

# APPENDIX A

## MINIMUM REQUIREMENTS DECISION GUIDE



ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

# MINIMUM REQUIREMENTS DECISION GUIDE WORKBOOK

"...except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act..."

-- The Wilderness Act of 1964

**Project Title:** Quartz/Logging Lake Trout Suppression/Bull Trout Conservation

### MRDG STEP 1

*Determine if Administrative Action is Necessary*

#### Description of the Situation

*What is the situation that may prompt administrative action?*

Glacier National Park contains about one third of the natural lake core areas supporting migratory bull trout (native adfluvial populations) in the U.S., yet is losing these populations to invasive, non-native lake trout. Lake trout have invaded 9 of 12 accessible lakes on the west side of the park, threatening the persistence of bull trout populations. Lake trout displace bull trout when introduced, and data shows this occurring in park lakes. Without action, these ecologically unique bull trout populations face continued decline and functional extinction. Glacier National Park is critically important in range-wide conservation and recovery of Endangered Species Act (ESA) listed bull trout, and Logging and Quartz lakes have been identified as a high priority for conservation and recovery. The National Park Service (NPS) has statutory responsibilities under the ESA to assist in bull trout recovery. In response, the NPS and U.S. Geological Survey (USGS) initiated an experimental project in Quartz Lake to reduce or eliminate lake trout. Results are promising and underscore the urgency to continue suppression activities to prevent continued loss of remaining bull trout populations. Glacier National Park is proposing to continue lake trout removal efforts on Quartz Lake while initiating a new experimental lake trout removal and bull trout conservation project on Logging Lake.

### Options Outside of Wilderness

Can action be taken outside of wilderness that adequately addresses the situation?

YES

NO

EXPLAIN & COMPLETE STEP 1 OF THE MRDG

Explain:

The project lakes are located in proposed wilderness.

### Criteria for Determining Necessity

Is action necessary to meet any of the criteria below?

#### A. Valid Existing Rights or Special Provisions of Wilderness Legislation

Is action necessary to satisfy valid existing rights or a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that **requires** action? Cite law and section.

YES

NO

Explain:

## B. Requirements of Other Legislation

*Is action necessary to meet the requirements of other federal laws? Cite law and section.*

 YES NO

Explain:

The NPS has statutory responsibilities under the ESA to assist in bull trout recovery.

Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.)

"Section 7(a)(1) of the Act directs Federal agencies, in consultation with and with the assistance of the Secretary of the Interior or of Commerce, as appropriate, to utilize their authorities to further the purposes of the Act by carrying out conservation programs for listed species."

NPS Management Policies 4.4.4 states, "Exotic species will not be allowed to displace native species if displacement can be prevented."

NPS Organic Act and Glacier's enabling legislation require the preservation of native species in an unimpaired state for future generations.

## C. Wilderness Character

*Is action necessary to preserve one or more of the qualities of wilderness character including: Untrammeled, Undeveloped, Natural, Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation, or Unique Attributes or Other Features?*

UNTRAMMELED

 YES NO

Explain:

UNDEVELOPED

 YES NO

Explain:

NATURAL

 YES NO

Explain:

**The project seeks to preserve natural attributes of wilderness character in the project drainages.** If no action is taken, native fish populations will be compromised or permanently lost as a result of non-native fish predation and/or competition, which would adversely affect certain wilderness defining attributes of the Quartz and Logging drainages. The natural, historic condition of the native fish communities and the ecological integrity of both the Quartz and Logging drainages would become permanently altered as non-native fish species predominate over native fish. Such a profound alteration of these backcountry fisheries would degrade the unique ecological value of the Quartz and Logging drainages, where the threatened bull trout still resides at the top of the food chain.

## SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

 YES NO

Explain:

Recreational opportunities would be impacted if no action is taken, as changes to fish species composition and distribution would alter the dynamics of lake and stream fishing within both drainages. Over much of the fishing season, lake trout inhabit deep water, which is not readily accessible by anglers on the lake shore. Anglers would likely experience more difficulty in catching fish, and the quality of the recreational experience would diminish.

## OTHER FEATURES OF VALUE

 YES NO

Explain:

Without action, the unique scientific and educational value of the Quartz and Logging drainages would be diminished, as opportunities to study and monitor one of the last ecologically intact strongholds for bull trout would be lost.

The ecological integrity of the Quartz and Logging drainages would become permanently altered, threatening the areas' unique ecological value.

## Step 1 Decision

Is administrative action necessary in wilderness?

### Decision Criteria

- A. Existing Rights or Special Provisions
- B. Requirements of Other Legislation
- C. Wilderness Character
  - Untrammeled
  - Undeveloped
  - Natural
  - Outstanding Opportunities
  - Other Features of Value

### Summary Responses

Action IS NOT necessary to meet this criterion.

Action IS necessary to meet this criterion.

Action IS NOT necessary to meet this criterion.

Action IS NOT necessary to meet this criterion.

Action IS necessary to meet this criterion.

Action IS necessary to meet this criterion.

Action IS necessary to meet this criterion.

Is administrative action necessary in wilderness?

YES

**EXPLAIN & PROCEED TO STEP 2 OF THE MRDG**

NO

Explain:

Quartz and Logging lakes are located in proposed wilderness, therefore the project must occur in proposed wilderness. Action is necessary under statutory responsibilities of the ESA, the NPS Organic Act, Glacier National Park's enabling legislation, and NPS Management Policies. Action is also necessary to preserve the natural character, recreational fishing opportunities, and the unique scientific, ecological, and educational values of the Quartz and Logging drainages.

**Project Title:** Quartz/Logging Lake Trout Suppression/Bull Trout Conservation

**MRDG STEP 2**

Determine the Minimum Activity

**Other Direction**

Is there "special provisions" language in legislation (or other Congressional direction) that explicitly **allows** consideration of a use otherwise prohibited by Section 4(c)?

**AND/OR**

Has the issue been addressed in agency policy, management plans, species recovery plans, or agreements with other agencies or partners?

YES

**DESCRIBE DOCUMENTS & DIRECTION BELOW**

NO

Describe Documents & Direction:

According to the Action Plan to Conserve bull trout in Glacier National Park (developed by the U.S. Fish and Wildlife Service and Montana State University to conserve the long-term abundance, distribution, and genetic diversity of bull trout in the park), Quartz and Logging lakes are both considered "high priority" for bull trout conservation and restoration actions.

Conservation of the park's native wildlife is specifically mentioned in Glacier National Park's enabling legislation.

The NPS Organic Act charges the NPS with conserving natural resources in an unimpaired state for future generations.

The park's General Management Plan includes conservation of native species and management/control of non-native species.

## Components of the Action

What are the discrete components or phases of the action?

Component X	<i>Example: Transportation of personnel to the project site</i>
Component 1	Transportation of boat to the project areas
Component 2	Transportation of project personnel to the project site
Component 3	Remove lake trout
Component 4	Collect bull trout juveniles and eggs
Component 5	Stock bull trout back into lake
Component 6	Monitor results
Component 7	
Component 8	
Component 9	

### Proceed to the alternatives.

Refer to the [MRDG Instructions](#) regarding alternatives and the effects to each of the comparison criteria.

**Project Title:** Quartz/Logging Lake Trout Suppression/Bull Trout Conservation

## MRDG Step 2: Alternatives

**Alternative 1:** Remove lake trout using only non-motorized watercraft and equipment

### Description of the Alternative

*What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?*

NPS and USGS staff would remove lake trout using only non-motorized watercraft and equipment. A rowboat would be transported to each lake via livestock or on foot. Gill nets would be set from the rowboat by hand. Nets would be retrieved from the lake by hand by workers in the rowboat.

## Component Activities

*How will each of the components of the action be performed under this alternative?*

Component of the Action	Activity for this Alternative
X <i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1 Transportation of boat to the project areas	Boats would be packed in via livestock or on foot.
2 Transportation of project personnel to the project site	Personnel would hike to project sites.
3 Remove lake trout	Lake trout would be removed by hand from a rowboat.
4 Collect bull trout juveniles and eggs	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.
5 Stock bull trout back into lake	Bull trout would be transported back to the lake on foot or pack stock.
6 Monitor results	Results would be monitored by hand.
7	
8	
9	

## Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

### UNTRAMMELED

Component Activity for this Alternative	Positive	Negative	No Effect
X <i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1 Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2 Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Results would be monitored by hand.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals	0	3	NE
<b>Untrammed Total Rating</b>	<b>-3</b>		

Explain:

Human manipulation of ecological processes would affect the untrammed character of recommended wilderness.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Results would be monitored by hand.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>0</b>	<b>0</b>	<b>NE</b>
<b>Undeveloped Total Rating</b>		<b>0</b>		

Explain:

There would be no effects to the undeveloped character of the area. The patrol cabins the crew would use for the project already exist.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by hand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>0</b>	<b>4</b>	<b>NE</b>
<b>Natural Total Rating</b>		<b>-4</b>		

Explain:

Removing lake trout and taking measures to protect bull trout would be undertaken to protect native fish communities and the natural condition of recommended wilderness. However, removing lake trout and monitoring the results by hand from a rowboat would be extremely inefficient. We would be unable to remove a sufficient number of lake trout to reduce the population in a timely manner. Mortality of ESA listed bull trout would also be higher since we would need to row the boat from one net to another which would result in longer net "soak" times. Transporting live juvenile bull trout and/or eggs via livestock could result in higher mortality of ESA listed bull trout. Insufficient lake trout removal and increased mortality to bull trout would diminish the natural character of recommended wilderness.

**SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION**

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Personnel would hike to project sites.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	Lake trout would be removed by hand from a rowboat.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Results would be monitored by hand.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>2</b>	<b>3</b>	<b>NE</b>
<b>Solitude or Primitive &amp; Unconfined Recreation Total Rating</b>		<b>-1</b>		

Explain:

Crews would be on site for 5-7 days per week, which may impact the solitude of visitors. If enough lake trout were removed, recreational fishing opportunities could be preserved. But removing lake trout by hand would be extremely inefficient and would reduce the effectiveness of the project. Recreational fishing opportunities would likely be compromised.

OTHER FEATURES OF VALUE

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by hand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>0</b>	<b>4</b>	<b>NE</b>
<b>Other Features of Value Total Rating</b>		<b>-4</b>		

Explain:

Removing lake trout and taking measures to protect bull trout could preserve the unique ecological, educational, and scientific value of recommended wilderness. However, removing lake trout and monitoring the results by hand from a rowboat would be extremely inefficient. We would be unable to remove a sufficient number of lake trout to reduce the population in a timely manner. Mortality of ESA listed bull trout would also be higher since we would need to row the boat from one net to another which would result in longer net "soak" times. Transporting live juvenile bull trout and/or eggs via livestock could result in higher mortality of ESA listed bull trout. Insufficient lake trout removal and increased mortality to bull trout would significantly reduce the effectiveness of the project. Lake trout populations would likely persist and bull trout and other native fish would be compromised, thereby compromising the unique ecological, educational, and scientific values of the areas.

**Other Criteria**

*What is the effect of each component activity on other comparison criteria? What mitigation measures will be taken?*

**MAINTAINING TRADITIONAL SKILLS**

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	Boats would be packed in via livestock or on foot.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Bull trout would be transported back to the lake on foot or pack stock.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by hand.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>3</b>	<b>0</b>	<b>NE</b>
<b>Maintaining Traditional Skills Total Rating</b>		<b>3</b>		

Explain:

The use of livestock would require the use of traditional packing skills.

**SPECIAL PROVISIONS**

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Results would be monitored by hand.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>0</b>	<b>0</b>	<b>NE</b>
<b>Special Provisions Total Rating</b>		<b>0</b>		

Explain:

The project does not impact Special Provisions.

## ECONOMICS & TIME CONSTRAINTS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by hand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>0</b>	<b>5</b>	<b>NE</b>
<b>Economics &amp; Time Constraints Total Rating</b>		<b>-5</b>		

Explain:

Using only non-motorized watercraft and equipment would make the project so inefficient from an economic and time constraints perspective that it would not be possible to accomplish project objectives. We would be unable to remove a sufficient number of lake trout to reduce the population in a timely manner. In addition, mortality of ESA listed bull trout would be higher under this scenario since we would need to row the boat from one net to another which would result in longer net "soak" times. Transporting live juvenile bull trout and/or eggs via livestock would result in higher mortality of ESA listed bull trout than would occur in a short helicopter ride.

## Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What mitigation measures will be taken?

### SAFETY OF VISITORS & WORKERS

Component Activity for this Alternative	Positive	Negative	No Effect
X <i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1 Boats would be packed in via livestock or on foot.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Personnel would hike to project sites.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Lake trout would be removed by hand from a rowboat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 Bull trout juveniles and eggs would be collected by hand and transported on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5 Bull trout would be transported back to the lake on foot or pack stock.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6 Results would be monitored by hand.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals	0	3	NE
<b>Safety of Visitors &amp; Workers Total Rating</b>	<b>-3</b>		

Explain:

The use of only non-motorized equipment would put the crew at increased risk of serious injury or death. Logging Lake is about 6 miles long and at times this type of work occurs at night in winter weather conditions. Weather can be severe with high winds on both Quartz and Logging Lakes. Should injury occur or someone fall overboard into very cold water in freezing weather, it is imperative that workers be able to reach shelter rapidly. A rowboat does not meet this need. Pulling heavy nets into the boat by hand in freezing conditions could result in a slip and fall accident, or in back injury. Transporting a boat via livestock or on foot would also increase the risk of injury to crews and stock animals.

## Summary Ratings for Alternative 1

Wilderness Character	
Untrammeled	-3
Undeveloped	0
Natural	-4
Solitude or Primitive & Unconfined Recreation	-1
Other Features of Value	-4
<b>Wilderness Character Summary Rating</b>	<b>-12</b>

Other Criteria	
Maintaining Traditional Skills	3
Special Provisions	0
Economics & Time Constraints	-5
<b>Other Criteria Summary Rating</b>	<b>-2</b>

Safety	
Safety of Visitors & Workers	-3
<b>Safety Summary Rating</b>	<b>-3</b>

**Project Title:** Quartz/Logging Lake Trout Suppression/Bull Trout Conservation

## MRDG Step 2: Alternatives

**Alternative 2:** Remove lake trout using motorized equipment on Logging and Quartz Lakes

### Description of the Alternative

*What are the details of this alternative? When, where, and how will the action occur? What mitigation measures will be taken?*

Lake trout would be removed by gill netting. Nets would be set from a motorboat. An electric net lifter, powered by a small generator, would be used to pull the nets from the water. This is a similar approach as is being employed on Yellowstone Lake by the NPS. Helicopters would be used for boat delivery and maintenance, and possibly for bull trout translocation to reduce the risk of losing the eggs or harming the young fish. We anticipate that up to four helicopter flights per year (approximately) to Logging Lake and possibly one flight per year to Quartz Lake could be required for the first several years of the project. The number of annual flights would be expected to decline over time as the translocation phase is completed.

#### Mitigation:

The project would occur during the lower visitation season (May-June, Sept-Oct) so it will impact fewer visitors' wilderness experience.

We will use 4 stroke outboard motors and select the generator model, in part, based on sound performance which will reduce overall project noise.

Flat-wake speed would be used within 300 yards of the patrol cabins and campgrounds.

Helicopter flights for the project would be included in the park's restricted annual administrative flight quota of approximately 50 administrative flights. The flights would therefore not increase the park's overall annual number of administrative flights.

Timing and location of administrative helicopter flights would consider impacts on wildlife species.

Signs informing visitors of the motorized activity on the lakes and providing information about the suppression efforts would be posted at the trailheads to Quartz and Logging Lakes as well as the backcountry permit office.

## Component Activities

*How will each of the components of the action be performed under this alternative?*

Component of the Action	Activity for this Alternative
X <i>Example: Transportation of personnel to the project site</i>	<i>Example: Personnel will travel by horseback</i>
1 Transportation of boat to the project areas	Boats would be flown in by helicopter.
2 Transportation of project personnel to the project site	Personnel would hike to project site.
3 Remove lake trout	Lake trout would be removed using motorized boat and net lifter.
4 Collect bull trout juveniles and eggs	Bull trout juveniles/eggs may need to be transported via helicopter.
5 Stock bull trout back into lake	Bull trout may need to be transported back to the lake via helicopter.
6 Monitor results	Results would be monitored by motorboat.
7	
8	
9	

## Wilderness Character

What is the effect of each component activity on the qualities of wilderness character? What mitigation measures will be taken?

### UNTRAMMELED

Component Activity for this Alternative	Positive	Negative	No Effect
X <i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1 Boats would be flown in by helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Personnel would hike to project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Lake trout would be removed using motorized boat and net lifter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4 Bull trout juveniles/eggs may need to be transported via helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 Bull trout may need to be transported back to the lake via helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Results would be monitored by motorboat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals	0	5	NE
<b>Untrammeled Total Rating</b>	<b>-5</b>		

Explain:

Human manipulation of ecological processes and the use of motorized equipment would negatively affect the untrammeled quality of recommended wilderness in the project areas.

UNDEVELOPED

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be flown in by helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Personnel would hike to project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed using motorized boat and net lifter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles/eggs may need to be transported via helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bull trout may need to be transported back to the lake via helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by motorboat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>0</b>	<b>5</b>	<b>NE</b>
<b>Undeveloped Total Rating</b>		<b>-5</b>		

Explain:

The project would not involve any temporary or permanent developments or structures, but the use of motorized equipment would temporarily affect the undeveloped quality of the area.

NATURAL

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be flown in by helicopter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Personnel would hike to project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed using motorized boat and net lifter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles/eggs may need to be transported via helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Bull trout may need to be transported back to the lake via helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by motorboat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>4</b>	<b>0</b>	<b>NE</b>
<b>Natural Total Rating</b>		<b>4</b>		

Explain:

Removing lake trout and taking measures to protect bull trout would protect native fish communities and the long-term natural condition of recommended wilderness. The use of motorized equipment could have some temporary, intermittent negative impacts to the natural condition of the areas by masking important biological sounds and temporarily displacing animals. But the use of motorized equipment would greatly improve the effectiveness of the project, and the long-term benefits to the natural condition would outweigh the short-term negative impacts. Impacts to wildlife from helicopter flights would be mitigated by consideration of the timing and location of the flights. The project would not be successful without the use of motorized tools; failure to effectively suppress lake trout and conserve bull trout would have severe, long-term ecological consequences for both drainages.

## SOLITUDE OR PRIMITIVE & UNCONFINED RECREATION

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be flown in by helicopter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Personnel would hike to project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed using motorized boat and net lifter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles/eggs may need to be transported via helicopter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bull trout may need to be transported back to the lake via helicopter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by motorboat.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>6</b>	<b>6</b>	<b>NE</b>
<b>Solitude or Primitive &amp; Unconfined Recreation Total Rating</b>		<b>0</b>		

Explain:

The use of motorized equipment could disrupt opportunities for solitude, but such disruptions would be intermittent and temporary. The successful suppression of lake trout and conservation of native fish communities would preserve recreational fishing opportunities.

**OTHER FEATURES OF VALUE**

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be flown in by helicopter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2	Personnel would hike to project site.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Lake trout would be removed using motorized boat and net lifter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles/eggs may need to be transported via helicopter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5	Bull trout may need to be transported back to the lake via helicopter.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by motorboat.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>6</b>	<b>5</b>	<b>NE</b>
<b>Other Features of Value Total Rating</b>		<b>1</b>		

Explain:

The use of motorized equipment would diminish unique scenic values, but the suppression of lake trout and the conservation of native fish populations, including bull trout, would protect unique ecological, scientific, and educational values.

**Other Criteria**

*What is the effect of each component activity on other comparison criteria? What mitigation measures will be taken?*

**MAINTAINING TRADITIONAL SKILLS**

Component Activity for this Alternative	Positive	Negative	No Effect
X <i>Example: Personnel will travel by horseback</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1 Boats would be flown in by helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2 Personnel would hike to project site.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Lake trout would be removed using motorized boat and net lifter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4 Bull trout juveniles/eggs may need to be transported via helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5 Bull trout may need to be transported back to the lake via helicopter.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6 Results would be monitored by motorboat.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>	<b>1</b>	<b>3</b>	<b>NE</b>
<b>Maintaining Traditional Skills Total Rating</b>	<b>-2</b>		

Explain:

Using helicopters would not maintain proficiency in traditional backcountry skills, especially livestock packing.

**SPECIAL PROVISIONS**

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be flown in by helicopter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	Personnel would hike to project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed using motorized boat and net lifter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Bull trout juveniles/eggs may need to be transported via helicopter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	Bull trout may need to be transported back to the lake via helicopter.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6	Results would be monitored by motorboat.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Totals</b>		<b>0</b>	<b>0</b>	<b>NE</b>
<b>Special Provisions Total Rating</b>		<b>0</b>		

Explain:

This alternative would not impact special provisions.

## ECONOMICS & TIME CONSTRAINTS

Component Activity for this Alternative		Positive	Negative	No Effect
X	<i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1	Boats would be flown in by helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Personnel would hike to project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Lake trout would be removed using motorized boat and net lifter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Bull trout juveniles/eggs may need to be transported via helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Bull trout may need to be transported back to the lake via helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Results would be monitored by motorboat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Totals</b>		<b>5</b>	<b>0</b>	<b>NE</b>
<b>Economics &amp; Time Constraints Total Rating</b>		<b>5</b>		

Explain:

Project goals would be achieved due to timely implementation of proposed actions through use of motorized equipment. Efficiency and effectiveness of the project would be maximized due to reduced travel times, as well as more rapid deployment and retrieval of nets. The project cannot be successfully implemented without motorized equipment.

## Safety of Visitors & Workers

What is the effect of each component activity on the safety of visitors and workers? What mitigation measures will be taken?

### SAFETY OF VISITORS & WORKERS

Component Activity for this Alternative	Positive	Negative	No Effect
X <i>Example: Personnel will travel by horseback</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1 Boats would be flown in by helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Personnel would hike to project site.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3 Lake trout would be removed using motorized boat and net lifter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 Bull trout juveniles/eggs may need to be transported via helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 Bull trout may need to be transported back to the lake via helicopter.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Results would be monitored by motorboat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Totals	5	0	NE
<b>Safety of Visitors &amp; Workers Total Rating</b>	<b>5</b>		

Explain:

Using motorized equipment would make implementing the project far safer. The motorboat would permit personnel to respond to emergency situations more rapidly (i.e. get out of the weather, transport after an injury, retrieve a person overboard and get back to shelter rapidly). Work often occurs at night under winter weather conditions. Considering the backcountry nature of the work and the requirement to be able to handle emergency situations, a motorboat is a much safer work platform. Retrieving the gill nets with a mechanized net lifter will significantly reduce the risk of a slip and fall injury, back injury, or someone falling into the water.

## Summary Ratings for Alternative 2

Wilderness Character	
Untrammeled	-5
Undeveloped	-5
Natural	4
Solitude or Primitive & Unconfined Recreation	0
Other Features of Value	1
<b>Wilderness Character Summary Rating</b>	<b>-5</b>

Other Criteria	
Maintaining Traditional Skills	-2
Special Provisions	0
Economics & Time Constraints	5
<b>Other Criteria Summary Rating</b>	<b>3</b>

Safety	
Safety of Visitors & Workers	5
<b>Safety Summary Rating</b>	<b>5</b>

**Project Title:** Quartz/Logging Lake Trout Suppression/Bull Trout Conservation

### MRDG Step 2: Alternative Comparison

**Alternative 1:** Remove lake trout using only non-motorized watercraft and equipment

**Alternative 2:** Remove lake trout using motorized equipment on Logging and Quartz Lakes

**Alternative 3:**

**Alternative 4:**

Wilderness Character	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Untrammeled	0	3	0	5	0	0	0	0
Undeveloped	0	0	0	5	0	0	0	0
Natural	0	4	4	0	0	0	0	0
Solitude or Primitive & Unconfined Rec.	2	3	6	6	0	0	0	0
Other Features of Value	0	4	6	5	0	0	0	0
Totals	2	14	16	21	0	0	0	0
<b>Wilderness Character Rating</b>	-12		-5		0		0	

Other Criteria	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Maintaining Traditional Skills	3	0	1	3	0	0	0	0
Special Provisions	0	0	0	0	0	0	0	0
Economics & Time Constraints	0	5	5	0	0	0	0	0
Totals	3	5	6	3	0	0	0	0
<b>Other Criteria Rating</b>	-2		3		0		0	

Safety	Alternative 1		Alternative 2		Alternative 3		Alternative 4	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Safety of Visitors & Workers	0	3	5	0	0	0	0	0
<b>Safety Rating</b>	-3		5		0		0	

**Project Title:** Quartz/Logging Lake Trout Suppression/Bull Trout Conservation

### MRDG Step 2: Decision

Refer to the [MRDG Instructions](#) before identifying the selected alternative and explaining the rationale for the selection.

#### Selected Alternative

- |                |                                     |   |
|----------------|-------------------------------------|---|
| Alternative 1: | <input type="checkbox"/>            | Remove lake trout using only non-motorized watercraft and equipment     |
| Alternative 2: | <input checked="" type="checkbox"/> | Remove lake trout using motorized equipment on Logging and Quartz Lakes |
| Alternative 3: | <input type="checkbox"/>            |   |
| Alternative 4: | <input type="checkbox"/>            |   |
| Alternative 5: | <input type="checkbox"/>            |   |
| Alternative 6: | <input type="checkbox"/>            |   |
| Alternative 7: | <input type="checkbox"/>            |   |
| Alternative 8: | <input type="checkbox"/>            |   |

#### Explain Rationale for Selection:

The project could not be accomplished using only non-motorized watercraft and equipment for the following reasons:

**Personnel safety:** Lake temperatures are very cold. Work often occurs in freezing temperatures at night in inclement weather. Hypothermia would be likely if crews were attempting to net using a canoe or rowboat and it tipped and they went into the water. They could not rapidly respond to hypothermic conditions or to a personnel injury during the netting operation with non-motorized watercraft. There would be little or no opportunity for timely rescue from an accident with a non-motorized watercraft. Lifting thousands of meters of wet, heavy gill nets each week from the water by hand requires bending at the waist over the side of a boat for long periods of time in icy/slippery deck conditions and has a high potential for slips, falls and back injury. Workers would also be at risk of falling from the boat while attempting to pull the nets in by hand.

**Ability to meet project goals:** The project could not be completed using only non-motorized equipment. The lakes are large and have the potential to be windy with large waves. Travel times to net sites using a large row boat would limit the amount of net that could be set each day to the point where the project could not remove enough lake trout fast enough to reduce the population. At the same time, mortality would be higher for other non-target fish species, such as ESA listed bull trout, because they would be in the nets longer due to the additional time required to reach each net and pull the nets into the boat by hand.

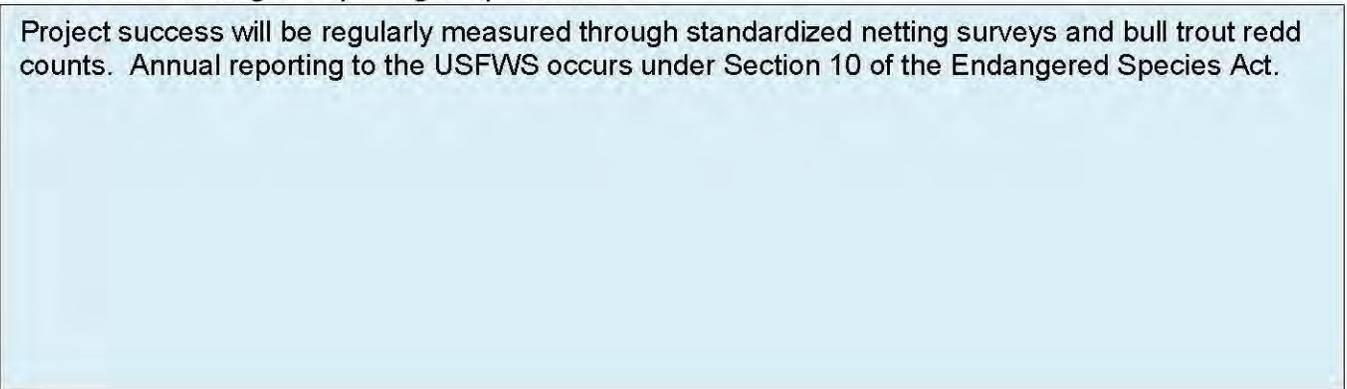
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**Explain Rationale for Selection, Continued:**



**Describe Monitoring & Reporting Requirements:**

Project success will be regularly measured through standardized netting surveys and bull trout redd counts. Annual reporting to the USFWS occurs under Section 10 of the Endangered Species Act.



## Approval of Prohibited Uses

Which of the prohibited uses found in Section 4(c) of the Wilderness Act are approved in the selected alternative and for what quantity?

<u>Prohibited Use</u>	<u>Quantity</u>
<input checked="" type="checkbox"/> Mechanical Transport	up to 5 helicopter flights per year may be necessary
<input checked="" type="checkbox"/> Motorized Equipment	motorboat, generator, net lifter in use May-June, Sept-Oct
<input type="checkbox"/> Motor Vehicles	
<input checked="" type="checkbox"/> Motorboats	in use May-June, Sept-Oct
<input checked="" type="checkbox"/> Landing of Aircraft	Equipment would likely be delivered via long line
<input type="checkbox"/> Temporary Roads	
<input type="checkbox"/> Structures	
<input type="checkbox"/> Installations	

Record and report any authorizations of Wilderness Act Section 4(c) prohibited uses according to agency policies or guidance.

Refer to agency policies for the following review and decision authorities:

Prepared	Name		Position	
	Chris Downs		Fisheries Biologist	
	Signature		Date	
Recommended	Name		Position	
	Kyle Johnson		Wilderness Specialist	
	Signature		Date	
Recommended	Name		Position	
	Mark Foust		Chief Ranger	
	Signature		Date	
Approved	Name		Position	
	Kym A. Hall		Deputy Superintendent	
	Signature		Date	