



National Park Service
U.S. Department of the Interior

Glacier National Park
Waterton-Glacier International Peace Park
Montana

Lake McDonald Properties Management Plan

Environmental Assessment

January 2018



Garage Cabin at Wheeler Property (NPS photo, 2015)

This page intentionally left blank

Lake McDonald Properties Management Plan

Environmental Assessment

Summary

In the last decade, seven properties at Lake McDonald have come into park possession following expired leases or fulfillment of life estates, and are now the responsibility of the park. Most of the cabins and outbuildings associated with the properties are listed in the National Register of Historic Places. This plan/environmental assessment (EA) has been developed to explore and evaluate different preservation and management strategies for the properties. Due to limited funds for historic preservation and the number of historic properties now under park administration, it is likely that the structures will deteriorate at a rate that exceeds the park's ability to maintain them. Without maintenance, some of the buildings would likely need to be removed. This EA evaluates two alternatives. Under Alternative A, the park would continue to manage the buildings with limited funding, and management decisions would be made on an as needed basis to mitigate safety concerns. Alternative B is an adaptive approach that establishes a sequence of options for the management of each property. The options vary by property and may include historic leasing, park or concessioner use (both of which would include rehabilitation), stabilization to preserve properties not in use, or removal of buildings followed by site restoration.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet objectives of the proposal, 2) evaluates potential issues and impacts to park resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts. The following resource topics are analyzed in detail: Historic structures and districts; vegetation, soils, and wetlands; wildlife; and grizzly bears. All other resource topics were dismissed as the actions would have little to no effect to those resources. No significant effects are anticipated as a result of these actions. Public scoping was conducted to assist with the development of this document.

Public Comment

If you wish to comment on the EA, you may post comments online at <http://parkplanning@nps.gov/lake-mcdonaldproperties> or mail or hand deliver comments to: Superintendent, Attn: Lake McDonald Properties EA, Glacier National Park, P.O. Box 128, West Glacier, MT, 59936. This EA will be on public review for 30 days. Before including your address, phone number, e-mail address, or other personal identifying information in your comment, you should be aware that your entire comment – including your personal identifying information – may be made publicly available at any time. Although you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. Comments will not be accepted by fax, email, or in any other way than those specified above. Bulk comments in any format (hard copy or electronic) submitted on behalf of others will not be accepted.

Table of Contents

Purpose and Need	1
Introduction	1
Impact Topics Retained for Further Analysis	13
Impact Topics Dismissed from Further Analysis	13
Alternatives	22
Alternatives Carried Forward	22
Alternative A – No Action (Continue Current Management).....	22
Alternative B – Manage NPS Owned Properties at Lake McDonald Using an Adaptive Management Approach (Preferred)	22
Mitigation Measures	25
Alternatives Considered and Dismissed	27
Affected Environment and Environmental Consequences	29
Historic Structures and Districts	29
Vegetation, Soils, and Wetlands	36
Wildlife	42
Grizzly Bears	45
Compliance Requirements, Consultation, and Coordination	49
References	53

List of Figures and Tables

Figure 1: NPS Properties.....	3
Figure 2: Kelly Camp	7
Figure 3: Wheeler Camp.....	8
Figure 4: Greve’s Tourist Camp.....	9
Figure 5: Johnson-Graham Cabin	10
Figure 6: Grisley Cabin and Bunkhouse.....	10
Figure 7: Moberly House and Guest House	11
Figure 8: Fox-Henderson Cabin.....	11
Figure 9: Historic Districts and Property Locations	30
Figure 10: Proximate backcountry around Lake McDonald.....	47
Table 1: Properties’ Details.....	5
Table 2: Special Status Species.....	14
Table 3: Alternative B Ranked Options.....	25
Table 4: Estimates for Ground Disturbance and Restoration.....	39
Table 5: List of Preparers.....	52

PURPOSE AND NEED

The purpose of Glacier National Park is to:

- preserve and protect natural and cultural resources unimpaired for future generations (1916 Organic Act);
- provide opportunities to experience, understand, appreciate, and enjoy Glacier National Park consistent with the preservation of resources in a state of nature (1910 legislation establishing Glacier National Park); and
- celebrate the on-going peace, friendship, and goodwill among nations, recognizing the need for cooperation in a world of shared resources (1932 International Peace Park legislation).

The significance of Glacier National Park is explained relative to its natural and cultural heritage:

- Glacier's scenery dramatically illustrates an exceptionally long geological history and the many geological processes associated with mountain building and glaciation;
- Glacier offers relatively accessible, spectacular scenery and an increasingly rare primitive wilderness experience;
- Glacier is at the core of the "Crown of the Continent" ecosystem, one of the most ecologically intact areas remaining in the temperate regions of the world;
- Glacier's cultural resources chronicle the history of human activities (prehistoric people, Native Americans, early explorers, railroad development, and modern use and visitation) and show that people have long placed high value on the area's natural features; and
- Waterton-Glacier is the world's first international peace park.

INTRODUCTION

Glacier National Park is an approximately one million acre park in the Northern Rockies of northwestern Montana, along the United States-Canadian border. The park straddles the rugged mountains of the Continental Divide, and is at the center of the Crown of the Continent Ecosystem. The Crown of the Continent ecosystem encompasses almost 18 million acres of mountainous terrain between the southern regions of British Columbia and Alberta in Canada, and the Blackfoot River south of Montana's Scapegoat Wilderness. Together, Canada's Waterton Lakes National Park and Glacier National Park form Waterton-Glacier International Peace Park, the world's first international peace park. The parks are listed together as a World Heritage Site and separately as International Biosphere Reserves. Outstanding natural and cultural resources are found in both parks. Glacier National Park's primary mission is the preservation of natural and cultural resources, ensuring that current and future generations have the opportunity to experience, enjoy, and understand the legacy of Waterton-Glacier International Peace Park.

In recent years, Glacier National Park has come into possession of seven once privately-owned properties, including approximately 24 buildings and outbuildings, at Lake McDonald. Most of the cabins and outbuildings are listed in the National Register of Historic Places (National Register of Historic Places), and many are in need of repair. A strategy is needed to guide the management of the properties and to acquire funds for their preservation before the buildings deteriorate to the point where demolition and removal are the only available options. Therefore, the park is proposing an adaptive strategy that includes a sequence of management options for each property. The options vary by property and include historic leasing, park administrative or concessioner use, stabilization, or removing the buildings and restoring the site to natural conditions.

The purpose of this environmental assessment (EA) is to examine alternatives and environmental impacts associated with the proposal. This EA was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, Council on Environmental Quality regulations for the implementation of NEPA (40 CFR [Code of Federal Regulations] § 1500-1508), DOI regulations for the implementation of NEPA, (43 CFR §46), and the NPS Director's Order (DO)-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-Making*).

BACKGROUND

The U.S. Congress established Glacier National Park in 1910. At the time of the park's designation, there were approximately 22,000 privately owned acres inside the park boundary. These areas were settled under authorities of the 1862 Homestead Act, which allowed claims of 160-acre parcels. The park's enabling legislation inhibited any future land claims, but did not affect any "valid existing claim," allowing individuals to retain their property inside the park boundary. The private parcels included lakefront properties on Lake McDonald that were originally part of homesteads, but some were soon used to provide private tourist accommodations, since the area had an immediate appeal for tourism,

while others were subdivided and sold as private family camps. Over time, the National Park Service has purchased or acquired through land exchanges and bequest a number of privately-owned properties within the park boundary. The purchase terms for some of the Lake McDonald properties included life estates or reserved use agreements, under which a private landowner retains use of a property until the life estate or reserved use period expires.

This EA evaluates a proposal for the future preservation, management, and administration of NPS-owned lakeshore properties at Lake McDonald except for three NPS-owned Lake McDonald properties—the Neitzling (Ewing) Cabin, Hunter-Marken Cabin, and RE McDonnell Cabin. One of these cabins is used to house the artist in residence and the other two are part of two current concession contracts. Therefore no changes in use or administration are proposed for these properties, and they are not addressed further in this EA.

Seven other Lake McDonald properties acquired by the NPS in the last decade do not yet have a designated or approved use, nor is a plan in place for the preservation of historically significant resources associated with the properties. The properties include the Wheeler Camp, Greve's Tourist Camp, Johnson-Graham Cabin, Moberly House and Guest Cabin, Fox-Henderson Cabin, a portion of Kelly's Camp, and the Grisley Cabin and bunkhouse (Figure 1 and Table 1).

The properties considered in this EA total approximately seven acres of land and are located along the northern and southern shores of Lake McDonald (Figure 1). Twenty-four cabins and outbuildings, including bunkhouses, outhouses, sheds, and privies, are associated with the seven properties. These structures represent only a portion of the lakeshore infrastructure—about 200 buildings on Lake McDonald remain in private ownership, and about another 130 buildings are under park ownership.

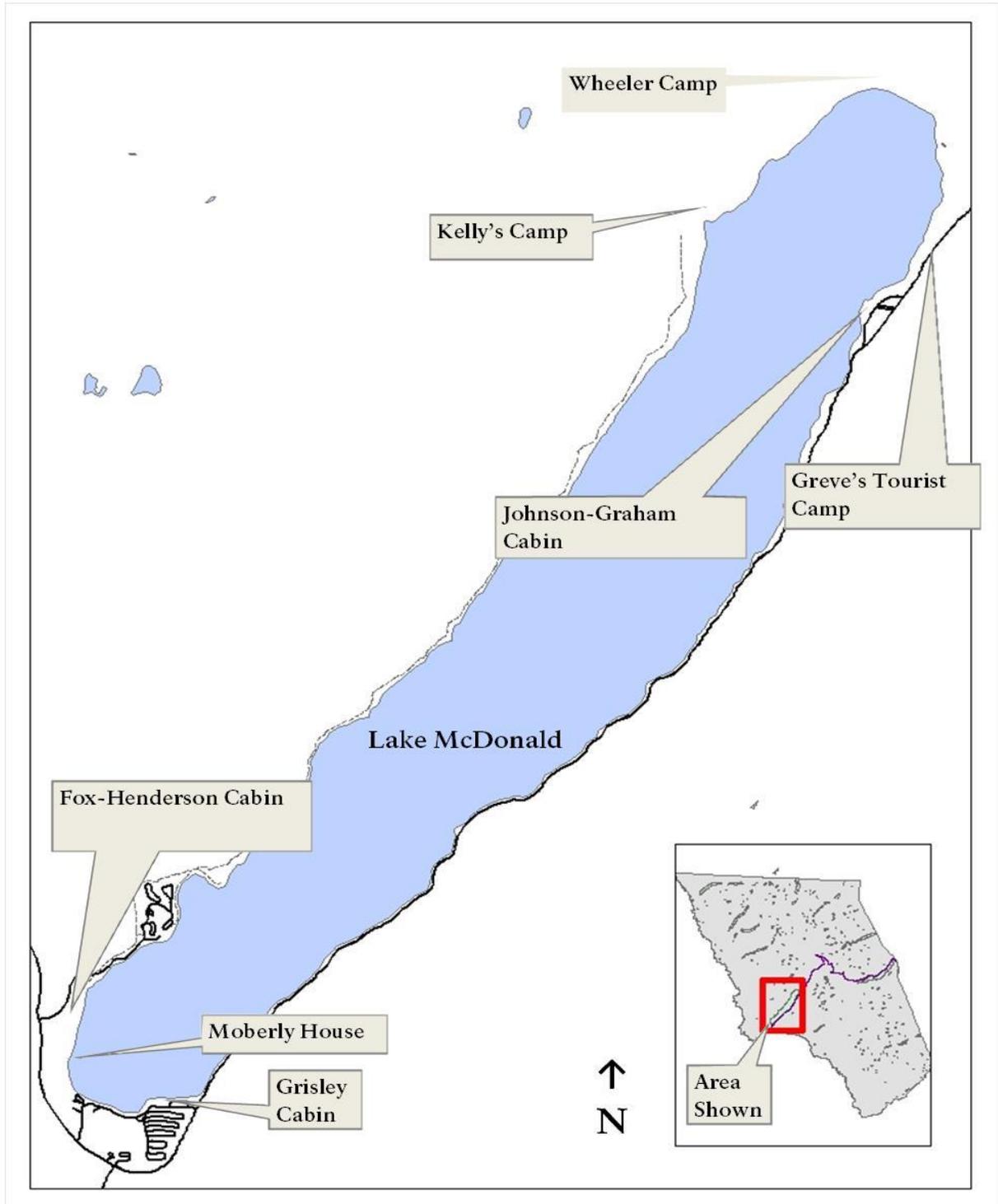


Figure 1 – General Locations of NPS properties.

Lake McDonald Properties Management Plan / Environmental Assessment

Fourteen of the cabins and seven of the outbuildings associated with the properties considered in this EA are listed in the National Register of Historic Places, and the properties contribute to five historic districts in the Lake McDonald area (Table 1). Wheeler Camp, Greve's Tourist Camp, Johnson-Graham Cabin, Moberly House, Moberly Guest Cabin, Fox-Henderson Cabin, and Kelly's Camp are listed in the National Register of Historic Places (Ravage 2006). Listing in the National Register of Historic Places affords official recognition of a property's significance due to its historical, architectural, or archeological attributes. The Grisley property has not been evaluated for listing in the National Register of Historic Places, but is considered eligible until it can be evaluated. The Kelly's Camp privies are not NRHP eligible.

The cabins at Lake McDonald represent part of Glacier National Park's heritage and history and reflect a variety of architectural and development patterns for lakeside cabins. The cabins are all currently vacant. Condition reports have been completed for all the properties. Conditions of the cabins and structures vary. Some are in fair condition in need of repair and rehabilitation; others remain in good condition with only minor rehabilitation needed. Reports date back to 2012, and conditions at some of the properties have continued to deteriorate, while others properties have had some stabilization and or repairs, such as emergency repairs at the Greve's Tourist Camp after trees blew onto buildings during winter storms in early 2015. Photographs of some of the structures are presented in Figures 2 – 8, below. Please see "Affected Environment, Historic Structures and Districts" for a detailed discussion on the history and significance of each individual property.

Lake McDonald Properties Management Plan / Environmental Assessment

Table 1 – Properties and historic districts, acreages, and National Register of Historic Places status of the properties considered in this EA. Tract numbers are included, along with dates the associated structures were built and acquired by the NPS, and the general condition of each. For more information about the historic districts, see “Affected Environment and Environmental Consequences, Historic Structures and Districts”.

Property/Historic District	NPS-owned acreage	NPS-owned Buildings and Structures	National Register of Historic Places Status	Date Built	Date Acquired by NPS
Kelly’s Camp Historic District	1 acre	Big House	Listed	1910	1976
		Cabin 1	Listed	1920-1925	1988
		Camp Shop	Listed	1925-1930	1988
		Privies	Not eligible	Unknown	1988
Wheeler Camp Historic District (life estate expired in 2014)	1.5 acres	Burt and Lulu Wheeler Cabin	Listed	1942	1947
		Garage Cabin	Listed	1950	1947
		Sleep Cabin	Listed	1930	1947
		Boys Cabin	Listed	1950	1947
		Generator House	Listed	1925	1947
		Boat House	Listed	1950	1947
Greve’s Tourist Camp Historic District (life estate expired in 1993)	1.5 acres	Dora Crump Cabin	Listed	1910	1977
		Cabin #4	Listed	1931	1977
		Cabin #7	Listed	1938	1977
		Cabin #8	Listed	1938	1977
		Bathhouse	Listed	1939	1977
		Woodshed	Listed	1910	1977
		Generator Shed	Listed	1935	1977
		Outhouse	Listed	1940	1977

Lake McDonald Properties Management Plan / Environmental Assessment

Property/Historic District	NPS – owned acreage	NPS- owned Buildings and Structures	National Register of Historic Places Status	Date Built	Date Acquired by NPS
Johnson-Graham Cabin Part of Glacier Park Villas Home Sites Historic District (reserved use agreement expired in 2002)	0.4 acre	Johnson-Graham Cabin	Listed	1925	1975-Reserved Use agreement
Grisley Property (life estate expired in 2012)	Approx. 1-2 acres	Grisley Cabin	Un-evaluated; considered eligible until can be evaluated	After 1955	1975
		Grisley Bunkhouse			1975
Moberly Property (life estate expired in 1995). Part of Apgar Glacier Park Cottage Sites Historic District	1.12 acres	Moberly House	Listed	1962	1970
		Guest Cabin	Listed	1925 (remodel 1961)	1970
Fox-Henderson Property (life estate expired in 2014). Part of Apgar Glacier Park Cottage Sites Historic District	0.15 acre	Fox-Henderson Cabin	Listed	1953	1979

Lake McDonald Properties Management Plan / Environmental Assessment

Figure 2 – Kelly's Camp. Kelly's Big House and Cabin 1 (upper left and right, NPS photos, 2015). Camp Shop (lower left NPS photo, 2012). Privies are not shown.





Figure 3—Clockwise: Wheeler Camp. Burt and Lulu Wheeler Cabin, Sleep Cabin, Generator House, Garage Cabin (NPS photos 2014). (Not all of the structures are pictured).



Figure 4 –Greve’s Tourist Camp cabins and other buildings. (Not all structures are pictured) (NPS photos, 2015)



Figure 5 – Johnson-Graham Cabin.
NPS photos, 2011)



Figure 6 – Top: Grisley Cabin and
Bunkhouse. (NPS photos, 2012).



Figure 7- Moberly House and Guest House (NPS Photos, 2015)



Figure 8 – Fox-Henderson Cabin (NPS photos, 2015)

The park's historic resources, numbering 397 historic buildings and structures and two cultural landscapes as of 2014, require regular maintenance and repairs. The park currently has a backlog of approximately \$27 million in deferred maintenance, including work needed on structures essential to park operations. The backlog is primarily due to a shortage of funding for both cyclical maintenance and specific rehabilitation and restoration projects. Although the park has taken measures to forestall severe deterioration and address safety issues, the structures associated with the Lake McDonald properties are deteriorating due to lack of repairs and regular maintenance. Continued structural deterioration could pose health and safety hazards to people, and also present risks to wildlife. Incidents of vandalism have occurred, jeopardizing property and human safety. According to park wildlife staff, wildlife, such as skunks and mountain lions, have sought shelter in areas such as crawl spaces and under porches at some of the structures, and bats have roosted in attics, increasing the potential for human-wildlife conflicts. Deteriorating buildings can also negatively affect visual resources for both adjacent land owners and park visitors.

In order to manage historically significant, National Register of Historic Places-listed properties under NPS ownership in the Lake McDonald area, the park needs a plan that will 1) provide a strategy to enable the preservation and maintenance of the character-defining elements that qualify the properties for listing in the National Register of Historic Places, and 2) establish guidance on the future use of the properties. The plan must identify which structures to preserve, identify a strategy to attain funds towards their preservation, and what conditions would warrant their removal.

Impact Topics Retained for Further Analysis

The following impact topics are carried forward for further analysis in this EA:

- Historic Structures and Districts
- Vegetation, Soils, and Wetlands
- Wildlife
- Grizzly Bears (federally listed as threatened under the Endangered Species Act [ESA])

Impact Topics Dismissed from Further Analysis

The following impact topics are not analyzed because they would not be meaningfully affected or are not located in the project area. The rationale for the dismissal of topics is discussed below.

Archeology and Ethnographic Resources

Overall, the area of potential effect has unknown archeological resources. No subsurface testing or surveys were conducted. Given the topography, prehistoric and historic uses of the project area, intact subsurface deposits are likely present. Additional site-specific analysis would be conducted when property treatments are identified, project areas would be surveyed prior to ground disturbing activities, construction activities would be monitored by an archeologist. If previous undiscovered archeological resources are identified, ground disturbing activities would cease, archeological resources would be left undisturbed and protected until consultation has been completed. The park's cultural resources staff would also be notified and additional consultation with the State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officers (THPOs) would occur in accordance with federal law, regulation, and NPS policy. Therefore, with the actions mentioned above (future survey and/or monitoring) and the mitigation measures that are identified later in the plan, potential adverse impacts to archaeological resources would be avoided, minimized or mitigated.

The proposed action is not expected to impact ethnographic resources. The Blackfoot Tribe and the Confederated Salish and Kootenai Tribes were notified of the proposal on July 23, 2010, during scoping. The park also discussed the proposed action with the Confederated Salish and Kootenai Tribes on December 18, 2014 and with the Blackfoot THPO on March 12, 2015. The tribes did not raise concerns at that time. Under this plan, consultation with the tribes would continue as site-specific treatments are identified.

Environmental Justice

Leases (as described under Alternative B) would be available to all interested parties, regardless of race or income, through an open bidding system. Lessees would be required to pay at least "fair market value rent" (36 *CFR* 18.5). The cost of the leases would therefore not be outside the existing market value for the area. While members of low-income communities may not be able to afford to lease the properties, the proposed action would not reduce existing rental or housing opportunities in any surrounding communities. Because there would be no change to the existing housing market, there would be no adverse impacts that would disproportionately affect low-income populations. Additionally, none of the activities in the proposed action would result in adverse impacts to human health or environmental quality. Impacts to Environmental Justice have therefore been dismissed.

Indian Trust Resources and Indian Sacred Sites

The project would not affect any reserved treaty rights. During scoping and subsequent government-to-government consultation, neither the Blackfoot Tribe nor the Confederated Salish Kootenai Tribes identified trust resources or sacred sites of concern within the project area. The proposal would therefore not impact Indian Trust Resources or Indian Sacred Sites, and the topic has been dismissed.

Socioeconomics

As visitation is over 2.5 million visitors to the park annually, any increase in visitor use from leasing seven Lake McDonald properties would be negligible in comparison to overall visitor numbers. There would therefore be no appreciable change to socioeconomics, including local businesses and concessions contracts. As the need arises, rehabilitation of the properties could occasionally result in additional small-scale construction jobs. Any increase would cease once rehabilitation is completed, and the effects would not be appreciable given the park's proximity to multiple communities where various larger-scale infrastructure development projects are underway. For these reasons, this topic is dismissed.

Special Status Species (Federally Listed Threatened and Endangered Species and State Listed Species of Concern)

Table 2: Special Status Species: The species below will not be analyzed further based on the rationale provided. They are dismissed from further analysis.

<u>Common Name and Scientific Name</u>	<u>Status</u>	<u>Rationale for Exclusion</u>	<u>Habitat Description and Range in Action Area</u>
Spalding's campion/ <i>Silene spaldingii</i>	ESA-threatened	Habitat not present.	While present in Flathead County, there are no known locations of Spalding's campion within Glacier National Park. Surveys conducted according to protocols in October 2015 did not locate this species and it has never been found in the park. Furthermore, it was not anticipated to be found in this area as this plant species is an upland plant that grows in upland mesic grasslands. Lake McDonald is a lacustrine system that supports numerous emergent and forested wetlands along its margins, many of which are supplied hydrologically by springs. Therefore, there would be no effect to Spalding's campion from the proposed project. However, if it is found in the area, the plants would be avoided.
Water howellia/ <i>Howellia aquatilis</i>	ESA-threatened	Habitat not present.	While present in Flathead County, there are no known locations of Water Howellia within Glacier National Park. Surveys conducted according to protocols in October 2015 did not locate this species. This species was not anticipated to be found because it grows in small depressional wetlands or draw down potholes. This type of habitat is not available in the area around Lake McDonald or in Glacier National Park. Therefore, there would be no effect to Water Howellia from the proposed project. However, if it is found in the area, the plants would be avoided.
Douglas' neckera moss/ <i>Neckera douglasii</i>	State listed species of concern	Species not expected to occur.	There is a historic record showing this species in the Lake McDonald developed area below the lodge. However, there have been no observations of this species since 1901, and a survey conducted according to protocols in 2001 could not relocate it. Therefore, there would be no effect to Douglas' neckera moss from the proposed project. However, if it is found in the area, the moss would be avoided.
Hooded ramalina lichen/ <i>Ramalina obtusata</i>	State listed species of concern	Species not expected to occur.	There are no known populations of this lichen in Glacier. Multiple surveys completed according to protocols failed to find this species. All known populations occur south of the park. Therefore, there would be no effect to Hooded ramalina lichen from the proposed project. It

Lake McDonald Properties Management Plan / Environmental Assessment

			occurs on bark, twigs, branches, and trunks of trees. If this lichen is found on trees that could be affected by the proposed project, those trees would be avoided and not disturbed.
Jelly lichen/ <i>Collema curtisporum</i>	State listed species of concern	Species not expected to occur.	There are no known records of this species occurring in Glacier National Park. Multiple surveys completed according to protocols failed to find this species. It occurs on the bark of <i>Populus</i> tree species. If this lichen is found on trees that could be affected by the proposed project, those trees would be avoided and not disturbed.
Tufted club-rush/ <i>Tricophorum cespitosum</i>	State listed species of concern	Species not expected to occur.	Tufted club-rush occurs in wet meadows and sphagnum bogs in the montane to alpine zones; with an elevational range of 3200-4600'. While present in Glacier National Park, there are no known locations of this species within the proposed project area. Wetland surveys of the proposed project area were conducted according to protocols in October 2015. The surveys did not locate this species. Therefore, there would be no effect to tufted club-rush from the proposed project. However, if it is found in the area, the plants would be avoided.
Giant helleborine/ <i>Epipactis gigantea</i>	State listed species of concern	Species not expected to occur.	Giant helleborine is found along stream banks, lake margins, around springs, and in peatlands (fens), with high calcium carbonate concentrations. Sometimes it is found near thermal waters. There is only one known population in Glacier National Park. The wetland surveys conducted according to protocols in October 2015 did not locate this species in the project area. Therefore there would be no effect to giant helleborine from the proposed project. However, if it is found in the area, the plants would be avoided.
Velvetleaf huckleberry/ <i>Vaccinium myrtilloides</i>	State listed species of concern	Species not expected to occur.	Velvetleaf huckleberry is found in a very small concentrated area of Glacier National Park. It occurs in moist to rather dry forests in the montane zone. Surveys conducted according to protocols in October 2015 did not locate this species in the proposed project area. Therefore, there would be no effect to velvetleaf huckleberry from the proposed project. However, if it is found in the area, the plants would be avoided.
Pale corydalis/ <i>Corydalis sempervirens</i>	State listed species of concern	Habitat not present.	This species grows in open, sometimes disturbed soils of meadows, and avalanche areas in the montane zone. It grows best in full light and seems to occur almost exclusively in recently burned forests (fire dependent species). There are no known locations of pale corydalis within the proposed project area. Surveys conducted according to protocols in October 2015 did not locate this species. Furthermore, it was not anticipated to be found in this area as this plant species grows primarily in recently burned areas. Therefore, there would be no effect to pale corydalis from the proposed project. However, if it is found in the area, the plants would be avoided.
Stalk-leaved monkeyflower/ <i>Mimulus ampliatus</i>	State listed species of concern	Species not expected to occur.	This species has only recently been found in Glacier National Park (2017). It was found in an area that burned in 2015 east of the Continental Divide. Surveys conducted according to protocols in October 2015 did not locate this species in the project area and it has never been found on the west side of the park where this project is located. Therefore, there would be no effect to stalk-leaved monkeyflower from the proposed project. However, if it is found in the area, the plants would be avoided.

Lake McDonald Properties Management Plan / Environmental Assessment

Fish and wildlife			
Bull trout/ <i>Salvelinus confluentus</i>	ESA- threatened	No habitat present in action area.	Bull trout inhabit Lake McDonald, and Lake McDonald is classified as "Feeding, Migration, Other" under the Critical Habitat designation. The project would not affect water temperature, cover, channel form and stability, spawning and rearing substrate conditions, and migratory corridors in a manner that would impact the species or critical habitat. The proposed activities would not impact bull trout or their habitat because any work involving structural rehabilitations, repairs, removal, or utilities installation would occur above the waterline. During any these activities, sediment could be generated, but this sediment would be captured using standard sediment control measures before it reaches the lake (See Wildlife Mitigation Measures). There would be no increase of sediment reaching Lake McDonald that would be discernable from the baseline. There would be a "no effect pathway" to impact bull trout and therefore there would be no effect to bull trout or bull trout habitat. (Personal communication, Glacier NP Fisheries Biologist, Chris Downs).
Westslope cutthroat trout/ <i>Oncorhynchus clarkia lewisi</i>	State listed species of concern	No habitat present in action area.	Westslope cutthroat trout inhabit Lake McDonald and some of the tributaries draining into the lake. The project would not affect water temperature, cover, channel form and stability, spawning and rearing substrate conditions and migratory corridors in a manner that would impact the species. All project activities would take place on the shore. Sediment would be captured and there would be no increase of sediment reaching Lake McDonald that would be discernable from the baseline. Therefore, there would no effect to westslope cutthroat trout. (Personal Communication, Glacier NP's Fisheries Biologist, Chris Downs).
Canada lynx/ <i>Lynx canadensis</i>	ESA threatened	Habitat not suitable.	The project occurs within the area designated as critical habitat for Canada lynx. However, on a micro-level the project site is not considered suitable habitat for Canada lynx, nor would the project affect any habitat in the surrounding area (Personal Communication, Glacier NP's Wildlife Biologist, John Waller). In the western United States, lynx are most closely associated with Engelmann spruce, subalpine fir and lodgepole pine forest types between elevations of 4,920 to 6,560 feet (McKelvey et al. 2000). Preliminary lynx habitat modeling for the park defined moist conifer forest above 4,000 feet elevation as most likely to support lynx. The project area is highly-developed area and at approximately 3,200 feet. Therefore it isn't considered suitable and there would be no effect to Canada lynx.
Little brown bat/ <i>Myotis lucifugus</i>	State listed species of concern	Mitigation measures would avoid adverse impacts.	The little brown bat potentially depends upon parts of the project area and may inhabit some of the buildings considered under this plan. There is also ample natural bat habitat in the vicinity of the project areas, including wildlife trees and other features that provide roosting habitat. Measures would be included to mitigate potential effects to the little brown bat that include conducting bat surveys prior to implementing actions that could affect bats or which could expose people to potential pathogens carried by bats. Buildings occupied by roosting bats would not be leased for human occupation until after repairs have been made to prevent bats from entering. Bats usually vacate buildings in the

Lake McDonald Properties Management Plan / Environmental Assessment

			fall and hibernate in alternate, warmer areas. Activities such as structural modifications and building removals that could trap bats or displace them during the roosting period would be timed to occur when bats are not present, typically from late-September through April. Since bats typically use roosting sites year after year, some bats may be displaced from long-used roosting sites in some of the buildings. However, because there is ample natural bat habitat in the vicinity of the project areas, including wildlife trees and other features that provide roosting habitat. Because of the mitigation measures and availability of surrounding habitat, park wildlife biologists have determined that the bats would not be adversely impacted and are dismissed from further analysis.
Wolverine/ <i>Gulo gulo</i>	ESA-proposed as threatened	Habitat not suitable.	Wolverines typically inhabit high-elevations areas that maintain deep snow late into the warmer months of the year. Wolverines are likely to avoid human populations by living in remote and inhospitable locations. The project area at Lake McDonald is in a highly developed area not considered suitable habitat, and wolverines would likely avoid this populated area (personal communication, Glacier NP's wildlife biologist, John Waller). There would be no effect to wolverine.
Western glacier stonefly/ <i>Zapada glacier</i>	ESA-proposed as threatened	Habitat not present.	The western glacier stonefly (<i>Zapada glacier</i>) is found in segments of glacier-fed streams, specifically in close proximity to meltwater sources, at high-alpine locations within the park. Due to its low elevation and warm water temperatures, Lake McDonald is not typical habitat for the Western glacier stonefly (Joe Giersch, USGS Aquatic Etymologist, personal communication). The Western glacier stonefly would not be impacted by the project and is therefore dismissed from further analysis.
Meltwater lednian stonefly/ <i>Lednia tumana</i>	ESA-proposed as threatened	Habitat not present.	The meltwater lednian stonefly (<i>Lednia tumana</i>) is found in segments of glacier-fed streams, specifically in close proximity to meltwater sources at high-alpine locations within the park. Due to its low elevation and warm water temperatures, Lake McDonald is not typical habitat for the meltwater stonefly (Joe Giersch, USGS Aquatic Etymologist, personal communication). The meltwater stonefly would not be impacted by the project and is therefore dismissed from further analysis.
Brush-tipped emerald/ <i>Somatochlora walshii</i>	State listed species of concern	No actions proposed that would affect this species.	According to the Montana State Species of Concern Report describing the habitat, they are found in small slow-flowing streams that flow through open bogs, sedge fens, marshes and meadows. This species can also be found at lake or pond outlets. (Montana National Heritage Report 2015). None of the cabins are located at the outlet of Lake McDonald. Both Moberly Cabin and Henderson Fox cabins are located in areas that exhibit habitat that this species might be found in, however no actions are proposed that would affect them.
Reticulate tailedropper/ <i>Prophysaon andersoni</i>	State listed species of concern	No actions proposed that would affect this species.	According to the Montana State Species of Concern Report the species may be found within the proposed project area (Montana National Heritage Report 2015). They are found in mesic mixed conifer forest, often relatively close to water. The cabins are located within habitat that would support this species, however no actions are proposed that would affect them.

Lake McDonald Properties Management Plan / Environmental Assessment

Northern goshawk/ <i>Accipiter gentilis</i>	State listed species of concern	No actions proposed that would affect this species.	Goshawks nest and forage in extensive old growth forest stands like that present on most of the cabin properties. The project does not propose clearing forest that would diminish Goshawk habitat or availability of nesting sites. Human disturbance may displace Goshawks from utilizing forest near the cabins for nesting, but likely would continue to forage in the area.
Great blue heron/ <i>Ardea herodias</i>	State listed species of concern	No actions proposed that would affect this species.	Great blue herons use the lakeshore in the project area for foraging, but no nesting colonies or rookeries that would support colonies have been found during annual surveys around Lake McDonald where the cabins are located (Personal Communication, Glacier National Park Wildlife Biologist, Lisa Bate. Though sensitive to human disturbance of the kind associated with this project, these cabins occupy a small amount of the lakeshore and there are many acres of undeveloped lakeshore for herons to occupy or forage. Therefore impacts to herons would be negligible.
Brown creeper/ <i>Certhia americana</i>	State listed species of concern	No actions proposed that would affect this species.	Brown creepers nest and forage in extensive old growth forest stands like that present in most of the cabin properties. The project does not propose clearing forest that would diminish Brown creeper habitat or availability of nesting sites. Brown creepers are not known to be particularly sensitive to human disturbance so human use within the project area is unlikely to impact this species.
Evening grosbeak/ <i>Coccothraustes vespertinus</i>	State listed species of concern	No actions proposed that would affect this species.	Evening grosbeaks nest and forage in coniferous forest like that in the project area. They are not known to be particularly sensitive to human disturbance, and as no habitat modification is proposed, no impacts to this species are anticipated.
Pileated woodpecker/ <i>Dryocopus pileatus</i>	State listed species of concern	No actions proposed that would affect this species.	Pileated woodpeckers nest and forage in mature forests like that in the project area. They are not known to be particularly sensitive to human disturbance, and as no habitat modification is proposed, no impacts to this species are anticipated.
Common loon/ <i>Gavia immer</i>	State listed species of concern	Species not expected to occur.	Common loons are not known to nest along the lakeshore. The Conservation Plan for the Common Loon in Montana (Montana Fish and Wildlife 2009) did not document any loons on Lake McDonald, nor have annual surveys conducted according to protocols (Personal Communication, Glacier National Park Wildlife Biologist, Lisa Bate). They are very sensitive to human disturbance and development levels may already be too high for loons to use the limited amount of nesting habitat available on this lake. Also, the properties covered in this plan lie within a larger development footprint, so that implementation would not increase the amount of disturbed shoreline and therefore no impacts are anticipated above what is currently occurring.
Cassin's finch/ <i>Haemorhous cassinii</i>	State listed species of concern	No actions proposed that would affect this species.	Cassin's finches nest and forage in open forests like that found in the project area. They are not known to be particularly sensitive to human disturbance, and as no habitat modification is proposed, no impacts to this species are anticipated.
Harlequin duck/ <i>Histrionicus histrionicus</i>	State listed species of concern	No actions proposed that would affect this species.	Harlequin ducks have been the subject of intensive study within GNP. These migratory ducks forage and nest along fast-flowing streams and stage near the center of Lake McDonald. While they do forage along the

Lake McDonald Properties Management Plan / Environmental Assessment

			shoreline, if disturbed there is nearby habitat for them to move to. No impacts are anticipated above what is currently occurring.
Varied thrush/ <i>Ixoreus naevius</i>	State listed species of concern	Mitigation measures would avoid adverse impacts.	Varied thrushes nest and forage in moist old growth forests like that found in the project area. Because they nest in the understory, this project could displace birds attempting to nest in the immediate vicinity of an occupied cabin. However, work would avoid critical breeding or nesting periods; therefore, the level of impact is expected to be negligible.
Clark's nutcracker/ <i>Nucifraga columbiana</i>	State listed species of concern	No actions proposed that would affect this species.	Although Clark's nutcrackers have been observed in the project area, it is not what would normally be considered Clark's nutcracker habitat, which tends to be at higher elevations with a greater occurrence of limber and whitebark pine. They are not known to be particularly sensitive to human disturbance so no impacts are anticipated.
Black-backed woodpecker/ <i>Picoides arcticus</i>	State listed species of concern	Habitat not suitable.	Black-backed woodpeckers are closely associated with recently burned forests. The project area is in mature, un-burned forest types surrounded by vast expanses of burned forest. Therefore, no impact to this species is anticipated.
Horned grebe/ <i>Podiceps auritus</i>	State listed species of concern	Habitat not suitable.	Horned grebes tend to use lakes much smaller and marshier than Lake McDonald for foraging and nesting. There are no summer records of this species on Lake McDonald (John Waller, Wildlife Biologist personal communication). Therefore, this project is unlikely to impact horned grebes.
Boreal chickadee/ <i>Poecile hudsonicus</i>	State listed species of concern	No actions proposed that would affect this species.	Little is known of the life history of this species, but it does not appear to be sensitive to human disturbance. Therefore, no impacts are anticipated.
Great gray owl/ <i>Strix nebulosa</i>	State listed species of concern	Habitat not suitable.	Great gray owls forage in forest openings within mature forests. Lakeshores are not considered prime habitat so this project is unlikely to negatively impact them.
Northern hawk owl/ <i>Surnia ulula</i>	State listed species of concern	Habitat not suitable.	Northern hawk owls are an irruptive species closely associated with recent forest fires. As the project area is unburned, it is unlikely that implementation would affect this species.
Pacific wren/ <i>Troglodytes pacificus</i>	State listed species of concern	No actions proposed that would affect this species.	Pacific wrens nest and forage in forest stands like that present in most of the cabin properties. The project does not propose clearing forest that would diminish Pacific wren habitat or availability of nesting sites. Pacific wrens are not known to be particularly sensitive to human disturbance so human use within the project area is unlikely to impact this species.

Visual Resources

The project would not result in any new development or infrastructure. There would also be no increased visibility of existing infrastructure because vegetation would be managed to preserve existing levels of screening. Evidence of human activity on the properties, such as vehicles and outdoor furnishings, could intrude on the natural and historic visual aesthetics of a given property, but the effect would be limited to the immediate vicinity of the property, would be minimized by vegetative screening, and would be consistent with human activity at other developed areas in the park. The restoration of existing historic structures would not negatively affect visual resources because the activities would meet the Secretary's Standards for Rehabilitation and would be followed. Restoration could improve the appearance of the buildings, thereby benefitting historic visual characteristics. Removing any of the structures and restoring the site to its natural state would noticeably change the visual characteristics specific to a given site, replacing human development

and historic infrastructure with a strictly natural aesthetic. These effects would be noticeable only in the vicinity of the property. Because vistas and scenic landscapes would remain essentially unchanged or effects would be noticeable only in the immediate vicinity of a given property, impacts to visual resources are dismissed from further analysis. Impacts to visual aspects of historic character are analyzed in more detail under “Affected Environment and Environmental Consequences, Historic Structures and Districts”.

Visitor Use and Experience

Given the more than 2.5 million visitors to the park annually in the last few years, and the availability of lodging at large, nearby establishments both inside and outside the park, leasing the six properties would not increase lodging or recreational opportunities in any meaningful way. Human use of the properties, whether by leasing, structure rehabilitation, concessioner use, or NPS administrative use, could slightly increase human activity at Lake McDonald. Any increase would be barely noticeable due to the small number of properties affected and the high level of human activity that already occurs in the area, especially during the summer months. Human activity, including any associated noise, would be consistent with the type and level currently experienced in other developed areas of the park. There would be no changes to visitors’ ability to access the lake, nearby streams, hiking trails, local businesses, and other recreational areas. Therefore, for the reasons stated, there would be no impacts to visitor use and experience, and the topic is dismissed from further analysis.

Water Resources and Floodplains

Lake McDonald is adjacent to the properties considered in this EA, and a number of associated streams and tributaries are located nearby.

It has been a longstanding concern of the park that private inholdings may be contaminating Lake McDonald, primarily through inadequate wastewater disposal systems. Several studies have been done, most recently in 2007. In that study, excessive algal growth near the shoreline was found in the area of the Grist Road Cabins, which includes the Glacier Park Cottage Sites Historic District, and more heavily at Kelly’s Camp. Septic leakage was clearly entering the lake, but it could not be attributed to specific properties (Hauer 2007). However, septic systems too close to the lake or within saturated soils cannot assure proper processing of wastewater.

Leasing the cabins and resuming use of the properties and rehabilitating and/or removing any structures would not affect water quality or water quantity because the following requirements would be in place: 1) If cabins are retained for leasing or other human occupation, water would be appropriately treated in accordance with state standards, or cabins would be connected to the park water system; 2) septic systems would be brought to county standards or wastewater would be routed to the park sewer system; 3) the use of chemical ice melt and other chemicals that could adversely impact water on and adjacent to the properties would be prohibited; 4) the project does not involve any work within the banks of any waters near the project sites; and 5) during rehabilitation or removal erosion control measures shall be guided by NPS standards, federal, state, and local regulations to prevent indirect effects on Lake McDonald water quality. Utility improvements, such as connecting water and sewer utilities to park systems and upgrading septic systems, may require separate environmental review and compliance.

Overnight occupation in historic districts is exempt per Director’s Order 77-2, and a statement of findings for floodplains is not required. Consequently, floodplains are dismissed from analysis.

Recommended Wilderness

None of the cabins are located in Recommended Wilderness, but the cabin properties are located in a visitor service zone directly adjacent to Recommended Wilderness. All uses would be consistent with what is expected in the visitor service zone surrounding Lake McDonald. Resumed use of six of the cabin properties would have a small increase in noise from visitors occupying the cabins. Due to the small amount of increase, these increases would have negligible impacts to wilderness qualities (i.e. increased noise affecting wilderness solitude). Recommended Wilderness is dismissed as an impact topic.

Climate Change

The project would result in some increase in Green House Gas (GHG) emissions from additional use of the cabins and rehabilitation activities. Any new GHG emissions would be very small and would make a negligible contribution to the park's overall emissions profile. The project would not undermine or cancel the benefits of ongoing efforts to reduce GHG emissions parkwide.

Natural Soundscapes

With the resumed use of the cabin properties, there would be an associated increase of activity on Lake McDonald. Under the plan resumed use of the six properties, which could include a motorboat at each property, would not have a discernible change the current overall soundscape in the Lake McDonald. Temporary construction noise would also affect the natural soundscapes while repairs were undertaken to repair cabins for resumed use. Construction noise would be temporary, occurring during day-time over a period of weeks during a structure's rehabilitation. The increase noise from resumed use of the cabins would be similar to current noise levels associated with visitor activity in the Lake McDonald area. These types of noises are expected in the visitor services zone, and their increase would be negligible from current noise levels. Therefore, natural soundscapes is dismissed as an impact topic.

ALTERNATIVES

Two alternatives, action and no action, are carried forward for evaluation in this EA. Three alternative management strategies were considered and dismissed (see “Alternatives Considered and Dismissed”).

Alternatives Carried Forward

Alternative A – No Action – Continue current management

The no action alternative describes the conditions that would exist in the project area if no management plan is implemented. This alternative provides a benchmark for evaluating the changes and related environmental impacts that would occur under the action alternative. Under no action, the park would continue current management of the properties, which is limited to emergency maintenance and rehabilitation or preservation treatments as funds are available. Priority for preservation would be based on several factors, including historic significance, structural condition and integrity and rate of deterioration. Preservation treatments would generally be preventative; focusing on causal factors of deterioration rather than on effects (the repair of a leaking roof would be prioritized, for example, over repairing drywall that is crumbling as a result of the leak). Eventually structures and associated driveways that deteriorate to the point where they may become a health or safety hazard would be removed.

Alternative B – Manage NPS-owned properties at Lake McDonald using an adaptive management approach (NPS Preferred)

Alternative B would employ an adaptive decision framework to enable the preservation of historic properties considered in this EA, and to guide the future use those properties. Five management options have been identified and prioritized for the NPS properties on the lake, based on historic preservation and administrative needs and objectives, the condition of the structures, and feasibility. If the first management option is not underway or cannot be implemented by the timeframes specified, second, third and fourth management options are triggered (Table 2). A more detailed discussion of each management option is provided below. Separate environmental review and compliance would be required for activities such as specific building rehabilitation, repairs, site improvements, maintenance, and structure stabilization.

Historic Leasing

Under Alternative B, historic leases would be the first management option for Kelly’s Camp, the Wheeler Camp, Greve’s Tourist Camp, Moberly property, Fox-Henderson property, and Grisley property (the Grisley property is not listed in the National Register of Historic Places, but is considered eligible since it has not been evaluated for listing, and is therefore managed as an historic property). The properties would be offered for lease through a public bid process announced by public notice (in accordance with 36 CFR Part 18 and specifically, 18.7). The park could enter directly into leases with non-profits (501[3] [c] status) or units of government without a bid process if the associated use would “contribute to the purposes and programs of the park.” The lease agreements would describe allowable uses of the property. Funds generated from the leasing program would be used to augment the preservation of historic properties at Lake McDonald and throughout the park.

- Lessees would be required to pay at least “fair market value rent” (36 CFR 18.5). As required by NPS policy, the rent amount would be reassessed periodically to ensure payment of at least fair market value as the value of the property changes with structural rehabilitation, utility improvements, and other factors. The park would establish a new program to manage and support the historic leasing program.

36 CFR 18.4(g) requires:

that the leasing of historic properties insures property preservation and abides with applicable aspects of 36 CFR 800 (Preservation of Historic Properties). NPS policy provides for “historic leasing” of properties listed or eligible for listing in the National Register of Historic Places, with lessees responsible for costs of preservation.

- Lessees would be responsible for repairs, rehabilitation, and utility improvements, and for ongoing and cyclic maintenance needs. Under each lease agreement, a preservation/maintenance plan would be developed in consultation with park staff. Structural preservation, repairs, and maintenance would require additional environmental review and compliance specific to the scope of work for a given project. In some cases, depending on funding and the condition of a property, the park may undertake some repairs or improvements to a property prior to leasing.
- Lessees would also be required to develop vegetation management prescriptions, to include restoration of native plants and control of non-native invasive plants. Vegetation management prescriptions would be developed with park staff and would specify methods and objectives that are guided by Best Management Practices.
- Lessees could not sublet properties or buildings. Cabins would be available for winter use, but there would be no changes to existing snowplowing operations or road access—i.e. snow plowing would only occur along roads where it currently occurs, and no additional roads would be plowed under this plan. Road closures would remain in place for Camas Road, Going-to-the-Sun Road, Grist Road, North McDonald Road, and Greve’s Property Road in accordance with the park’s road management guidelines. Non-motorized access (such as skiing) would be permitted. Seasonal gate/road closures would remain in place. Roads gated during winter would be considered trails per the park’s road management guidelines.

Concessioner Assignment

The Moberly, Fox-Henderson, and Grisley properties would be available for assignment to an interested concessioner if leasing is not in place or in process within the timeframes identified in Table 2. A new concession contract would be offered if it was for a new commercial use (leasing to park visitors) or the cabins would be assigned for use as part of the operation to an existing concessioner (such as for employee housing). The concessioner would be responsible for needed rehabilitation and maintenance, and would pay franchise fees in accordance with the concession contract.

NPS Administrative Use

As a third potential management option, the Wheeler and Grisley properties and the Moberly guest cabin could be used for park housing, offices, storage, or other park administrative needs if first and second management options for these properties are not in place.

Stabilization

This option is aimed toward controlling the long-term deterioration of an unoccupied building. Stabilization would be done to preserve a building’s basic structural integrity and footprint on the landscape. Essential architectural form and design features would be preserved. Utility infrastructure and non-essential elements of the buildings would be allowed to deteriorate or would be removed if appropriate (e.g., carpet, window screening, interior paint). Basic weatherproofing, such as exterior finishes, would be maintained in functional condition, usually on a seven-year cycle (the typical timeframe needed to assure preservation of buildings). Roofing would be maintained and usually replaced every 15 years. Major rebuilding and stabilization (such as sill log replacements) would occur on a 16 to 20-year cycle. Stabilization would be funding dependent. Because park or other federal funds for stabilization are unlikely and limited, other funding sources would be sought. Stabilization is an option for all the properties except for Wheeler, Moberly Guest House and Grisley.

Documentation and Removal

Under Alternative B, the Johnson-Graham would be removed due to severe levels of deterioration (see “Affected Environment, Historic Structures and Districts”). Documentation (in accordance with Section 106 of the National Register of Historic Places) and removal would be a fourth management option for the Moberly House, Fox-Henderson Cabin, and structures at Kelly’s Camp, Greve’s Tourist Camp, and the Grisley property; the decision to remove a structure would be made after other management options have been exhausted, and would be based on unacceptable levels of deterioration and the potential for safety hazards. Removal is not included in the management options for the Wheeler property or the Moberly Guest House due to their level of significance. The condition of the structures also does not warrant consideration of removal at this time.

The park would be responsible for hazardous materials abatement before removing any building. A structure slated for removal would be sold to an outside entity that would remove it from the park, remove the foundation, and clean up all debris. The park would restore and revegetate the site after the structure is removed. The method of removal would be determined on a case-by-case basis, depending on location, access, resource considerations, type of construction, or other factors and be done in such a way to have the least amount of impact on natural resources.

	can be found, then document and remove.
--	---

Table 3 – Ranked options under Alternative B.

Mitigation Measures

The following mitigation measures would be part of project implementation. These measures have been identified to minimize the degree and/or extent of adverse effects. The level of impacts has been determined assuming these mitigation measures would be conducted.

Historic Properties and Districts

- a. Any rehabilitation, repairs, or other work on historic structures would be in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.
- b. Documentation to the standards of the Historic American Building Survey (HABS) and the Historic American Landscape Survey (HALS) would be conducted prior to the removal of a historic property.
- c. If a property was removed, opportunities for interpretation would be provided to document the historical role the property played.
- d. Lessees would not be permitted to sublet properties or plow roads.
- e. A *Historic Structure Report and Treatment Plan* would be developed for each property being rehabilitated. This will ensure repair and rehabilitation done to historic properties considered in this EA does not adversely affect a property's historic integrity.
- f. Consider artifacts/conservation (e.g. pictures) to place in museum and archives to document historic structures and districts.

Archeology and Ethnographic Resources

- a. Further systematic archeological surveys would be conducted before any construction, structure removal, excavation, landscaping, or other activity involving ground disturbance to prevent the disturbance of any undiscovered cultural resources.
- b. Archeological monitoring would be required during any ground disturbance.
- c. Should construction unearth cultural resources, work would be stopped in the area of discovery and the park's Cultural Resources Specialist would be notified. Discovered resources would be evaluated for their potential eligibility for listing in the NRHP. Procedures would follow those outlined in 36 CFR 800, Protection of Historic Properties.
- d. All contractors and subcontractors would be informed of the penalties for collecting artifacts or intentionally damaging paleontological materials, archeological sites, or historic properties. Personnel would be educated about the need to protect any cultural resources encountered.

Water Resources and Wetlands

- a. Sewer and new or existing septic systems would meet Flathead County and NPS standards.
- b. Only herbicides approved by the National Park Service would be used to protect water quality. Application and use would be coordinated with the park's Integrated Pest Management coordinator.
- c. Leases would stipulate allowed shoreline uses to protect water resources and wetlands, e.g. no vegetation removal, no increase in footprint (boathouses, docks, or sheds), etc.
- d. Chemical ice melt and all other chemicals (such as fertilizers) that could adversely impact water on and/or adjacent to the properties would not be permitted.

Vegetation and Soils

- a. Best Management Practices would be followed to control non-native invasive plants under all management options. During structure removal, properties would be treated for non-native invasive plants beforehand. Disturbed areas would be restored with native vegetation.
- b. Only native plants or approved ornamental species (only if already present) would be maintained. When approved ornamental plants die, they would be replaced with native plants.

- c. During soil disturbance activities, topsoil would be protected and reused.

Wildlife, Threatened and Endangered Species, State-Listed Species of Concern

- a. Consultation and planning with wildlife specialists would precede the removal of structures and buildings in order to identify any species concerns and additional mitigation measures, e.g. bat surveys.
- b. Surveys of bat and bird use of the structures and buildings would be conducted prior to any construction, removal, or rehabilitation.
- c. Construction, removal, or rehabilitation would be timed to mitigate impacts wildlife (e.g. avoiding work during critical breeding or nesting periods and timing work to occur when bats are not present).
- d. Seasonal winter gate/road closures and requirements would remain in place pursuant to Glacier National Park Management Directive 7.3 for the protection of wildlife in winter. There would be no snow plowing or road improvements beyond current levels. Areas beyond closed gates would continue to be managed as trails (e.g., no motorized or mechanized transport, dogs or other pets).
- e. Leases would specify guidelines regarding the presence and management of natural wildlife attractants (such as grasses, ornamental trees, and shrubs); guidelines would be specific to each property and would be designed to minimize the presence of such attractants, e.g. lessees would not be allowed to cut any timber nor remove any landscape features without prior approval.
- f. NPS sanitation and food storage requirements would apply to all properties and be strictly enforced. Proper means of refuse removal would be established in conjunction with park law enforcement and wildlife specialists. Satisfactory winter refuse removal from remote properties would be a stipulation of winter use.
- g. Buildings occupied by roosting bats would not be leased for human occupation until after repairs have been made to prevent bats from entering.
- h. Best Management Practices (BMP's) would be in place as necessary during building rehabilitation or demolition activities to prevent erosion and sediment reaching the lake that would affect bull trout and habitat. Revegetation of sites where buildings are removed would also be done to reduce the potential for erosion from surface water.

Alternatives Considered and Dismissed

Remove all structures and restore the properties to natural conditions.

The park considered removing the structures associated with the Lake McDonald properties and returning the land to a natural state. This alternative was dismissed because it would result in an adverse effect to historic properties under Section 106 of the National Historic Preservation Act (NHPA), and would not be in keeping with the National Park Service's responsibility toward the preservation of historic properties. All but three of the structures are listed in the National Register of Historic Places; two (Grisley Cabin and Bunkhouse) are unevaluated and, therefore, considered eligible for listing until their eligibility can be determined, and the privies located in Kelly's Camp are not eligible for listing on the NRHP (Table 1). As contributing resources to five historic districts around Lake McDonald, the structures provide physical evidence in chronicling the history of human activities in the Lake McDonald area, from the homesteading days to recreational tourist camps. The structures reflect the pioneering and recreational patterns at Lake McDonald during the early 20th century, and several are associated with significant events and people in the history of the park.

The National Park Service is a steward of both natural and cultural resources. The Organic Act of 1916 and the 1910 legislation establishing Glacier National Park direct the National Park Service to preserve and protect natural and cultural resources unimpaired for future generations. The NHPA, passed in 1966, requires federal agencies to preserve historic properties, including historic structures, for present and future generations. As the primary federal agency through which the NHPA is realized, the National Park Service is committed to the preservation of historic properties. NPS management of cultural resources as described in the 2016 *NPS Management Policies* includes "stewardship to ensure that cultural resources are preserved and protected, receive appropriate treatments (including maintenance) to achieve desired conditions, and are made available

for public understanding and enjoyment.” With respect to historic properties on Lake McDonald, the park’s 1999 *General Management Plan* states that properties in the Lake McDonald area will be “managed to preserve their historic values”.

The park has removed historic structures that have deteriorated to the point where they present a public health and safety hazard and/or their preservation is not practicable. The Roberts Cabin, a contributing resource with the Glacier Park Villa Sites Historic District, was removed in 2008 for these reasons, and to reduce visual impacts and development along the lake shoreline, increase undeveloped land along the lake for wildlife habitat, and honor an agreement made at the time of purchase with the previous landowner to remove the building (see 2007 “Roberts Cabin Removal Environmental Assessment/Assessment of Effect” and Finding of No Significant Impact, signed on October 24, 2007). Similarly, this EA proposes to remove the Johnson-Graham Cabin due to health and safety concerns and the impracticality of restoring the severely deteriorated structure. However, given the cultural significance of the Lake McDonald properties and associated structures, removing all of the buildings or buildings that retains enough structural integrity to warrant restoration would be contrary to the National Park Service’s responsibilities toward the preservation of historic properties. Therefore, this alternative has been dismissed because it would result in significant adverse impact to significant historic resources, conflict with NPS mission and policy directives, counter decisions made in the park’s General Management Plan, and would not fulfill the purpose and need of this plan.

Rehabilitate and interpret the history of a sample of the cabins from different eras, and remove the rest.

Interpretation would be feasible for cabins in or near developed areas. For cabins in less developed areas, interpretation would require additional development, such as signage and places to park, which would require the removal of vegetation and result in a loss of wildlife habitat and security. Interpretation of cabins closely surrounded by private land would be inappropriate because the additional human activity could infringe on the privacy of nearby landowners. The removal of cabins that are not interpreted would result in the loss of National Register of Historic Places-listed structures that are contributing resources within historic districts around the lake and significant for their representation of important periods in the area’s history; this would be an adverse effect under Section 106 of the NHPA. Merely interpreting structures that are not removed would not resolve the need to fund their preservation. Therefore, this alternative has been dismissed because it would not meet the purpose and need of the plan, and because the adverse impact on historic properties would be too great.

Affected Environment and Environmental Consequences

This chapter describes the affected environment (existing setting or baseline conditions) and analyzes the potential environmental consequences (impacts or effects) that would occur as a result of implementing the proposed project. Cumulative effects are analyzed for each resource topic carried forward. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the no action and preferred alternatives.

Historic Structures and Districts

Affected Environment

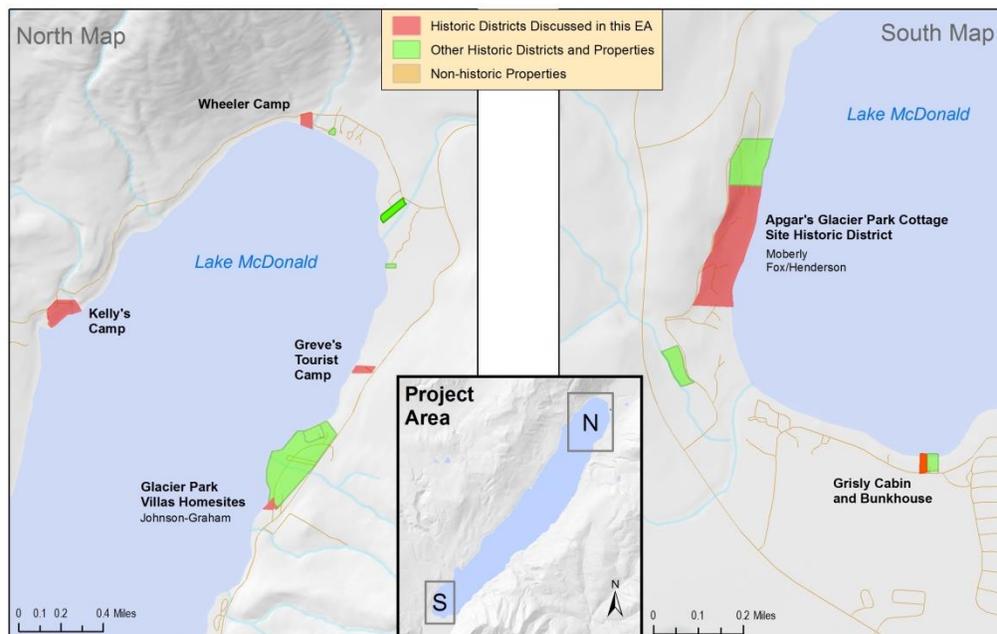
The seven properties considered in this EA were originally part of five homesteads established around Lake McDonald prior to the creation of Glacier National Park in 1910. The cabins and their associated outbuildings are part of the history of recreational tourist camps and individual family summer homes in the McDonald Valley.

Today, the Lake McDonald shoreline encompasses 11 historic districts with multiple structures on them. This EA considers a number of structures (approximately 16 cabins and eight outbuildings) on seven properties. Twenty-one of the structures are historic and listed in the National Register of Historic Places. The Grisley property has not been evaluated for listing in the National Register of Historic Places, but is considered eligible for listing until a determination of eligibility can be completed. The privies at Kelly Camp are also not listed. Generally, historic buildings listed in the National Register of Historic Places are associated with events that have made a significant contribution to the broad patterns of park history and/or embody distinctive characteristics of a type, period, or method of construction. According to the National Register criteria for evaluation, to be eligible for listing a property must be:

- a) associated with events that have made a significant contribution to the broad patterns of our history; or
- b) associated with the lives of significant persons in our past; or
- c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) have yielded or may be likely to yield, information important in history or prehistory.

The following property information is from Recreation Camps on Lake McDonald: Glacier National Park, MT (Ravage 2006).

Figure 9 – Historic districts and property locations



Kelly's Camp Historic District

Kelly's Camp Historic District consists of 25 buildings built between 1910 and 1920. Of the 16 contributing structures to the district, the park owns three, which are being considered in this EA: the Big House (1910), Cabin 1 (1920-1925), and a camp shop (1925-1930). Approximately one acre of the 6.5-acre historic district is in park ownership. This district is listed in the National Register of Historic Places because it is a representative example of a tourist cabin resort development on Lake McDonald. According to the National Register nomination, the buildings represent an "extraordinary degree" of integrity of architectural design, materials, ownership, setting, and feeling. Like many cabin resort buildings at Lake McDonald and of this era, most are log cabins constructed of locally available materials, augmented with milled lumber and fittings.

Frank and Emmeline Kelly originally homesteaded the property in 1894. In the 1920s, they began developing a cabin resort to take advantage of the ever-increasing park visitor traffic through the valley. At the time the Going-to-the-Sun Road was completed, a road was built to Kelly's Camp, allowing the resort to serve auto travelers. The Kelly's summer tourist cabin resort was operated by family members through the 1960s.

The Big House is the largest of all the Kelly's Camp buildings and was occupied by Mr. and Mrs. Kelly in the camp's early days. It served as the 'headquarters' for the resort complex. The Big House was built in two phases using unpeeled, notched western larch and red spruce logs daubed with clay, and stands on a banked foundation of log piers. Repairs were made to the porch in 2010. The Big House is in fair condition structurally, but utilities and many finish features need repair and/or replacement, and hazardous materials (lead and asbestos) mitigation is needed. Cabin 1 is a single-story cabin, nearly identical to two other cabins in the district. The cabin has notched log walls with the original bark retained. The original shake roof was replaced with metal roofing in the 1960s. Cabin 1 is in fair condition. There is rot in the sill logs and floors in the rear of the cabin, and utility and other repairs are needed. The camp shop is an open-walled pavilion with log pole supports, log plates and log purlins. The north quarter was enclosed with clapboard siding to provide closed storage. The structure was used for cutting and stacking firewood for the camp. The camp shop is in good condition due to rehabilitation in 2011. Water and sewer are absent, electric is via a generator, and a total rewire is needed. There are also privies located on the property (no longer being used) and not historic.

Wheeler Camp Historic District

The Wheeler Camp consists of four cabins and two outbuildings built between 1925 and 1952. The Wheeler Camp's historic listing is based on it being a representative example of recreational camp development around Lake McDonald. The camp was part of development resulting from a national trend toward vacationing at rustic retreats.

Burton K. and Lulu Wheeler first brought their three children to Lake McDonald in 1915. The family spent summers at Lake McDonald for nearly the next 100 years, first in a small, leased hunting cabin (now gone), and later in the present day structures. Burton K. Wheeler served on the Montana legislature, as the state's attorney general, and later as one of Montana's U. S. Senators (1927-1947). Wheeler played a prominent role in progressive Democratic political circles and in the investigation of the Teapot Dome scandal. As Chairman of the Senate's Indian Affairs Committee, Senator Wheeler hosted meetings and ceremonies with members of the Blackfoot Tribe at the Wheeler Camp. The Wheeler Camp was occupied seasonally by the family until the fall of 2014.

The camp's rustic architectural style exemplifies wilderness recreational camps typical of the first half of the 20th century. The Burton and Lulu Wheeler Cabin was built in 1942. It is a one-and-one-half story building on a concrete foundation. The exterior logs are hewn on the inside. The lakeside is dominated by an open truss gable-front porch supported by a pair of log posts. The entrance is a set of casement doors, and the front has numerous other horizontally divided windows. The Sleep Cabin (1930) is a one-story peeled cedar log cabin comprised of two side-gabled blocks adjoined on the gable ends. The Boys Cabin (ca. 1952) is a single-story, L-plan, frame building on a stone and concrete foundation. The Garage Cabin (1940 and mid-1950s) is a single-story, rectangular plan, frontal gable log cabin built in two phases. The Generator House (ca. 1925 with later addition) is a small frontal gable frame building with a larger frame addition on the same axis and a concrete foundation. The Boathouse (ca. 1950) is a small exposed exterior vertical log frame building. Utilities on the property are in very poor condition (water, sewer, and electrical), and do not meet current codes. The condition of structures is poor to fair, and the cabins have issues including the presence of hazardous materials and structural deficiencies (e.g., interior cables are providing structural support in the main cabin and the exterior stairway is hazardous). At least one of the cabins needs roof maintenance. Exterior finishes need maintenance and rehabilitation.

Greve's Tourist Camp Historic District

The Greve's Camp is listed in the National Register of Historic Places based on it being a representative example of a tourist cabin camp development on Lake McDonald. The district consists of eight buildings (four cabins and four outbuildings, including a bathhouse, woodshed, generator house, and outhouse), all of which contribute to the historic district.

The property was originally part of the Denis and Lydia Comeau homestead. Ruth and Fred Greve later developed the area into a tourist camp, which they operated from the mid-1930s to 1978. Ruth Greve retained right of use through 1993. In 1984, the park removed all of the frame cabins south of the main cabin and moved two cabins to Swiftcurrent in the Many Glacier Valley, leaving the eight structures that comprise the current district.

The Dora Crump (or main) Cabin was built by local craftsman Edward Kruger in 1910. It is a one and a half story log cabin with a full-width, screened-in porch, and unusual dovetailed corners. Cabin 4 (1931) is single-story gabled roofed cabin with tightly-fitted dovetailed reverse-notched logs. Cabins 7 and 8 (1938) are single-story gable-roof log cabins. The four cabins are in fair condition. All cabin foundations were provisionally stabilized in 2015 and re-roofed, but foundations still do not meet current construction standards. All exterior staircases need replacement, and other repairs are needed. Hazardous materials are present and require mitigation. The bathhouse (1939) is a long, narrow, single-story, side-gabled, frame building with drop siding, and is badly deteriorated. Structural elements have lost integrity, and asbestos containing materials are present. The bath house has been considered important in understanding the facilities of a tourist cabin camp, but would require substantial mitigation for hazardous materials and a ground-up rebuild. The woodshed (1910) is

a small board-and-batten sided structure with an unfinished interior. Although it is in fair condition, the roofing is deteriorated. The generator house (1935) is a single-story, gable-roofed, frame building with drop siding. The outhouse (1940) has bead board siding, a wood shingle roof, and rests on a concrete pad. These latter three are in fair condition, needing various repairs. Water and sewer are absent, and electric does not meet code. The property has not been occupied since the 1980s.

Glacier Park Villas Sites Historic District

In 1906, John E. and Olive Lewis purchased approximately 170 acres neighboring Lake McDonald, including the present site of the Lake McDonald Lodge, from original homesteader George Snyder. Apart from upgrading Snyder's hotel property, the Lewis' joined with partners and formed the Glacier Park Land Company and, in 1916, created the forty-six lot Glacier Park Villas Sites subdivision. Three family cabins were built between 1917 and 1949. This district, including 30 of the lots, is listed in the National Register of Historic Places as a representative example of recreational camp development around Lake McDonald. This district exemplifies one type of property division and camp development that occurred around Lake McDonald in the first half of the twentieth century. One of the three cabins, the Johnson-Graham Cabin, is considered in this EA.

The Johnson-Graham Cabin was originally comprised of two cabins originally constructed by Jane Buttrey, and later combined into a single, frontal gable cabin by Cornelia T. Clack in 1947. The building is of frame construction (typical of cabins constructed after the 1929 fire) with clapboard siding and a steeply pitched roof sheathed in cedar shingles. The cabin is severely deteriorated with holes in the roof, part of the foundation failing, interior ceilings collapsing, mold infestation, and hazardous materials (asbestos) present through most of the interior. Additionally, the ground uphill of the structure is collapsing onto the base of the building causing structural changes. Other deficiencies also exist. According to the park's engineer and historic rehabilitation program manager, the cabin has reached a condition such that repair and rehabilitation are no longer practicable.

Grisley Cabin and Bunkhouse

The Grisley property, including the cabin and bunkhouse at Apgar (circa 1955) has not been evaluated for listing in the National Register of Historic Places, but is considered eligible until a determination of eligibility can be completed. Robert and Florence Grisley used the cabin seasonally until 2012. The cabin's design, materials, and workmanship suggest it was built using published plans rather than an original design. The cabin is a mid-century modern style, wood-frame, clapboard-sided structure with an open deck and concrete foundation. The cabin deck (above an attached boathouse) has fallen in and needs major rehabilitation. There are also two small outbuildings. The property needs other minor repairs, but overall is in good condition. Sewer and water are connected to the park's system. Electric needs some updating.

Apgar's Glacier Park Cottage Sites Historic District

This historic district consists of a subdivision containing 30 lots. It includes six recreational family camps (encompassing ten contributing historic structures) built between 1908 and 1975, including the Moberly House property and Fox-Henderson Cabin. The district is listed in the National Register of Historic Places as a representative example of recreational camp development around Lake McDonald. The district is unique in that it reflects the shift from traditional rustic style cabins to a more modern aesthetic beginning in the 1950s.

The Moberly House property includes the Moberly House built in 1962 and Guest Cabin built around 1925. The Moberly House was occupied by family friends for several years until the death of Mrs. Moberly in 1995. For several years Moberly House was home to the park's Artist-in-Residence, but has been unoccupied since 2001. The Moberly House was designed by the local architectural firm of Brinkman and Lenon, and was built by Bob Erickson of Kalispell. The Moberly House is a two-story, rectangular plan frame block on a poured concrete foundation. Large plate glass windows span the front. The interior of the house retains much of its original mid-century modern decorative scheme. The Moberly House has a good foundation; however, various elements are in need of rebuilding or replacement, including the deck, some eaves/soffits, and exterior stairs. There are interior mold problems, and hazardous materials may be present. The Guest Cabin is a single-story log cabin with an added poured concrete foundation. It has a cross-gabled roof and small open porch. The

Guest Cabin is in fair condition, but needs log work and floor work. Water is absent, sewer is connected to the park system, and electric needs updating.

The Fox-Henderson Cabin was built in 1953. The cabin is the best example of mid-century modern style on the lake. Patricia Henderson was the park magistrate's niece. The cabin was occupied by the Fox family on a seasonal basis until 2014. The cabin has a single-story, gable-roof with a cross-gabled, frame main block projecting from the lake side that creates an L-plan footprint. The exterior is rough board-and-batten siding with a pressed metal roof. There is a wetland beneath and surrounding the cabin and the foundation is undermined by water, resulting in structural and settling issues. The retaining walls that protected the back and north side of the cabin from upslope soil movement are mostly deteriorated, leaving the interior supports and foundation in very poor condition. The parking area needs rebuilding since supporting retaining walls have deteriorated. The access road is in good condition. However, the interior of the cabin is in good condition. A water treatment system is needed, septic is acceptable, and interior and exterior electric need updating.

Impacts of Alternative A – No Action

Under Alternative A, because there would be no plan to identify a strategy for attaining funds for the preservation and maintenance of historic properties, many (possibly all) of the buildings would likely deteriorate before the park has the means to preserve them in place. Structures that deteriorate to the point where they could present a threat to human health and safety would need to be removed. The time of deterioration to the point of removal is unknown. It is not known at this time which structures could be lost and which could be preserved, since the prioritization of preservation treatments would depend on a number of factors, including historic significance, structural condition, rate of deterioration, and cost-effectiveness. But, depending on the availability of funding, this alternative would very likely result in the eventual loss of multiple structures. If funding is unavailable or limited such that it must be directed toward preservation elsewhere in the park, no action could result in the eventual loss of approximately 21 of the National Register of Historic Places-listed structures considered in this EA, as well as the three unevaluated structures.

If no action eventually leads to the loss of contributing historic structures, the degree to which each historic district would be affected would depend on whether other structures that contribute to the site's significance remain. Historic districts that lose all contributing features would be more adversely affected than those that retain features. At Kelly's Camp Historic District, the Big House, Cabin 1, and Camp Shop could be lost to deterioration, but 11 contributing buildings would remain. At the Glacier Park Villas Historic District, the Johnson-Graham cabin would be lost, but the NPS-owned Hunter-Marken Cabin and Neitzling Cabin would remain. At Apgar's Glacier Park Cottage Sites Historic District, the Moberly House, Guest House, and Fox Cabin could be lost, but seven contributing buildings would remain, including the privately-owned Bullhead Lodge and Studio of western painter Charlie Russell. All contributing structures for the both the Wheeler Camp and Greve's Tourist Camp Historic Districts could be lost due to deterioration.

If NPS-owned contributing structures are lost from Kelly's Camp, Glacier Park Villas, and Apgar Glacier Park Cottage Sites Historic Districts, the districts would retain some physical evidence of their historic significance, assuming the privately-owned historic structures on the properties are maintained by their owners. The Wheeler Camp and Greve's Tourist Camp Historic Districts could be most severely affected under this alternative, because all contributing historic structures would be at risk of deterioration and loss. Preservation would likely be prioritized at the Wheeler Camp, given the site's unique significance and the buildings' relatively good condition. If preservation funds are not available, however, all the buildings at the Wheeler Camp are at risk. Districts that lose all contributing structures would still retain their historic significance as sites that represent important events and people in the park's history, but would likely be re-evaluated for eligibility for listing in the National Register of Historic Places. Historic American Buildings Survey (HABS) and Historic American Landscapes Survey (HALS) documentation would minimize negative impacts through the documentation of features such as the architectural characteristics and configuration of structures within a given historic district. However, without the presence of the structures, the significance of the historic districts would no longer be observable through visual, physical representations, and would be based solely on site significance. The potential for multiple historic buildings to deteriorate and be removed under this alternative

would result in an adverse effect due to the loss of physical evidence of important periods in the park's history, the loss of cultural resources that contribute to the significance of nearly half the historic districts around Lake McDonald, and the potential for one or more of those historic districts to lose eligibility for listing in the National Register of Historic Places. However, at this time, removal would not diminish the cumulative historic built environment around the lake because other properties representative of these periods 1910-1960's would remain and be maintained, including the NPS-owned McDonnell, Hunter-Marken, and Neitzling properties.

Additionally, the historic structures around Lake McDonald contribute to the area's historic viewshed. While visual effects from the deterioration and removal of the buildings may not be discernable from a distance, given the number of other buildings along the lake, site-specific effects would be readily noticeable, affecting the historic attributes of the viewshed at each individual historic district.

Cumulative Effects

The temporal and geographic scope of impacts for historic structures and districts are the projects that have occurred with historic structures and districts surrounding Lake McDonald for approximately the past 10-15 years. Past, present, and reasonably foreseeable future actions impacting historic structures and districts in the Lake McDonald area include: the removal of the Robert's Cabin from the Glacier Park Villas Historic District; ongoing repair, rehabilitation, and restoration of historic structures in the Lake McDonald area; demolition of the Johnson and Hydro dorms at the Lake McDonald Lodge; repairs to the Camp Shop and porch at Kelly's Camp; reroofing cabins at Greve's Tourist Camp, rehabilitation of the Going-to-the-Sun Road; and routine maintenance and rehabilitation of infrastructure and utilities around Lake McDonald. In summary, the impacts of past, ongoing, and future maintenance and rehabilitation of other historic buildings in the Lake McDonald area, including both NPS and privately-owned buildings, have had and would continue to have a beneficial impact on historic structures and districts through the preservation of structural and architectural features. One exception is the removal of the Robert's Cabin in 2008, which resulted in an adverse effect because it was a building eligible for listing in the National Register of Historic Places. The removal adversely impacted two historic districts; the Glacier Park Villas Home Sites and Lake McDonald Lodge Historic Districts, since the Robert's Cabin was a contributing resource to the districts' historic status. As described above, the no action alternative would eventually adversely affect 2 historic districts and lead to the eventual loss of contributing resources and physical evidence of important periods in the park's history. Under no action, adverse impacts could extend to four additional historic districts, thereby affecting over half the historic districts around Lake McDonald. The no-action alternative would lead to the loss of the National Register of Historic Places-listed structures and three unevaluated structures discussed in this Plan. When the effects of the no-action alternative are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on historic structures and districts would be adverse due to the eventual and probable loss of historic structures and impacts to historic districts.

Impacts of Alternative B – Preferred Alternative

Because Alternative B includes a range of management options, there would also be a range of impacts to historic structures and districts, depending on which option is in effect and the number of properties where management options are taking place. The Johnson-Graham Cabin would be removed under all scenarios. This would result in a permanent loss of a historic structure and contributing feature to the Glacier Park Villas Home Sites Historic District.

Historic leasing, assigning to a concessioner or NPS Administrative Use for all the properties (Kelly's Camp, Wheeler Camp, Greve's Tourist Camp, Grisley Property, Moberly Property, and Fox-Henderson Cabin) would result in the greatest benefit to historic structures and districts, because lease agreements, contract stipulations (in the case of concessioners) or NPS Administrative Use would include repairs, rehabilitation, and maintenance necessary to preserve the character defining elements that qualify the structures for listing in the National Register of Historic Places. Approximately 20 historic structures would remain that contribute to the Kelly's Camp Historic District, Wheeler Camp Historic District, Greve's Tourist Camp Historic District, Apgar's Glacier Park Cottage Sites Historic District, and Glacier Park Villas Sites Historic District The

preservation of the structures would retain the visual, physical evidence of early recreational tourism at Lake McDonald and the significance of the historic districts they contribute to. This would ensure that the structures and districts remain listed in the National Register of Historic Places. The extent and degree of benefit from Alternative B would depend on how many properties are successfully leased, assigned to a concessioner or used administratively. Maximum benefit to historic structures and districts would be achieved if all structures were protected under one of these three management options. Leasing income would also augment funding for the preservation of historic structures elsewhere in the park, which would increase the overall level of benefit. Under the scenario of historic leasing, assigning to a concessioner or administrative use would not result in adverse impacts to historic structures or districts.

Stabilization as a second management option for Kelly's Camp and a third option for the Greve's Tourist Camp, Fox-Henderson property, and Moberly House (Table 2), would preserve essential architectural form and design features, and thus the structures' basic structural integrity and footprint on the landscape. The aforementioned qualities are elements that give the structures eligibility for listing on the NRHP; therefore, stabilizing properties would keep four properties eligible for listing in the NRHP and would not result in adverse effects to properties or districts.

As described in no action, the *removal of properties* (an option for Kelly's Camp, Greve's Tourist Camp, Fox-Henderson property, Johnson-Graham Cabin, and Moberly House) would result in the loss of these structures from their respective historic districts. Removing any of the listed structures would result in an adverse effect to a historic structure listed on the NRHP and the corresponding NRHP historic district. This would be a permanent adverse impact of losing five historic properties that contribute to a historic district. HABS and HALS documentation would mitigate and minimize negative impacts by recording features such as the architectural characteristics and configuration of the structures within a given historic district.

For each scenario under Alternative B there would be some permanent loss of contributing resources and evidence to the park's history. However, the integrity of each historic district would be maintained from other structures remaining within each historic district that display the patterns of park history and/or embody distinctive characteristics of a type, period, or method of construction associated with recreational tourism around Lake McDonald. Retaining the structures and using them in some manner described above and or stabilizing them would result in the preservation of these historic structures and the larger story of recreational tourism around Lake McDonald.

Cumulative Effects

Past, present, and reasonably foreseeable future actions considered in the cumulative effects analysis for this alternative are the same as for Alternative A.

Under Alternative B, the removal of the Johnson-Graham Cabin would adversely affect the Glacier Park Villas Home Sites Historic District due to the loss of a contributing structure. As described above, removing the Johnson-Graham Cabin would be the second contributing structure removed from the Glacier Park Villas Home Sites Historic District, which lost the contributing Robert's Cabin in 2008. The Glacier Park Villas Home Sites Historic District would not lose its eligibility for listing under the National Register of Historic Places, however, due to the continued presence of the Hunter-Marken Cabin and Neitzling Cabin, both of which are also contributing structures.

As previously described in this EA, the direct and indirect impacts of implementing Alternatives B's historic leasing program, concession use, or NPS administrative use and stabilization to all properties as described under Alternative B would enable the preservation of the character defining elements that qualify up to 20 listed structures (all but the Johnson-Graham Cabin) and possibly the unevaluated structures (at the Grisley property) for listing in the National Register of Historic Places. Similarly, due to the effects of Alternative B's stabilization option, the total cumulative impact on historic resources would continue to be beneficial due to the continued preservation of four historic properties. With the opportunity of historic leasing, concession use, or NPS administrative use provided by Alternative B, the incremental impacts would contribute to preserving

historic resources through rehabilitation. To a lesser degree, stabilization would also contribute slightly to the beneficial impacts to historic resources.

However, if Alternative B's "removal" option were implemented as a last resort for the Fox-Henderson, Greve's, Kelly's Camp and Johnson-Graham Cabin, the direct and indirect effects on historic resources, when combined with the past, present and reasonably foreseeable future impacts, would be adverse and long-term due to their permanent loss. Similar to the no action alternative, the incremental impacts of Alternative B's removal option would gradually over time negatively impact the park's historic resources by substantially reducing and changing the park's historic structures and districts due to continued deterioration and ultimately their probable removal. Thus, under this scenario, Alternative B would contribute substantially to the adverse impacts already occurring. However, the remaining historic structures in the park would ensure no historic districts would lose their NRHP status, and cabins and structures that display the history of recreational tourist camps and individual family summer homes in the McDonald Valley would remain.

VEGETATION, SOILS, AND WETLANDS

Affected Environment

The shoreline of Lake McDonald is generally vegetated with cabins and development located on all sides of the lake, but with the exception of Apgar Village at the foot, Kelly Camp on the upper west side and Lake McDonald Lodge on the east side of the lake, development is mostly in pockets around the lake with large undeveloped areas between cabin sites. The vegetation within the lower McDonald Valley is dominated by several successional stages of a moist western red cedar-western hemlock forest type. Since red cedar and hemlock do not establish quickly in recently opened stands, areas that have had recent fires are dominated by pioneering species, such as lodgepole pine, western larch, aspen, paper birch, and black cottonwood. This is the case with much of the Lake McDonald's western shoreline, which burned in 2003 during the Robert Fire. As these forests mature, Douglas fir, western larch, Engelmann spruce, and western white pine become more prominent, dominating the overstory in various proportions. However, successional patterns will likely change relative to historic conditions due to rising temperatures and changing hydrologic patterns resulting from climate change. Prior to a wildfire in 1929, much of this area supported a western red cedar/western hemlock forest, and old growth stands still exist in the project area.

Riparian vegetation dominates Lake McDonald's shoreline bottomlands. Western red cedar, Engelmann spruce, and white spruce often share the canopy with black cottonwood. The majority of understory is composed of a variety of native species. Non-native invasive plant species have recently been documented at the Fox-Henderson property, Moberly property, Wheeler Camp, and Greve's Camp.

Alluvial soils and lakeside beach soils are the predominate soils in the project area surrounding Lake McDonald. Soils consist of well-drained sandy and gravelly soils. Productivity and revegetation potentials are high in the surface soil and moderate in the subsoil due to higher rock content and lower water and nutrient holding capacity. This soil is highly susceptible to weed infestation when disturbed (Dutton et al. 2001).

Wetland surveys were conducted in October 2015 at the Greve's Tourist Camp, Moberly property, and Fox-Henderson property, where wetlands were considered likely to occur. The surveys documented emergent forested wetlands at all three sites as defined by both the National Park Service and the U.S. Army Corps of Engineers (COE) (NPS 2015). The footings of the deck on the Moberly House occupy a portion of the gravel lakeshore of Lake McDonald. In addition, immediately adjacent to the Moberly House is a wetland complex containing wetland plants and perennial surface and sub-surface flow. Steps originating from the second floor of the dwelling lead to a footpath to the lakeshore that bisects this habitat. The Fox-Henderson House sits in the middle of a jurisdictional wetland. In order to access the dwelling, a raised boardwalk was constructed to avoid having to walk through the wetland to enter the building. The house sits in the middle of the wetland and is surrounded by riparian/wetland vegetation.

There are about 214,048 acres comprising the Lake McDonald sub district. Within this sub district, 203,280 acres are designated backcountry, while the remaining 10,768 acres are part of the visitor services zone. The

properties discussed in this EA total approximately seven acres. The properties are located within the visitor services zone, with most situated in the forest with some clearing around them. Some of the properties have landscaping associated with them.

- **The Kelly Camp property** is located in remnant old growth cedar hemlock forest that survived the 2003 Robert Fire due to fire suppression actions. Riparian shoreline vegetation is largely absent due to disturbance from boat use. A very small amount of landscaping is present around Cabin 1 and the Main Cabin.
- **Wheeler Camp** is within an old growth cedar hemlock forest. The site has been actively landscaped for decades, and there are approximately .75 acres of maintained lawn, ornamental non-native trees, flower beds, a berry bed, and a vegetable and herb garden. An additional 0.5 acre is denuded of native vegetation. Non-native invasive plants, including oxeye daisy, orange hawkweed, and spotted knapweed are present within the maintained area.
- **The Greve's Tourist Camp** is located in a western red cedar/ western hemlock forest habitat type, in a low area near the shore, with relatively open understory. Non-native invasive plants are present, including oxeye daisy. A lakeshore fringe wetland with associated vegetation is present at the high water mark along the shoreline, and is dominated by tufted hairgrass and lentic-fruited sedge (NPS 2015). Existing structures on the property are outside the wetland boundary.
- **The Johnson-Graham Cabin** is located in an old-growth forest consisting of western red cedar/ western hemlock.
- **The Grisley property's** vegetation consists of a mosaic of dense coniferous forest, including pockets of old-growth trees and forest. Riparian vegetation along the shoreline is dominated by western red cedar, Engelmann spruce, white spruce, and black cottonwood. Understory includes red-osier dogwood, willow, alder, mountain maple, chokecherry, horsetail, false starry Solomon's-seal cow parsnip, sweet cicely and various sedges and grasses. Areas behind the cabin were successfully revegetated with native plants in the early 1990s.
- **The Moberly property** is located on steep, wet terrain. A fringe lakeshore wetland has been identified on the property and wetland vegetation is present throughout the property, fed by springs, and ultimately feeding into Lake McDonald. Spring water runs under the Moberly House foundation, and the structure's deck is partially within an emergent forested wetland. Wetland function, hydrology, and vegetation have also been affected by pipes and culverts installed to divert and control water flow. Lakeshore fringe wetland vegetation is dominated by redtop and beaked sedge, with patches of reed canary grass (NPS 2015). Invasive plants are present, including tall buttercup and oxeye daisy.
- **The Fox-Henderson Cabin** lies entirely within a lacustrine fringe wetland and spring-fed emergent and forested wetland, within in a western red cedar/lady fern wetland habitat type (NPS 2015), surrounded by old growth forest. The property is fed by springs that feed into Lake McDonald. A stream surrounded by emergent and forested wetland flows beneath the foundation of the cabin. Similarly to the Moberly property, wetland function, hydrology, and vegetation have been affected since 1952 when the cabin was built, primarily by pipes and culverts. High concentrations of invasive plants are present, including orange hawkweed, oxeye daisy, Canada thistle, and yellow toadflax. Canada thistle is often associated with homesteads and may have a long history, whereas oxeye daisy and orange hawkweed could have arrived later with high water or human activity.

Impacts of Alternative A – No Action

Under no action, existing conditions at each property would generally remain unchanged until the buildings must be removed due to deterioration and safety concerns. Non-native lawns and gardens would persist in previously landscaped areas. When structures are removed, activities necessary to remove them, such as vehicle access, demolition, heavy equipment use, and debris cleanup, would disturb vegetation and soils in the immediate area. Based on previous cabin removals, the estimated disturbance from removal would not extend beyond a 10-foot perimeter past the structures. This disturbance would be temporary and lasting approximately four weeks until restoration occurred post-structure removal. Measures such as erosion control, soil salvage, and demarcated work-site boundaries would contain soil and vegetation disturbance to the immediate project

area during structure removal. Ultimately, removing a structure would benefit vegetation, soils, and wetlands because the site would be restored with native plants, non-native invasive plants would be controlled, and impediments to wetland function would no longer be present. Beneficial impacts would be site-specific, with permanent vegetation reoccurring at the building site within one season. Removing the Moberly House and Fox-Henderson House would benefit the wetlands at these locations. Their removal would allow the wetland to return to its proper hydrological function and recover wetland vegetation. Approximately $\frac{3}{4}$ of an acre, including less than $\frac{1}{10}$ of an acre of wetlands would be restored to natural conditions if all the structures subject to removal reached the condition requiring removal (See Table 4 below).

In summary, when properties deteriorated to the point requiring their removal, temporary adverse impacts to vegetation and soils would occur in the project area. The impacts to vegetation and soils would be localized to the properties and would not affect plant species at the population level due to their presence throughout the Lake McDonald area. However, these adverse impacts would be inconsequential due to restoration activities that would restore natural vegetation to the disturbed and developed areas.

Cumulative Impacts

The geographic and temporal scope of impacts for vegetation, soils, and wetlands is the development footprint and projects occurring in the Lake McDonald development area for the past 10-15 years. Past, present and reasonably foreseeable future actions have included construction, infrastructure rehabilitation, and demolition projects that have impacted vegetation, soils, and wetlands in the Lake McDonald developed area. Such projects include the demolition of dormitories at Lake McDonald Lodge and the construction of new dorms, construction of the Apgar Transit Center, the removal of the Robert's cabin and a private cabin at Apgar; and new boat docks at Apgar and Lake McDonald Lodge. Other projects that would affect soils and vegetation in the Lake McDonald area include Phase 10 of the GTSR rehabilitation project and continued infrastructure rehabilitation and maintenance of buildings around the lake.

In summary, impacts to soils and vegetation are ongoing at these developments, where human use causes trampling and compaction of vegetation and soils and where non-native invasive plants continue to exist, despite regular treatment. These impacts are very site specific. Collectively, all of these impacts have had a cumulative adverse effect but are minimal due to mitigation measures such as erosion control, soil salvage, and site restoration. Impacts have also been limited to the areas just adjacent to the cabins and within the developed areas in the visitor services zone.

As previously described in this EA, the eventual restoration of approximately a total of $\frac{3}{4}$ of an acre, including 0.1 acre of wetlands would result in a beneficial impact to wetlands, vegetation and soils. When the effects of the no action alternative are combined with the past, present and reasonably foreseeable future impacts, activities associated with the eventual removal of infrastructure on the properties would temporarily increase site-specific adverse impacts to soils and vegetation until the site can be restored. Following restoration of sites including $\frac{1}{10}$ acre of wetland, after structures are removed, the combined impacts from the no action alternative and past, ongoing, and future actions would be cumulatively beneficial but very negligible given the remaining development around the Lake. The incremental impacts of Alternative A would slightly decrease, but would not substantially change the localized adverse impacts to vegetation occurring from continuing visitor use and continued presence of development in the Lake McDonald area.

Impacts of Alternative B – Preferred Alternative

Due to a range of management options under Alternative B, there would also be a range of impacts to vegetation, soils, and wetlands, depending on which option is in effect. None of the management options under Alternative B would result in a measurable, permanent increase in existing, ongoing adverse impacts. No new infrastructure would be developed, and vegetation management prescriptions and mitigation measures would be put in place to reduce adverse impacts. Vehicle access, temporary heavy equipment use, excavation, and other activities associated with structural rehabilitation, utility installations/upgrades, stabilization, or demolition and removal could cause temporary vegetation trampling, soil compaction, and ground disturbance. Restoration would follow all types of projects and reverse or minimize adverse effects through soil salvage,

Lake McDonald Properties Management Plan / Environmental Assessment

erosion control, control of non-native invasive plants, reseeded/replanting with native plants, and other restorative actions. Restoration projects would also be reviewed and evaluated under separate compliance, providing an opportunity to develop site-specific mitigation measures for a given project.

Under *leasing, concessioner use, and NPS administrative use*, the level of vegetation trampling and soil compaction could increase at each property as a result of human occupation and foot traffic. The effects would be negligible, however, because they would be limited to the immediate vicinity of the property, and foot traffic would most likely occur on previously disturbed ground, landscaped areas, or along the rocky lake shoreline. The potential for private vehicles to spread non-native invasive plants would be mitigated by weed control protocols under vegetation management prescriptions that would be required under leasing, concession use or administrative use by NPS. Historic leasing, concessioner use, and NPS administrative use would require utilities work to make these uses possible. Installation of utilities and other activities associated with rehabilitation of the structures would not occur in undisturbed lands. Depending on current utilities at each property, ground disturbance would occur for water, septic or hook up to existing wastewater treatment system, and electric. No large diameter trees would be removed; approximately 1.075 acres of soils and grasses would be disturbed if utilities were installed (see Table 4 below).

Table 4: Estimates for ground disturbance and restoration

NPS Properties Considered in this EA	Area of Structures		Area of Restoration if Buildings are Removed		Area of Disturbance to Install Utilities if Buildings are Retained		Soil Types Impacted	Associated vegetation species
	Approx. sq. ft.	Approx. acres	Approx. sq. ft.	Approx. acres	Approx. sq. ft.	Approx. acres		
Kelly's Camp (wastewater, septic, and electric)	2450	0.06	4500	0.1	12,300	0.28	Loamy glacial forest soils	elk sedge bluejoint and western fescue
Wheeler Camp (wastewater, septic, and electric)	Not considered for removal				19,500	0.45	Lakeside beach soils/ sandy over gravelly soils	Native grasses. Non-native: oxeye daisy, orange hawkweed, and spotted knapweed
Greve's Auto Camp (wastewater, electric, and water)	2100	0.05	4200	0.1	12,300	0.28	Silty Clay Loam Glacial Till Soils	tufted hairgrass and lentil-fruit sedge non-native: oxeye daisy
Johnson-Graham Cabin	900	0.02	1700	0.04	NA (Not applicable)		Rocky/sandy alluvial forest and grassland soils	queen's cup, bead lily pinegrass, dwarf huckleberry, blue huckleberry, bear grass

Lake McDonald Properties Management Plan / Environmental Assessment

Grisley Cabin and Bunkhouse (water)	1950	0.04	3200	0.07	200	0.005	Lakeside beach soils	horsetail, false starry Solomon's-seal cow parsnip, sweet cicely, and various sedges and grasses
Moberly House and Guest Cabin (water)	1300	0.03	2200	0.05	2000	0.05	Silty Clay Loam Glacial Till Soils and Lakeside Beach Soils	beaked sedge and redbtop
Fox-Henderson (water)	9200	0.21	11,450	0.26	450	0.01	Silty Clay Loam Glacial Till Soils and Lakeside Beach Soils	western red cedar/lady fern

The *stabilization* option under Alternative B is available to Kelly's Camp, Greve's Tourist Camp, Fox-Henderson House, and Moberly House. During stabilization of the property, the footprint of the structures would remain the same, continuing to impact a total of approximately ½ acre of soils and vegetation. Utility infrastructure would be removed if appropriate and restored. Major rebuilding and stabilization (such as sill log replacements) would occur on a 16 to 20-year cycle that would impact soils and vegetation during work (as described above), but would be restored following rebuilding and stabilization.

Under the reuse and stabilization options described above, there would be no new adverse impacts to wetlands at the Greve's Tourist Camp, Moberly property, or Fox-Henderson property. Vegetation management prescriptions would identify sensitive wetland areas that would be avoided during leasing, and similar mitigation measures would be in place for concessioner and NPS administrative use as part of the park's best management practices.

Since the full scope of work for repairing the foundations at these structures under either reuse or stabilization options is not yet known, the work would require separate environmental review and compliance, and measures to avoid or minimize impacts to wetlands would be developed at that time.

Any *removal* of structures would benefit vegetation and soils because native vegetative patterns would be restored. At a minimum, Alternative B would result in the restoration of approximately .04 of an acre with the removal of the Johnson-Graham Cabin. The other three properties that could be removed under Alternative B would result in a total of approximately ½ acre of vegetation and soils being restored. In the event of removal of some of the properties, the area of access routes to buildings is not included as this information is not available at this time. Removal would be a final option under Alternative B, and routes have not been identified. Specific removal options would be selected in consultation with park staff and separate environmental compliance would be done if necessary at that time. Approximately 1/10 of an acre of wetland would be restored at the Fox-Henderson and Moberly properties to their natural hydrologic function as part of a mosaic of wetlands in the project area.

Under any scenario for Alternative B, the adverse impacts to vegetation and soils would be limited to seven acres of the seven cabin properties, with 200,000 acres of largely undeveloped area in the Lake McDonald Valley being unaffected. The impacts to vegetation and soils would be localized to the properties and would not affect plant species at the population level due to their presence throughout the Lake McDonald area. There

would be no change to overall plant species composition and diversity in the area, and the project would not result in diminished soil function.

In accordance with NPS Procedural Manual 77-1, Section 4.2.1 (g) (January, 2012), this project is an **excepted action** and a Wetlands Statement of Findings and compensation requirements are not required. Specifically, this exception allows for maintenance, repair and or renovation of currently serviceable structures or facilities, allows for 0.1 acre or less deviation in the structures configuration of fill footprint in wetlands due to construction codes or safety standards.

Cumulative Impacts

Past, ongoing, and reasonably foreseeable future actions that have impacted vegetation, soils, and wetlands are as described in the cumulative impacts analysis for Alternative A. Under Alternative B all of these actions have had and would continue to have a localized, adverse impact to vegetation, soils, and wetlands in the immediate project area.

As previously described in this EA, under Alternative B, activities associated with structural rehabilitation and repair, utility installation/upgrades, and/or removal of infrastructure on the properties combined with other projects and activities described would temporarily increase site-specific adverse impacts to soils and vegetation in the Lake McDonald area. Foot traffic from human occupation at each property under Alternative B's leasing option (and under concessioner and NPS administrative use) combined with foot traffic associated with other projects and activities could negligibly increase existing levels of vegetation trampling and soil compaction around the lake. When the effects of Alternative B's historic leasing, concession use, and NPS administrative use scenarios are combined with past, present, and reasonably foreseeable future impacts, the total cumulative impact on vegetation, soils, and wetlands would be adverse because of the previously mentioned uses and activities occurring at the properties. When combined with the effects of Alternative B's stabilization option, the total cumulative impact would be adverse to a slightly lesser degree, due to only stabilization activities occurring at the properties. When the effects of the removal option are considered, the total cumulative adverse impact would be further reduced because some properties would be restored to their natural state following their removal. Whether adverse or beneficial, the incremental impacts of Alternative B would contribute slightly to, but would not substantially change, the impacts that are already occurring to vegetation, soils, and wetlands.

Wildlife

Affected Environment

The lower Lake McDonald Valley is an important area for wildlife activity, particularly in the spring and winter. The project areas are within approximately 0.5 mile of the lake shoreline, and are home to various small mammals and birds. Larger, wide ranging mammals, such as deer, elk, moose, bear, mountain lions, and wolves may use and or travel through the project areas. The Lake McDonald area provides a diversity of habitats with an abundance of water and food resources, and areas for nesting, denning, and breeding for permanent, seasonal, and migratory wildlife. The valley functions as a natural wildlife travel corridor, and trans-valley travel corridors are known to exist for certain species. For example, ungulate winter range occurs near Lake McDonald, and wolves from the North Fork occasionally range into the valley. There is year-round habitat for many other species, including moose, elk, mule and white-tailed deer, black and grizzly bears, mountain lions, lynx, wolverine, and pine marten. Birds and other animals such as muskrat, beaver, mink, river otters, raptors and waterfowl make use of wetlands, aquatic and riparian habitats associated with Lake McDonald, and the lake is a staging area for harlequin ducks, common loons, and other waterfowl. Wildlife, particularly bears and mountain lions, have been known to occasionally use unoccupied structures, porches for shelter.

Scarcity of human development on the west shore has preserved natural, undeveloped areas. The park manages approximately five miles of the western shoreline of Lake McDonald (from south of Kelly's Camp to just north of Fish Creek Campground) as recommended wilderness (GMP 1999), providing uninterrupted

connectivity between the lake and vast expanses of recommended wilderness to the west. (This area is adjacent to but outside the project area of this EA). The presence of cabins just north and south of otherwise relatively undeveloped areas, such as the west shore of Lake McDonald, brings with it the potential for human-wildlife conflicts because wildlife may use these areas more freely than the east side of the lake, where there is considerably more human development, including the GTSR and Lake McDonald Lodge. Apgar, another more heavily developed area, is at the foot of the lake. These developed areas are actively managed to minimize human-wildlife conflicts (e.g., bears may be hazed to discourage their presence). While the project area is used by wildlife at times as they travel through the area, the project area is not functional habitat for wildlife because of the development and management of the area that impacts wildlife's ability to travel, forage, den, or nest undisturbed. To protect wildlife security, winter road closures are put in place for all roads west from Apgar, and on the GTSR north of Lake McDonald Lodge. Roads beyond the gates are managed as trails through the winter (e.g., no motorized use, and no pets).

Due to the park's policy of suppressing certain wildfires near developed areas, large fires near Lake McDonald (1929, 2003) have been suppressed. Fire suppression can have complex, important, and broad reaching effects on wildlife. When fire is allowed to burn, natural wildlife processes are supported.

Alternative A – No Action

Under Alternative A, conditions described above under "Affected Environment" would remain mostly unchanged, until the buildings are eventually removed as a result of deterioration. In the interim, if the buildings are left to deteriorate due to a lack of property management strategy, wildlife would continue to make use of them (e.g., porches) for shelter and grow increasingly accustomed to the properties being unoccupied. Deteriorating buildings can cause entanglement hazards for wildlife, but would be removed under this alternative if determined to be a safety hazard.

Ultimately, under Alternative A, all buildings from the properties could be removed. Disturbance and noise during removal of structures would cause wildlife to be displaced to other nearby habitat during the 4 weeks when removal activities were occurring at each property. The removal of buildings would lead to the restoration of approximately a total of $\frac{3}{4}$ acres of native vegetation and approximately seven acres of permanent, useable habitat, resulting in more lakeshore wildlife habitat that wildlife can use for foraging, denning, nesting, traveling, or other purposes. The potential for human-caused disturbance to wildlife (e.g., attractants, noise, artificial light) would be diminished, resulting in long-term beneficial effects. Beneficial habitat improvements would be especially notable at the Fox-Henderson Cabin and Moberly Cabin, because a pervasive mosaic of wetlands would be restored to natural hydrologic functioning at the Fox-Henderson property, supporting a historically important wildlife area. Additional beneficial habitat improvement would occur at the Greve's Tourist Camp, where the eventual restoration of the property would join the area with the relatively undeveloped area between the Lake and the GTSR that is used by wildlife for travel and foraging.

Despite the relatively small amount of reclaimed habitat, the absence of the structures would serve to reduce the overall level of habitat fragmentation around the lakeshore, resulting in a landscape that is more cohesive for wildlife, with improved security against human-caused disturbances. However, these benefits would be minimal due to the remaining development and visitor use that would still occur in the surrounding area.

Cumulative Impacts

The temporal and geographic scope of impacts to wildlife is from the developed property areas considered in this EA for approximately the last 10-15 years. Past present, and reasonably foreseeable future actions that have impacted wildlife include existing and historic developments around Lake McDonald including Apgar, Lake McDonald Lodge, three campgrounds (Apgar, Sprague, and Fish Creek), the GTSR, Grist Road, Kelly Camp Road, the Rocky Point Nature Trail, a number of privately-owned buildings, the properties considered in this EA, and the associated human activity in these areas. Other projects include Phase 10 of the GTSR rehabilitation project and continued rehabilitation and maintenance of structures and utilities around Lake McDonald. Additionally, there is a trend of increasing visitation in the park, and visitor services near Lake McDonald are serving growing numbers of people. Climate change could also lengthen the visitation season, expanding the duration of annual effects. Fires are actively suppressed in developed portions of the Lake

McDonald Valley. In summary, the impacts of past, present, and reasonably foreseeable future actions have resulted in the displacement and disturbance of wildlife near the lake due to traffic on roads, volume of visitors in developed areas, and increasing use of trails, campgrounds, and other facilities. Collectively, all of these impacts have had and continue to have adverse impacts to wildlife.

As previously described in the EA, the effects of the no action alternative would result in the eventual restoration of approximately $\frac{3}{4}$ of an acre and gain of seven acres of habitat, resulting in reduced habitat fragmentation around the lakeshore. The remaining development footprint around Lake McDonald would remain unchanged. When the no action alternative is combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on wildlife would continue to be an adverse effect. Even though the total cumulative impact would continue to be adverse, the impact would be minimal due to the ability for wildlife to disperse to the immediate adjacent backcountry (approximately 200,000 acres surrounding Lake McDonald). The incremental impacts of the no action alternative would contribute slight improvements to habitat connectivity, but would not substantially change existing conditions.

Alternative B – Preferred Alternative

Due to the range of management options under Alternative B, there would be a range of impacts to wildlife resources, depending on which option is in effect and the number of properties where management activities occur.

Historic leasing, assigning to a concessioner, or NPS administrative use for all the properties (Kelly's Camp, Wheeler Camp, Greve's Tourist Camp, Grisley Property, Moberly Property, and Fox-Henderson Cabin) except for Johnson-Graham, would result in the greatest adverse impact to wildlife. With the removal of the Johnson-Graham property, approximately 6.6 acres of cabin properties would remain under this scenario that fragment habitat and would disturb wildlife. The properties in this scenario would be considered for resumed use, but no new infrastructure or development would occur. Wildlife can be disturbed or displaced by human activity due to noise, human scent, artificial lighting, and habitat degradation (such as trampled vegetation). Management options that lead to resumed use and human occupation of the properties, such as leasing, concessioner use, and NPS administrative use, would increase these types of effects to wildlife. The level of adverse impact would depend on how many of the properties are leased or assigned to human use, with greater impacts occurring if all properties proposed for leasing and/or concessioner or NPS administrative use are assigned to those purposes. Impacts would be of greater intensity at Moberly House, Fox Henderson and Greve's Tourist Camp. Moberly House and Fox Henderson is situated very near the shoreline, increasing the potential for the displacement of shy species and shoreline travelers that are sensitive to human disturbance, and possibly increasing the potential for human-wildlife conflicts from visitors recreating on Lake McDonald. Human use of the Greve's Tourist Camp would disrupt established wildlife travel and foraging patterns within a relatively undeveloped area between the lake and the GTSR.

Adverse impacts to wildlife from human activity would be at an increased intensity if the properties are occupied during winter. This is because winter is a time of particular sensitivity for wildlife, due to reduced mobility in snow, increased energetic demands with possible decreased caloric intake, and less vegetative cover, which reduces shelter and camouflage and increases the risk of predation. NPS staffing levels are also reduced during winter, which could hinder the enforcement of regulations on appropriate storage of wildlife attractants. Adverse effects would be minimized by the continuation of winter road closures, thus retaining wildlife security along roadways.

Resuming property use through the reuse options would result in the chance of increased human-wildlife encounter, which can lead to the habituation of wildlife. However, requirements on the storage of wildlife attractants, including the presence of natural attractants (such as some types of ornamental vegetation), would be in place to minimize the potential for wildlife to become human habituated or food conditioned, thereby reducing the risk of negative human-wildlife encounters.

The *stabilization* option could occur for Kelly's Camp, Greve's Tourist Camp, Moberly House, and the Fox-Henderson Property. Human activity during structural preservation, stabilization and maintenance actions

would also displace wildlife from the project areas, and would degrade habitat through noise and effects such as vegetation trampling. As described in the impacts analysis for vegetation and soils, these effects would be temporary, lasting approximately four weeks— noise would cease once the project is complete, and habitat would be protected through mitigation measures and restoration (see also “Vegetation, Soils, and Wetlands, Impacts of Alternative B”). Effects to wildlife would be further mitigated by timing such projects to avoid sensitive breeding, nesting, and denning periods, as well as periods for rearing young. Following structural stabilization, the impacts would not change from present due to the structures remaining unoccupied.

Under Alternative B, the *removal* option for Kelly’s Camp, Greve’s Tourist Camp, Johnson-Graham Cabin, Moberly Property, and Fox-Henderson Property would have slightly more benefit to wildlife. The effect would not be substantial, however, because a total of approximately ½ acre of disturbed vegetation would be restored and the site would still be surrounded by the Lake McDonald Lodge developed area. If all structures for which removal is a final option are removed, the amount of usable, secure habitat around the lake would increase by approximately 4 acres (acreage of Kelly’s Camp, Greve’s Tourist Camp, Johnson-Graham Cabin, Moberly Property, and Fox-Henderson properties).

Under any Alternative B scenario, the effects to wildlife are not likely to increase substantially beyond existing levels or impact any wildlife species at the population level since the project would occur in an already developed area with typically high levels of human activity. Additionally, there would be no increase to the overall level of habitat fragmentation around the lakeshore, but there is potential for habitat restoration around the lakeshore that would result in a minor improvement of landscape cohesiveness for wildlife. The more than 200,000 acres of backcountry surrounding the project area would remain unaffected for wildlife to use as travel corridors, foraging, nesting or denning or for shelter from human-caused disturbances.

Cumulative Impacts

Past, ongoing, and future actions that have impacted wildlife would be the same as described under Alternative A. As previously described, under the historic leasing scenario the direct and indirect impacts of Alternative B would occur from the resumed use of six cabin properties surrounding Lake McDonald. The most marked increase in adverse effects would come with possible winter use of the cabins, as this is a time when wildlife are particularly sensitive and human activity in the Lake McDonald area is typically low. Under the stabilization scenario the direct and indirect impacts of Alternative B would have temporary adverse impacts during previously described stabilization activities, but the impacts would largely continue unchanged due to six properties essentially remaining unoccupied. Under the removal scenario, very small beneficial impacts would occur from a slight increase in wildlife habitat and less wildlife displacement.

The cumulative effects of the Alternative B scenario that resumes use, combined with continued use of other developed areas around the lake would maintain the current level or slightly increase the potential for wildlife being disturbed or displaced by human activity, as described in the effects analysis above. Under the stabilization scenario, the combined impacts would not change because the properties would remain but would not be used. The combined effects would be slightly less adverse with the removal option but the total cumulative impact on wildlife would continue to be adverse in the immediate Lake McDonald developed area because there would still be development and visitor use occurring around the lake at the remaining developments. Therefore, the incremental impacts of Alternative B combined with impacts from past, ongoing, and future actions, would only nominally increase the level of cumulative adverse effects to wildlife.

Grizzly Bears (federally listed as threatened)

Affected Environment

Glacier National Park is part of the Northern Continental Divide Ecosystem (NCDE) Grizzly Bear Recovery Zone. The northern third of the NCDE is occupied by the Greater Glacier Area (GGA), which includes the park and is defined from north to south by the Canadian border and the park's southern boundary, and from east to west by the Blackfeet Indian Reservation and the Whitefish Mountains (Kendal et al. 2008). Genetic analysis of hair samples collected during 1998-2000 resulted in a population estimate of 241 grizzly bears in the GGA (Kendall et al. 2008). No population estimate has been developed exclusively for Glacier National Park. The current NCDE population estimate is approximately 1,000 grizzly bears (USFWS 2015b). Data from the NCDE grizzly bear population trend monitoring project indicates that the ecosystem's grizzly bear population trend is increasing at 3% per year (data from 2004-2011; Mace and Roberts 2012 and Mace et al. 2012).

Grizzly bear habitat is found throughout the park from the lowest valley bottoms to the summits of the highest peaks. Grizzly bears require large areas of undeveloped habitat, including a mixture of forests, moist meadows, grasslands, and riparian habitats, and a substantial amount of solitude from human interactions (USFWS 1993). They have home ranges of 130 to 1,300 square kilometers (USFWS 1993). Grizzly bear seasonal movements and habitat use are tied to the availability of different food sources. In spring, grizzly bears feed on winter-killed ungulates and early greening herbaceous vegetation at lower elevations (Martinka 1972). During the summer, some bears move to higher elevations in search of glacier lilies and other roots, berries, and army cutworm moths. Avalanche chutes provide an important source of herbaceous forage for grizzly bears in the early summer and fall (Mace and Waller 1997). In the fall, bears will continue to forage for berries, roots, insects, and carrion and will broaden their search for food considerably in order to build up enough fat reserves for the winter denning period. During the winter, grizzly bears hibernate in dens away from human disturbance, typically at higher elevations on steep slopes where wind and topography cause an accumulation of deep snow. The denning season in the western portion of the NCDE usually begins in early October, and upon emergence, females may linger near dens until late May (Mace and Waller 1997).

Glacier National Park was placed into grizzly bear management "situations" in accordance with Interagency Grizzly Bear Committee (IGBC) guidelines (USFS 1986), and as directed by the Grizzly Bear Recovery Plan (USFWS 1993). Over one million acres of the park (recommended wilderness) are established as Management Situation 1, in which management decisions favor the needs of the grizzly bear when grizzly habitat and other land-use values compete, and grizzly-human conflicts are resolved in favor of grizzlies unless a bear is determined to be a nuisance (NPS 2010a). The remainder of the park is developed frontcountry and established as Management Situation 3, where grizzly habitat maintenance and improvement are not the highest management considerations, grizzly bear presence is actively discouraged, and any grizzly involved in a grizzly-human conflict is controlled (NPS 2010a).

Some bears have habituated to the high level of human activity during the summer, and continue to use open habitats along roads and within sight of facilities and areas where people are present. Bears that are more sensitive to human disturbance may avoid developed areas entirely or concentrate their activity at night or in remote areas relatively free from human influence.

Grizzly bear/human interaction is a management concern that can threaten bears as well as employee and visitor safety. Bears that are familiar with humans have the potential to become habituated to human presence, leading to further habituation and increased potential for bear/human encounters. Habituated bears are at greater risk of becoming food conditioned and may aggressively seek human food. Habituated bears are usually relocated or hazed from developed areas, and food conditioned bears are oftentimes removed from the population. Bears not habituated to humans are likely displaced from foraging areas and travel routes in proximity to hiking trails and developed areas.

The goal for grizzly bear management in Glacier National Park is to provide sufficient quality habitat to facilitate grizzly bear recovery. Implementing measures within the authority of the National Park Service to minimize human caused grizzly bear mortalities is an integral part of this goal. The *Glacier National Park*

Bear Management Plan (NPS 2010a and b) guides the management of grizzly bears by prescribing actions that are necessary for the protection of the species and the safety of the park visitor.

The Lake McDonald Valley provides habitat and a travel corridor between Apgar and West Glacier for grizzly bears. Grizzly bears may travel through the area while moving around the foot of Lake McDonald or between adjacent drainages in this area. Although grizzly bears are found at higher densities towards the center of the park, in the past 5 years there have been eight reported grizzly bear sightings in the Lake McDonald vicinity (Kendall et al. 2008). The project area totals approximately seven acres of the Lake McDonald sub district's 10,768 acres of frontcountry, most of which is designated Management Situation 3. In this area, grizzly habitat maintenance and improvement are not the highest management considerations, grizzly bear presence is actively discouraged, and any grizzly bear involved in a bear-human conflict is controlled. Also, grizzly bear-human conflicts are resolved in favor of grizzly bears unless a bear is determined to be a nuisance (NPS 2010a). Immediately surrounding the project area are 203,280 acres of backcountry designated Management Situation 1 for grizzly bears. In this Management Area 1 the needs of grizzly bears are given priority, meaning management decisions favor grizzly bears when bear habitat and other land-use values compete. See Figure 10 below showing the backcountry surrounding the project area around Lake McDonald.

PROXIMATE BACKCOUNTRY AROUND LAKE MCDONALD

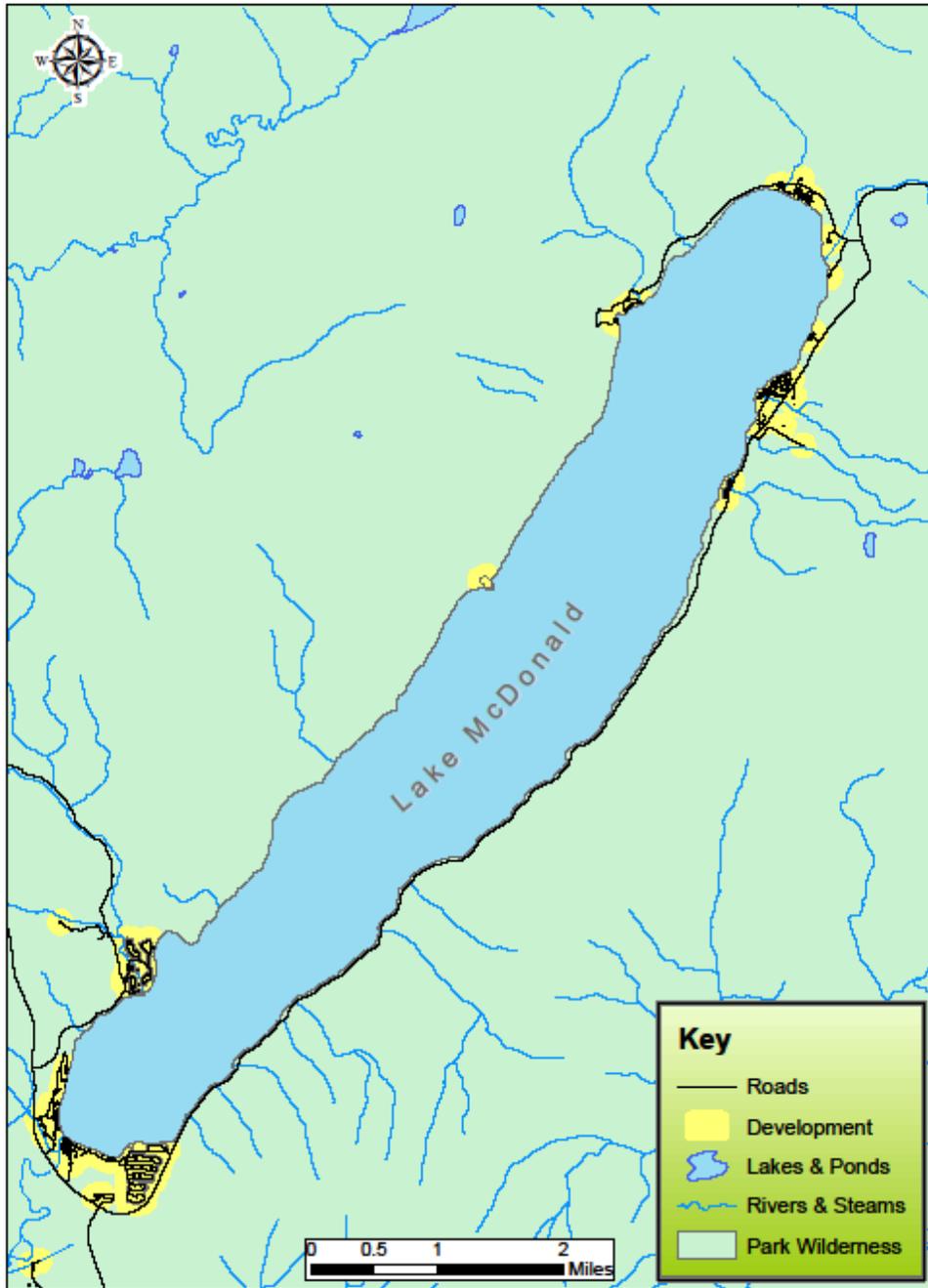


Figure 10: Proximate Backcountry around Lake McDonald

Impacts of Alternative A – No Action

Under no action, there would be no change to existing conditions, unless the buildings deteriorate due to the lack of a property management strategy. The removal of structures and subsequent return of a property (or multiple properties) to a natural state would not likely be of measurable benefit to grizzly bears because the sites would remain under Management Situation 3, where the presence of grizzlies is actively discouraged. If human activity in these areas is low, some bears may benefit from the ability to utilize the restored habitat. The eventual removal of the buildings due to deterioration would lead to the restoration of a total of approximately $\frac{3}{4}$ acres of native vegetation and approximately seven acres that would not be available for residential use, thereby decreasing the chance for bear/human interaction. Noise generated during any structure removal could disturb or displace grizzly bears. But, again, this would be of little consequence to the overall distribution of grizzlies, since bears are actively discouraged from the areas under the Management Situation 3 designation. The potential for noise and human activity to displace bears during structure removal would be temporary and last approximately 4 weeks at each property, ceasing once the structure is removed and the site restored. Bears risk of human habituation and acquisition of human food would rise while workers are on site to remove structures. But the potential for this would be low given strict requirements regarding the appropriate storage of bear attractants. There would be no effect under Section 7 of the Endangered Species Act.

Alternative A would not substantially change the on-going impacts to grizzly bear habitat and movement around the Lake McDonald area from the current development and human activity in the Lake McDonald area. Any impacts under this alternative would be slight and short-lived, and there would be no change in the management situation of grizzly bears. Finally, there would continue to be approximately 200,000 acres immediately surrounding Lake McDonald that would remain unaffected for grizzly bear habitat and travel.

Cumulative Impacts

The temporal and geographic scope of impacts to grizzly bears is the developed property areas considered in this EA for approximately the last 100 years. Past, ongoing, and reasonably foreseeable future actions are the same as described under the cumulative impacts analysis for Wildlife.

Actions taken on grizzly bears have all taken place in areas designated as Management Situation 3 since 1986. The impacts of past, present, and reasonably foreseeable actions have and would continue to result in adverse impacts to grizzly bears through displacement and the previous loss of habitat from over 100 years of human activity and development around Lake McDonald. Even with eventual removal of these cabins, due to the proximity of other developments and landowners, grizzly bears would continue to be actively discouraged from frequenting because the entire area would remain under Management Situation 3. As previously described in this EA, if multiple buildings are removed the restored area could slightly reduce the potential for habituation and human interaction. However, when the effects of the alternative are combined with the other past, present, and reasonably foreseeable future impacts, the total cumulative impact on grizzly bears would continue to be adverse due to little to no change in the remaining development around the lake and no change in the management zone designation for grizzly bears. Therefore, the incremental benefit would not measurably affect the distribution of grizzly bears. There would continue to be approximately 200,000 acres immediately surrounding Lake McDonald that would remain unaffected for grizzly bear habitat and travel. The incremental impact of the no action alternative would not substantially change the impacts that are already occurring.

Impacts of Alternative B – Preferred Action

Because there would be a range of management options under Alternative B, there would also be a range of impacts to grizzly bears, depending on which option is in effect and the number of properties where management activities occur.

The least beneficial scenario for grizzly bears would occur *under leasing, concessioner use, and NPS administrative use*. Human occupation of the properties could disturb or displace grizzly bears travelling or foraging within or near the project areas. Noise, artificial light at nighttime, and vehicle traffic would be the most likely sources of disturbance on the approximately 6.6 acres being returned to use.

Similar effects could occur during building *stabilization* option, rehabilitation, utility installation and upgrades, or structure demolition and removal. Displacement due to any of these activities could disrupt travel connectivity for bears along the lakeshore. However, developed areas along the lake, including the project areas, are under a Management Situation 3 designation, whereby the presence of grizzly bears is actively discouraged. Any observed incidence of a grizzly bear frequenting one of the properties would therefore be met with efforts to haze the bear away. For this reason, displacement would not result in any measurable changes current management and thus to the distribution of grizzly bears in the Lake McDonald area.

The primary concern with human occupation of the properties would be due to an increased potential for bears to become habituated to people, which would increase the risk of bears obtaining unnatural foods or being involved in a negative bear-human encounter. Grizzly bears use areas adjacent to the properties, which gives rise to the possibility of bears entering the project areas. The potential for conflicts with bears would be reduced by orientation on appropriate behavior in bear country and enforcement of storage regulations for attractants. Due to an increased potential for bear-human conflicts if the properties are leased to the public or otherwise occupied, the determination of effects to grizzly bears under section 7 of the Endangered Species Act would be “may affect, not likely to adversely affect”.

Any *removal* of structures under Alternative B could benefit grizzly bears due to the restoration of the properties to a natural condition and a reduced level of habitat fragmentation along the lakeshore. If all structures for which removal is a final option are removed, the amount developed area around the lake would decrease by approximately 4 acres (approximate acreage of Kelly’s Camp, Greve’s Tourist Camp, Johnson-Graham Cabin, Moberly Property, and Fox-Henderson properties). Despite the relatively small amount of reclaimed habitat, the absence of the structures would serve to slightly reduce the overall level of habitat fragmentation around the lakeshore, resulting in a landscape that is more cohesive for wildlife, with improved security against human-caused disturbances. As with the removal of structures under Alternative A, the removal of structures under Alternative B would not likely be of measurable benefit to grizzly bears because the sites would remain under Management Situation 3, where the presence of grizzlies is actively discouraged.

Under any scenario in Alternative B, there would not be a measurable change from existing conditions regarding increases in development or human activity that would result in greater adverse impacts to grizzly bears. The project area would continue to be managed as Management Situation 3, where the presence of grizzlies is discouraged and not be available for use as habitat. Surrounding the project area is Management Situation 1, where bears are not discouraged and grizzly bear habitat and travel corridor is unaffected. There would be no additional development footprint, and approximately 200,000 acres of backcountry immediately surrounding Lake McDonald would remain unaffected for grizzly bear habitat and travel.

Cumulative Impacts

Past, ongoing, and future actions that have impacted grizzly bears would be the same as described for Wildlife. The actions in Alternative B occur in areas under Management Designation 3 for grizzly bears. Past, ongoing and future impacts from human activity in the Lake McDonald area have increased the potential for grizzly bears in this area to become habituated to humans which would increase their risk of being involved in a negative bear-human encounter. The designation of developed areas surrounding Lake McDonald as Management Situation 3 since 1986 has effectively resulted in a loss of habitat to grizzly bears due to the bears being actively discouraged from frequenting these areas.

Under Alternative B, the direct and indirect effects of resumed use of the properties could result in a small increase in potential bear/human encounters and/or bear habituation in the project area. The stabilization or removal scenarios would result in a temporary increase in potential human encounters during stabilization or removal activities. When the effects of all scenarios under Alternative B are combined with other past, present, and reasonably foreseeable future impacts, the total cumulative impact on grizzly bears remains adverse but is no measurable change from existing conditions because the amount of development would not increase and human activity would not substantially change. The total cumulative impact is limited to the area

Lake McDonald Properties Management Plan / Environmental Assessment

under Management Situation 3. Surrounding the area is Management Situation 1, where bears are not discouraged and grizzly bear habitat and travel corridor is unaffected. There would be no additional development footprint and approximately 200,000 acres of backcountry immediately surrounding Lake McDonald would remain unaffected for grizzly bear habitat and travel.

Compliance Requirements, Consultation, and Coordination

Internal and External Scoping

Scoping is an early and open process to determine the breadth of environmental issues and alternatives to be addressed in an EA. Glacier National Park conducted both internal scoping with park staff and external scoping with the public and interested and affected groups and agencies. The scoping process helped identify potential issues, alternatives, resource impacts, and cumulative effects.

External, public scoping was initiated July 2010, with distribution of a scoping letter to inform the public of the proposal on how to manage the acquired properties and to generate input on the preparation of this EA. This initial scoping letter was mailed to the interested public, various federal and state agencies, and other interested parties on the park's mailing list. A press release was also sent to local news organizations. A public scoping meeting was held August 25, 2010 in the park's Community Building near West Glacier. Follow-up newsletters were sent to interested parties in May 2011 and August 2015.

Forty-three comments were received during public scoping. A diversity of concerns, issues, and proposed alternative actions were brought forward. All substantive comments have been considered in preparation of this EA.

Agency Consultation

Because the full scope of work is not yet known for specific structural preservation actions that may be necessary as a result of this plan, nor for the removal of structures from properties considered in this EA, additional agency consultation, would be required for those actions. The following discussion on agency consultation pertains to the findings of impacts associated with the management of the Lake McDonald properties as described in the Alternatives chapter of this EA.

The Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 et seq.) is designed to ensure that any action authorized, funded, or carried out by a federal agency does not jeopardize the continued existence of any endangered or threatened plant or animal species. If a federal action may affect threatened or endangered species, then consultation with the U.S. Fish and Wildlife Service is required. Based on the analysis, the National Park Service has determined that the proposed action in accordance with Section 7 **"may affect, but is not likely to adversely affect"** grizzly bears. In accordance with section 7 of the ESA, the park has initiated informal consultation with the USFWS; a biological assessment addressing effects to grizzly bears has been prepared and sent to the USFWS to obtain concurrence with the determination of effect.

The National Historic Preservation Act (NHPA) of 1966, as amended (54 U.S.C. 300101, et seq.) requires all federal agencies to consider effects from any federal action on historic properties eligible for or listed in the National Register of Historic Places (National Register of Historic Places) prior to initiating such actions. On June 3, 2010, Glacier National Park notified the Montana State Historic Preservation Officer (SHPO) of the project in accordance with 36 CFR 800. Follow up correspondence was sent in May 2011 and August 2015. The park also met annually with the SHPO on this project; most recently on July 14, 2017. Based on the analysis, the park's finding of effect under Section 106 of the NHPA is **"adverse effect"** because a historic property that contributes to the significance of a historic district would be demolished. It is suspected that inventory of the properties considered in this EA will identify intact archeological resources. Further inventory and determination of eligibility must be made prior to proceeding with any site-specific undertaking in accordance with NHPA Section 106. Formal SHPO consultation and review began in 2010 and is ongoing. As site specific plans are received for each of the properties, they will be shared with the SHPO in accordance with Section 106. The park is notifying the Advisory Council on Historic Preservation of the adverse effect finding for one of the properties. If the SHPO concurs with the park's finding of adverse effect, the park and the SHPO will enter into a Memorandum of Agreement (MOA) to avoid, minimize and mitigate the adverse effects on the property proposed for demolition.

Native American Consultation

Glacier National Park notified the Confederated Salish and Kootenai Tribes (CSKT) Tribal Historic Preservation Office (THPO) and Council members, and the Blackfeet THPO and Blackfeet Tribal Business Council on June 3, 2010, in accordance with 36 CFR800. Meetings were also held with the CSKT Tribal Historic Preservation Department on December 18, 2014, and April 10, 2017 and with John Murray, Blackfeet THPO, on March 12, 2015 and July 28, 2017. Neither the CSKT nor the Blackfeet Tribe raised concerns about the proposed action.

Environmental Assessment Review and Recipients

This EA is available for a 30-day public comment period. The public was notified of the EA availability through news releases to a number of state and local media outlets and a letter and or document to various agencies, tribes, groups businesses and individuals who have asked to receive notification or are otherwise required to get notification. The document will be available for review on the park's planning website at <http://parkplanning.nps.gov>. Copies of the EA will be provided to interested individuals upon request.

During the 30-day public review period, the public is encouraged to submit their written comments to the National Park Service, as described in the instructions at the beginning of this document. Following the close of the comment period, all public comments will be reviewed and considered prior to the release of a decision document. The National Park Service will respond to substantive comments received during the public comment period.

List of Preparers

Table 5 – List of Preparers

PREPARERS Name/Title	Contribution
Brad Blickhan, Lake McDonald Area Ranger	Park Operations
Chris Downs, Fisheries and Water Resources Biologist	Water and Wetland Resources
Lon Johnson, Cultural Resource Specialist (Retired)	Cultural Resources
Dawn LaFleur, Restoration Biologist	Vegetation, Soils, And Wetland Resources
Sierra Mandelko, Program Manager, Cultural Resource	Cultural Resources
Mary Riddle, Chief of Planning and Environmental Compliance	Team Lead, Technical Input; Reviewed/Edited EA.
Deirdre Shaw, Museum Curator	Historic Structures And Resources
Glen Smith, Park Engineer	Park Utilities
Sam Tamburro, Program Manager, Historic Preservation Programs Intermountain Regional Office, Cultural Resource Program	Historic Leasing Program
Artemisia Turiya, Environmental Protection Assistant (Resigned 2016)	Assisted with development of EA in Cooperation with Subject Matter Experts
Michael McGraw, Environmental Protection Assistant	Prepared EA in cooperation with subject matter experts
John Waller, Wildlife Biologist	Wildlife and Threatened And Endangered Species
OTHER CONTRIBUTORS Name/Title	CONTRIBUTION
Micah Alley, Lake McDonald District Ranger	Park Operations
Lisa Bate, Wildlife Biologist	Birds and Bats

Mark Biel, Natural Resources Program Manager	Wildlife
Kimberly Lindstrom, GIS Technician	Maps/Graphics
Richard Menicke, Geographer and GIS Coordinator	Data
Phil Wilson, Chief Science and Resources Management	Natural and Cultural Resources
Mary Wysong, Chief of Concession Management	Concessions Management

References

- Bailey, V. and F.M. Bailey. 1918. Wild animals of Glacier National Park: The mammals. USDI, National Park Service, Washington, DC.
- Berg, N. D., E. M. Gese, J. R. Squires, and L. M. Aubry. 2012. Influence of forest structure on abundance of lynx prey species in western Wyoming. *Journal of Wildlife Management* 76(6):1480-1488.
- Dutton, B.L., J. Hadlock, M. Arthur, D. Marrett, A. Goldin, and A. Zhu. 2001. Soils of Glacier National Park. Land and Water Consulting, Inc., Missoula, MT.
- Kendall, K.C., Stetz, J.B., Roon, D.A., Waits, L.P., Boulanger, J.B., Paetkau, D. 2008. Grizzly bear density in Glacier National Park, Montana. *Journal of Wildlife Management*. 72(8):1693-1705.
- Koehler, G. M., B. T. Maletzke, J. A. von Kienast, K. B. Aubry, R. B. Wielgus, and R. H. Naney. 2008. Habitat fragmentation and the persistence of lynx populations in Washington State. *Journal of Wildlife Management* 72:1518–1524.
- Mace, R. D. and Waller, J.S. 1997. Final report: Grizzly bear ecology in the swan mountains, Montana. Montana Fish, Wildlife & Parks, Helena, MT.
- Maletzke, B. T., G. M. Koehler, R. B. Wielgus, and K. B. Aubry. 2008. Habitat conditions associated with lynx hunting behavior during winter in Northern Washington. *Journal of Wildlife Management* 72:1473–1478.
- McKelvey, K. S., K. B. Aubry, and Y. K. Ortega. 2000. History and distribution of lynx in the contiguous United States. Pages 207–264 in L. F. Ruggiero, K. B. Aubry, S. W. Buskirk, G. M. Koehler, C. J. Krebs, K. S. McKelvey, and J. R. Squires, editors. *Ecology and conservation of lynx in the United States*. University Press of Colorado. Boulder, Colorado, USA.
- Montana Natural Heritage Program (MNHP). 2015. Species of concern data report. Montana Natural Heritage Program, Natural Resource Information System, Montana State Library, Helena, MT. Report date: February 25, 2015.
- Mowat, G., Poole, K.G., and O'Donoghue, M. 2000. Ecology of lynx in Northern Canada and Alaska. In Ruggiero, L. F., Aubry, K.B., Buskirk, S.W., Koehler, G.M., Krebs, K.J., McKelvey, and Squires, J.R. (Eds).
- NPS 1971. A Land Use Study – Apgar Area – Glacier National Park, Montana. Prepared for NPS by Theodore J. Wirth and Associates.
- NPS 2006. National Park Service *Management Policies*.
- _____. 2007. Roberts Cabin Removal Environmental Assessment and FONSI. Glacier National Park West Glacier, MT. US Department of Interior.
- _____. 2010a. Glacier National Park Bear Management Plan. Glacier National Park, West Glacier, MT.
- _____. 2010b. Glacier National Park Bear Management Guidelines. Glacier National Park, West Glacier, MT.
- _____. 2015. Lake McDonald Historical Inholdings Wetland Delineation Report. Glacier National Park, West Glacier, MT.

Lake McDonald Properties Management Plan / Environmental Assessment

Olson, L. E., Squires, J.R., DeCesare, M.J., and Kolbe, J.A. 2011. Den use and activity patterns in female Canada lynx (*Lynx canadensis*) in the Northern Rocky Mountains.” *Northwest Science* 85:455–462.

Ravage, Jessie. Recreation Camps on Lake McDonald Glacier National Park, Montana. National Register of Historic Places Multiple Property Documentation Form and National Register of Historic Places Registration Forms.

Staples, W. R. 1995. Lynx and coyote diet and habitat relationships during a low hare population on the Kenai Peninsula, Alaska. Thesis, University of Alaska, Fairbanks, Alaska, USA.

US Fish and Wildlife Service (USFWS). 1993. Grizzly Bear Recovery Plan. Missoula, MT.

US Forest Service (USFS). 1986. Interagency Grizzly Bear Management Guidelines. Missoula MT.