standards results in numerous short and long-term impacts to wilderness character that the NPS considers unacceptable. See Appendix A for more details.

2.4: CONCURRENT PROJECTS THAT MAY CAUSE CUMULATIVE IMPACTS

There are several other proposed and planned operational activities in the area that could add direct or indirect impacts on to those of the alternatives. These are addressed in the next chapter.

Depending on the timing of this work in both or either of the 2020 and 2021 summer seasons the NPS trail crew will spend approximately 2 weeks in the lower Thunder Creek valley doing routine trail and camp maintenance with the same tools as proposed in Alternative I. Activities include clearing downed trees and brush, felling hazard trees, cleaning drainage structures, and repairing trail tread and trail structures such as small bridges, as needed.

- The NPS trail crew plans to build two turnpikes in muddy areas between Thunder Basin Stock and Thunder Basin Hiker camps in August and/or September 2020. This area is approximately 7 miles up the valley from Junction camps.
- If the helicopter work in Alternative I occurs in late summer or early fall it may coincide in location and timing with the following helicopter flights:
 - NPS flights to Skagit Queen Creek valley to install a bate gate at the portal of an old mine adit may occur in September 2020.

- NPS flights to service the radio repeater on the top of Ruby Mountain. Nothing specific is planned at this time but this repeater has needed frequent service in the last few years.
- Natural Resource Conservation Service flights up Thunder Creek valley to service SNOTEL monitoring stations. Fall flights often occur in late September.

Chapter 3 – Affected Environment and Environmental Consequences

3.0: Issues Dismissed from Detailed Analysis

3.0.1: *Environmental Justice and Indian Trust Resources*

No potential impacts related to tribal trust resources or communities identified as low-income or minority populations as identified in Executive Order 12898 were identified during internal or external scoping for the project. Therefore these topics are dismissed from detailed analysis.

3.0.2: *Vegetation*

The detailed analysis of impacts to native vegetation was dismissed because the area proposed to be cleared is roughly equivalent to the abandoned trails and campsites that would be restored. There were no significant concerns expressed during internal or external scoping about sensitive plant species or overall habitat value for the area that would be affected by the proposed trail reroute and new camp locations. Relative impacts related to hazard tree abatement are noted below in the analysis of the natural quality of wilderness character.

3.0.3: *Invasive Non-native Plants*

Introduction of invasive non-native plant species is always a concern when there is ground-breaking work in the Park Complex. The trail crew has standard operating procedures to limit the spread of invasive plants and these standard mitigation measures would be in place for any action the NPS takes. The most important mitigation measures are that all equipment including boots should be cleaned and free of weed seeds and propagules to reduce weed infestations and no fill in the form of gravel should be added to the site from sources outside of the Park Complex. With these measures there are no potentially significant impacts and the issue can be dismissed.

3.0.4: *Water Quality*

Construction of the new trails, puncheon bridge, and campsites could generate potential impacts to water quality. During rain events bare soil would be susceptible to erosion and sediment transport to nearby streams, increasing the turbidity of the streams. Such turbidity can be detrimental to aquatic life. However, given the local topography, distance to sensitive aquatic habitat, and preventative work practices the impacts are anticipated to be minimal.

3.1: Federally Threatened Species: Northern Spotted Owl

The Thunder Creek drainage lies in a late-successional coniferous forest dominated by Douglas-fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), and western hemlock (*Tsuga heterophylla*) with the occasional co-subdominance of western white pine (*Pinus monticola*) and lodgepole pine (*Pinus contorta*) in drier sites. Forest stands exhibit a complex structure with multi-storied layers of live, dead, and dying trees, as well as many fallen trees. Some standing dead and fallen trees are quite large and all classes of decay are present. Many snags display bird, insect, and mammal activity, including pileated woodpecker

holes, beetle galleries, and snags whose bases are shredded by bears and other mammals. Live standing trees in some parts of the drainage exceed 120 feet in height and 75 inches in diameter at breast height, with isolated trees estimated to be in excess of 500 years old. These stand characteristics provide high-quality habitat for several mammal and bird species including northern spotted owl (NSO).

Contrarily, habitat within the proposed action areas display low-quality features for NSO nesting due to a low percentage of canopy closure, scattered trees with larger openings on the forest floor, limited vertical structure, minimal large-sized fallen trees, and trees that are shorter in height and smaller in diameter that show few signs of deformities needed for NSO nesting. Overall, habitat within the action areas is inconsistent with the majority of low elevation habitat within the drainage, at least in part due to a notably drier micro-environment possibly resulting in less productive and complex forest stands. Consequently, habitat within the proposed action areas may be more suitable, at best, for temporary dispersal of recently fledged NSOs as they seek to establish new territories of their own. Connectivity to more suitable spotted owl nesting habitat is patchily distributed in the drainage, largely due to natural topographical variation. At best, both of these project areas are characterized as marginal for spotted owl dispersal habitat. The habitat in the proposed action areas was surveyed/assessed during a site visit in August 2019 by US Fish and Wildlife Service (USFWS) and NPS staff at both the McAllister and Junction proposed camp areas.

3.1.1: Environmental Consequences Alternative I: Proposed Action

Locations for the proposed camps were chosen to minimize overlap with good NSO habitat. Construction of the camps and trail reroute would cause short-term increases in noise and disturbance in the immediate project area. However, since the habitat is considered limited for NSO nesting and marginal for dispersal habitat, and to date there are no known NSO activity centers or nests located in the vicinity, coupled with the infiltration of barred owl activity in the drainage, the project is unlikely to affect NSOs. Subsequent human use of the area would not cause significant changes in current amounts of use or disturbance, as the proposed action areas already experience moderate human and stock use.

Use of power tools and helicopter flights may impact individuals if in the vicinity of the activity. This is unlikely, but the trail crew doing the work would be cognizant NSOs may be around and if necessary, employ conservation measures outlined in the Biological Assessment for this project (Appendix D).

Cumulative impacts

The projects listed above are anticipated to contribute to minimal cumulative impacts to NSO because 1) there are no known NSO activity centers in the vicinity of the project area; 2) if there were activity centers in the area, helicopters will be flying over at an altitude that would not disturb nesting NSO.

3.1.2: Environmental Consequences Alternative II: No Action Alternative

The no action alternative would reduce the number of people camping in the McAllister Camps vicinity but since it is such marginal habitat it would likely have no discernable impacts or benefits to northern spotted owl.

Cumulative impacts

There would be no discernable cumulative impacts from the concurrent projects listed above.

3.2: Archeological Resources

The upper Skagit River Valley, including its tributary Thunder Creek, has been used by humans for at least 9,000 years and therefore is expected to harbor archeological resources from pre-historic times to early 20th

century mining activities. Ground-breaking activities in the proposed action triggered the need to conduct an archeological survey. National Park Service archeologists conducted background research in the Washington Information System for Architectural and Archeological Records Data (WISAARD) and NPS archives and found that few existing identification efforts had occurred prior to this survey. A new inventory was implemented which was comprised of pedestrian and subsurface survey with seventy shovel test pits excavated within the Area of Potential Effect (APE). These efforts resulted in the identification of one new archeological site recorded as FS-343. For the purposes of this project, this archeological site will be treated as if it is eligible for listing on the National Register of Historic Places. Consultation through the National Historic Preservation Act Section 106 process with the Washington state Department of Archaeology and Historic Preservation, the Upper Skagit Indian Tribe, Sauk-Suiattle Indian Tribe, and the Swinomish Indian Tribal Community did not reveal additional archeological sites or historic properties with religious or cultural significance potentially affected by the proposed action.

3.2.1: Environmental Consequences Alternative I: Proposed Action

Following the identification of site FS-343, archeologists were able to design the layout of the camp to avoid the site as much as possible. However, due to the restrictions of the local geography, there is not as much separation of the site and campground as is desired. There is still a chance that the site may be incidentally damaged due to use and maintenance of the campground.

As a mitigation for the potential damage to the site, NPS archeologists agreed with Department of Archaeology and Historic Preservation and the associated tribes to regularly monitor the conditions of site FS-343. If damage is recorded at the site in future years additional mitigation measures may need to be taken in order to keep the site in good condition. With these mitigations in place consulting parties agreed that the implementation of this project would result in a no adverse effect to historic properties. If unidentified cultural resources are encountered during the implementation of the project, NOCA cultural resources staff should be notified immediately and all work in the proximate area should be halted until the resources can be evaluated by a professional, in consultation with the DAHP and the associated tribes.

Cumulative impacts

There would be no discernable cumulative impacts from the concurrent projects listed above.

3.2.2: Environmental Consequences Alternative II: No Action Alternative

If new campgrounds are not built in the Thunder drainage, site FS-343 would remain off trail away from any park facilities with no draw for park visitors or staff to be in their vicinity. This alternative would result in a no historic properties affected.

Cumulative impacts

There would be no discernable cumulative impacts from the concurrent projects listed above.

3.3: Wilderness Character

The Stephen Mather Wilderness was designated in 1988 and includes the proposed project area. The Thunder Creek Trail, McAllister, McAllister Stock, Tricouni, Junction, and Junction Stock all existed prior to wilderness designation and are identified as established camps in the Park Complex's 1989 Wilderness Management Plan. The system of maintained trails and designated camping by permit are designed to preserve wilderness character by containing and concentrating recreational use to specific areas and prevent overcrowding. Further, overnight visitors are encouraged to practice [Leave No Trace](#) principles to assume personal responsibility for preserving wilderness character in these settings.

The analysis below is organized by qualities of wilderness character. Preserving wilderness character is identified as the central mandate of the Wilderness Act of 1964 (Public Law 88-577). Based on language from the law, five qualities are identified that include untrammeled, undeveloped, natural, outstanding opportunities for solitude and primitive and unconfined recreation, and other features of value. Outstanding opportunities is broken down into three groups 1) opportunities for solitude, 2) opportunities for primitive recreation, and 3) opportunities for unconfined recreation. In the Stephen Mather Wilderness historic and prehistoric resources are considered to contribute to the other features of value quality. For further explanation of the qualities see the NPS Wilderness Stewardship Division [webpage](#) on wilderness character.

Section 4(c) of the Wilderness Act states that certain uses are prohibited "except as necessary to meet the minimum requirements for the administration of the area for the purpose of this Act...". Prohibited uses include motor vehicles, motorized equipment, landing of aircraft, mechanical transport, structures, installations, and others. A minimum requirements analysis (MRA) was prepared to consider and account for tangible effects to wilderness character from various alternatives (Appendix A). Two of those alternatives are analyzed in this EA. The results of that analysis are synthesized in the sections below. For more information on Interagency standards for MRAs see the [Minimum Requirements Decision Guide](#) maintained by the [Arthur Carhart National Wilderness Training Center](#).

The only action common to both alternatives is that the NPS will not replace the bridge that provided access from the main Thunder Creek Trail to McAllister Hiker camp. While the bridge provided necessary access to the camp it also provided convenient access for mountaineers accessing the northwest corner of the Klawatti crosscountry zone. In the absence of this bridge it is possible to ford Thunder Creek in this area under low flow conditions by the most experienced and intrepid hikers/mountaineers. There may also be natural crossings available at times on fallen trees or log jams that span Thunder Creek in the area. Translated to effects on wilderness character, the loss of the bridge simultaneously is a negative effect on opportunities for primitive recreation to this area while also a positive effect on opportunities for unconfined recreation. Absence of the bridge will also likely increase opportunities for solitude on the west side of Thunder Creek in this area since fewer people are likely to go there. In addition removal of the bridge is a long-term positive effect on the undeveloped quality as the bridge is a structure.

3.3.1: Environmental Consequences Alternative I: Proposed Action

Untrammeled

No components of the action are considered to notably manipulate biophysical processes and result in trammeling actions.

Undeveloped

For the proposed McAllister Hiker there would be no net change in camp facilities since the proposal is a relocation of an existing camp. The addition of the McAllister Stock cook area is a slight expansion of the camp and therefore a slight negative effect on this quality. The Junction administrative camp is a new development and therefore a negative long-term effect to the undeveloped quality. Helicopter and chainsaw use would result in short-term effects to the undeveloped quality. The presence of trail crews and other NPS staff has no effect on this quality.

Natural

For the proposed McAllister Hiker camp the new layout to keep separation between cooking and sleeping areas and installation of bear wires should reduce human-wildlife conflicts improving the natural quality for the long-term. In addition the new location out of forest with larger trees should lower the impacts to the natural quality in relation to the previous camp location because of a lessened long-term need to fell diseased or dead hazard trees. The new McAllister Stock cook area is proposed to increase the separation between cooking and sleeping areas and have installation of a bear wire for a small long-term positive effect. However, the Junction administrative camp is a new development and therefore would have some long-term effects to the natural quality in the local area by creating a space occupied by people which may displace some wildlife and create an area that is no longer in a wholly natural condition. Helicopter and chainsaw use would result in short-term effects to the natural soundscape primarily due to noise disturbance to wildlife that could be in the area. Presence of trail crews and other NPS staff would have a minimal effect on this quality.

Outstanding Opportunities for Solitude and Primitive and Unconfined Type of Recreation

The sight and sound of helicopters, chainsaws, and any other motorized tools would have short-term negative effects on opportunities for solitude for any visitors in the area at the time of use. The I-beams would be rigged for helicopter longline transport before the helicopter arrived, thus the disturbance would be a few minutes during each turn while each I-beam was hooked up and the helicopter transits over wilderness. The helicopter would likely hover 200-300 feet above the river channel. This would be in clear sight of a portion of the Thunder Creek Trail. The noise from chainsaws and other small power tools would be intermittent over the approximately sixty-four days of construction of the trail reroute and camps. Chainsaws are usually only powered on for a few minutes at a time to make cuts for puncheon bridge parts and campsite components, cut down trees, and clear downed trees. Many days chainsaws would not be used, but on those days that they would be used their use is unlikely to exceed a few hours.

For the proposed McAllister camp there would be no net change in camp facilities since the proposal is a relocation of an existing camp. The Junction Administrative camp would be a new development and therefore would have some long-term effects on this quality. The effects on opportunities for solitude would likely be mixed. The presence of a new development could negatively impact solitude if visitors were to come across the camp or NPS staff camping there. However, by moving administrative use out of the existing camps this means that those camps would have fewer users at times and therefore provide increased opportunities for solitude for visitors camping there. Opportunities for primitive recreation would be improved by constructing the administrative camp, thereby creating more opportunities for camping visitors by moving trail crew and other administrative camping use out of the Junction Hiker and Stock camps.

While it is extremely difficult to quantify opportunities for solitude, the backcountry permit database for the Park Complex makes it possible to quantify available wilderness camping opportunities in the McAllister

and Junction areas with this alternative, which is an excellent representation of opportunities for primitive recreation. In 2017, before the bridge washed out, McAllister Hiker camp saw 401 permitted nights in the available sites (four 4-person sites and one 12-person site). In 2018 when the camp wasn't available the two closest camps saw notable increases in use (see Appendix E for annual permit data). McAllister Stock had an increase of 65 permitted nights and Tricouni had an increase of 55. 2019 saw similar increases. While there were increases at Neve and Junction Camps, given the distance from McAllister there is less confidence in assigning the increased use as demand for McAllister. Assuming similar demand for backcountry camps in future use (which is a safe assumption given overall overnight use from the database for 2018 and 2019) the proposed action would restore at least 280 permitted nights of visitor demand.

Construction of the Junction Administrative camp would free up camp space in both Junction Hiker and Stock Camps for stock groups and hiker groups. Large groups of up to 12 people often use the larger capacity stock camps. Under this alternative the NPS trail crew would spend a few nights per year at McAllister Stock camp as the trail is opened up in the early summer, but then they would move up to the Junction Admin camp to camp for one to two weeks to open the upper Thunder Creek and Fisher Creek Trails. Opening the trails refers to logging out trees that have fallen across the trail and in the camps and doing any clean up and repairs that are needed after the previous winter. In some years the camp may be needed for projects that take longer to accomplish such as bridge repairs or trail reroutes. This camp would also accommodate other NPS staff such as backcountry rangers and resources staff for approximately one week of nights each year. Thus, given the level of anticipated use this would make Junction Stock camp available for public use with maximum opportunity for public reservations for approximately three weeks of nights per year (See Appendix E for past administrative use data for Junction Stock and Hiker Camps).

Other Features of Value

The only known effects to cultural resources that contribute to this quality are outlined in section 3.2.1 above.

Summary of Effects to Wilderness Character

The five qualities of wilderness character may interact in direct and subtle ways that may complement or conflict with the others as do the effects discussed above. The overall effects by quality for both Alternatives I and II are considered together in Table 1.

Table 1. Table showing summary of short-term, long-term, positive, and negative effects from minimum requirements analysis for both alternatives I and II. Note that the numbers are only used to tally effects and do not represent magnitude or value.

Wilderness Character	Alternative I: Proposed		Alternative II: No Action	
	short-term	long-term	short-term	long-term
Untrammeled	0	0	0	0
Undeveloped	Power tool use (-1)	New camp areas (-2)	0	Removal of camp (+1)
	Helicopter use (-1)	Removal of bridge (+1)		Bridge remains (-1)
Natural	Power tool noise (-1),	PDF improvements (+2)	0	No McAllister Stock improvements (-1)
	Helicopter noise (-1)	New admin camp (-1)		Removal of camp (+1)
Solitude or Primitive and Unconfined Recreation	Power tool sight & sound (-1),	Junction Admin: Loss of solitude (-1),	0	Removal of McAllister Hiker: Solitude (+1),
	Helicopter sight & sound (-1)	Junction camps opportunities: Gain in solitude (+1)		Primitive Recreation (1-)
	Trail crew displaces camp space (-1)	Gain in wilderness camping (+1)		Admin sharing at Junction: Solitude (+1)
		Removal of bridge (+1)		Primitive Recreation (-1)
Unique / Other Features	0	Proximity to archeological site (-1)	0	0
Net Effect	-7	1	0	-1

Cumulative impacts

The only potential additional impacts from the concurrent projects from Section 2.4 would be to opportunities for solitude. The flyover of additional helicopters would add a few minutes of some distant motorized noise to the project area. Flights to Ruby Mountain are distant enough from the closest project area (McAllister) that they may not even be heard. Additional traffic on the trail and presence of the trail crew doing maintenance and building turnpikes in upper Thunder Creek will likely not be noticeable to most users of the trail. However, this maintenance work on the Thunder Creek Trail would prolong the period in which chainsaws are used and visitors would be subject to the sight and sound of them. There would be a similar cumulative impact on the undeveloped quality.

3.3.2: Environmental Consequences Alternative II: No Action Alternative

Untrammeled

No components of the action are considered to notably manipulate biophysical processes and result in trammeling actions.

Undeveloped

In this alternative the McAllister Hiker and Group Camps would not be replaced and the existing site would be restored. This would result in a long-term positive effect for the undeveloped quality since there would be

one less developed campground in the wilderness. Leaving the washed-out bridge in wilderness would continue to have a negative effect on the undeveloped quality for years to come because it is composed of steel stringers that would be a clear sign of human development.

Natural

This alternative would have a long-term positive effect on the natural quality because the abandoned McAllister Hiker camp would be restored and allowed to return to natural conditions. The close proximity of the cook area to sleeping areas and lack of a bear wire in McAllister Stock camp would continue to have a negative effect on human-wildlife conflict. Otherwise the other components would have no to minimal effects to the natural quality.

Outstanding Opportunities for Solitude and Primitive and Unconfined Type of Recreation

Restoring the closed McAllister Camps would have a long-term positive effect on opportunities for solitude by removing a sight associated with people and keeping this camp closed would result in less people allowed to camp in the area, increasing opportunities for solitude. However, this would have a long-term negative effect on opportunities for primitive recreation since it would mean the elimination of a camping opportunity in this area popular with backpackers. Refraining from constructing an administrative camp at Junction would also result in mixed effects. By limiting capacity, and thus the number of people in the area, this would continue to preserve opportunities for solitude. However, this would also continue to result in trail crew competing for camping space in Junction Stock camp with continued loss of opportunities for primitive recreation for the public.

While it is difficult to quantify opportunities for solitude that would be gained with this alternative, it is possible to quantify wilderness camping opportunities as in Alternative I. With regard to camps available for wilderness camping opportunities in this alternative, the 2018 and 2019 hiking seasons' data show a likely scenario for this situation for future years. Following the same rationale as in Alternative I, there would be a loss of ~280 permitted nights available for visitors in the vicinity of McAllister camps.

Cumulative impacts

The cumulative impacts as noted above for the proposed action would also apply to the No Action alternative.

Chapter 4 – Consultation and Coordination

4.1 LIST OF PERSONS AND AGENCIES CONSULTED

4.1.1 HISTORY OF PUBLIC INVOLVEMENT

The formal public scoping period for this EA began on April 2, 2020 and extended through May 1, 2020. Four comments were received from individuals and one from the North Cascades Conservation Council.

4.1.2 AGENCIES CONSULTED

Endangered Species Act Consultation

The Endangered Species Act of 1973, as amended (16 USC 1531 et seq.) requires all federal agencies to consult with the USFWS to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitat. The NPS began technical assistance with a USFW Biologist during a site visit with NPS staff to the proposed camps on August 5 and 6, 2019. Based on the analysis in this EA and BA, the National Park Service has determined that the proposed action is not likely to adversely affect federally threatened northern spotted owl within the project areas. The Biological Assessment prepared for this Plan/EA was submitted to USFWS on February 10, 2020 with a request for their review and concurrence with this determination.

Section 106 of the National Historic Preservation Act Consultation

Consultation was initiated with the Upper Skagit Indian Tribe, Sauk-Suiattle Indian Tribe, Swinomish Indian Tribal Community, and the Washington State Historic Preservation Officer (SHPO) on August 30, 2019. Because there were no existing surveys within the project area, the park also sent along a survey plan for comment. Per the request of the Upper Skagit Tribe, the park met with them in person on September 9th to further discuss the project and invited the tribe to accompany the park while field work was completed. The Sauk-Suiattle Tribe responded to park requesting a clarification in the Area of Potential Effect boundary, which was provided. After the completion of field work, the NPS staff spoke with the Tribes again to discuss two potential cultural resources in the project area. Following those discussions, the resources were recorded as an archeological site. The final report and National Historic Preservation Act Section 106 determination of effect was sent to the tribes and SHPO for comment on February 14, 2020.

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List of Appendices

See the separate documents for the following appendices.

Appendix A Minimum Requirements Analysis

Appendix B Preferred Design Features

Appendix C Proposed Action Landform Maps

Appendix D Biological Assessment

Appendix E Tabular Overnight Camp Use Data