



ARTHUR CARHART NATIONAL WILDERNESS TRAINING CENTER

MINIMUM REQUIREMENTS DECISION GUIDE

INSTRUCTIONS

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

– the Wilderness Act, 1964

Introduction

The Minimum Requirements Decision Guide (MRDG) is designed to assist wilderness managers with completing a Minimum Requirements Analysis for wilderness projects. These instructions refer to completing the MRDG [Workbook](#) in Excel. A Word format of the MRDG is available. These instructions will take some interpretation on your part to apply to the Word format.

More information about the background of the MRDG and its appropriate uses can be found in the [Overview](#). Please also refer to your agency policies and other guidance in the [Agency Guidelines](#) for more direction on how and when to conduct a Minimum Requirements Analysis.

Some agencies use this format to assist in making decisions in wilderness other than employing one of the prohibited uses listed in Section 4(c) of the Wilderness Act. Check your own agency's policy. If you are using this form for one of those purposes, think of interpreting the first question in Step 2 (*“Is there “special provisions” language in legislation (or other Congressional direction) that explicitly allows consideration of a use otherwise prohibited by Section 4(c)?”*) with: *“Is there “special provisions” language in legislation (or other Congressional direction) that explicitly allows consideration of an action that would otherwise degrade wilderness character?”*

Use of this document assumes familiarity with the Wilderness Act, other relevant legislation, and agency policy. For training in the Wilderness Act or on conducting a Minimum Requirements Analysis, go to the [e-learning course listing](#) for the Arthur Carhart National Wilderness Training Center.

The MRDG Overview, Instructions, Workbook, and Agency Guidelines are found at: www.wilderness.net/mrdg/.

The MRDG Excel Workbook Form

The instructions which follow will take you through, step-by-step, filling out the FY2014 MRDG. Using a spreadsheet instead of a word processing document may take some getting used to if you are familiar with Word versions of the MRDG. But the spreadsheet format has several distinct advantages:

1. Linking the forms allows information that is repeated to be entered only once
2. Quantitative analyses of positive and negative effects are automatically carried forward into summaries and comparisons
3. The structure of the form helps emphasize breaking down an administrative action into discrete components or phases – an essential stage in determining which combination of tools or methods actually constitutes the “minimum necessary.”

As you use the MRDG workbook form, boxes where you can enter text or check boxes that you can toggle appear in light blue. All other portions of the form are either fixed or automatically populated from text or data you have entered elsewhere. **Some versions of Excel contain a glitch that makes the check boxes on the worksheets disappear. Save the document, close Excel, and reopen the document to restore the function.**

The text boxes in the form function like a word processing document in that you can cut, paste, and format as you would in a word processing document, and can copy and paste to and from other word documents (such as a NEPA analysis). **However, the text boxes in the MRDG Workbook are fixed in size – that is, if you need more space than what is available on the form, you will have to attach a Word document to your MRDG.** Simply note in the corresponding MRDG text box that you have done so.

The MRDG Workbook consists of several sheets, including a sheet for each of up to eight alternatives. Of course, you may not have that many alternatives, so if you need to print your MRDG, **do not choose “Print Entire Workbook.”** Instead, open each worksheet you have used and print each using “Print Active Sheets.”

As you progress through the following instructions, direction on how to use the Workbook form is in light blue.

WORKBOOK INSTRUCTIONS

The MRDG is derived from Section 4(c) of the Wilderness Act and involves two steps. Step 1 determines whether action is **necessary**. If action is necessary, then Step 2 provides guidance for determining the **minimum** activity.

Open the worksheet named **Step 1 Determination**. Enter your Project Title in the text box provided.

Step 1: Determine if any administrative action is necessary

Description of the Situation:

In the text box provided, describe the problem or situation that prompts a possible need for action. Include supporting information (i.e. cause, threat, existing use, etc.) as needed.

The description should explain, in general terms, the situation that may require some action -- but **should not** assume action will be taken **nor** identify a specific method or tool unless it is necessary to understand the situation. The description should not attempt to justify the use of motorized equipment or mechanical transport, or the placement of a structure, facility, or temporary road. This description of the existing situation helps determine the Step 1 analysis whether any action is necessary in wilderness -- and sometimes the appropriate administrative response may be no action at all. If action is needed, the specific actions, methods, tools, etc. will be identified and evaluated in Step 2.

The table below provides correct and incorrect examples describing a situation or project. **Minimal descriptions are provided here for example purposes only. Actual descriptions should provide all relevant background information.**

Correct examples of description	Incorrect examples of description
An administrative cabin is deteriorating and there is a proposal to reconstruct the structure. The cabin is located six miles inside the wilderness and is currently used by trail crews and wilderness rangers.	Motorized tools will be needed to restore an administrative cabin
A request is received for access into a valid, existing mining claim. The request includes building a temporary road for 2.3 miles to allow access for an excavator.	The only feasible access to the mining claim would require building a temporary road.
A windstorm has blown down trees, blocking maintained trails. Approximately 47 miles of trail are currently blocked limiting access to 32% of the wilderness.	Chainsaws would be the quickest tool for clearing the downed trees.
There is a lack of information available to biologists about a wildlife species that has the potential for listing under the ESA.	A helicopter should be used to survey the population because all other methods would take too long.

Fire has altered approximately 600 acres of wildlife habitat important for elk winter range. Elk winter range has been severely limited by development outside the wilderness causing a decline in populations.	Re-seeding of the burned area using a helicopter is needed to maintain wildlife habitat. Seeding using hand crews is not possible due to limited budgets.
Correct examples of description	Incorrect examples of description
A trail bridge has washed out. The bridge serves a main line trail used by visitors and outfitter-guides to access approximately 20% of the wilderness. Alternatives to access this portion of the wilderness would add 18 miles to the travel route.	There is a need to replace the washed out trail bridge. A helicopter is needed to fly in a replacement bridge and would be the most cost effective and safest tool for the job.
Riverbank erosion is destabilizing a pioneer cabin listed on the National Historic Register. The erosion has accelerated due to a change in river flow due to fallen beetle killed trees.	Construction of rock gabions has been proposed to stop erosion.
There is a lack of information on air quality in the Class I wilderness airshed. The effects of poor air quality are suspected as a cause for the decline of a threatened plant species.	An air quality monitoring station is needed for monitoring and must be installed in the wilderness.
Invasive plant species are present in the wilderness along the Clear Creek, Blue Lake, and Windy Pass Trails. The trails are the most popular access routes to the lake basin area of the wilderness and are used by both recreation livestock users and hikers.	A motorized herbicide sprayer is the most efficient tool to treat invasive plants.

Options Outside of Wilderness:

Check the box, "Yes" or "No," that answers the question: *Can action be taken outside of wilderness that adequately addresses the situation?* Explain your answer in the text box provided.

Describe any options outside of wilderness and identify whether (and explain why or why not) it is possible for those options to adequately address the situation described above.

Examples of administrative action that might be explored outside wilderness include:

- Putting up nest boxes or conducting wildlife surveys outside wilderness boundaries.
- Surveying visitors about user conflicts at the trailhead or visitor center, rather than on the trail or at their wilderness campsite.
- Locating trail destination and distance signs at trailheads outside wilderness (unless already determined by agency policy).
- Locating monitoring or other administrative structures outside wilderness.

Next, answer each of the following questions with "Yes" or "No," and explain your answer in the text box provided. If one of the questions is not applicable to the proposal, answer "No" and explain why it is not applicable.

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?

If there is special provision language, whether in the Wilderness Act of 1964 or subsequent designating legislation, consideration of some actions may be required. Often these provisions are associated with: maintenance of dams and water storage facilities; control of fire, insects, or disease; access to private lands; or the use of monitoring equipment or communications installations.

In order to protect human health and safety, if an agency has already decided to take an action which is allowed (though not necessarily required) by the Wilderness Act or other legislation, the "test" of necessity is met here. For example, an agency has decided to keep a pre-designation airstrip in the wilderness that the law says "may" receive continued use. For human health and safety, it is necessary to take action to maintain that airstrip. (The minimum necessary methods, however, are still to be determined in Step 2 of the MRDG.)

Identify any valid existing rights or special provision in wilderness legislation and cite the law and section; or if there are none, state that none exist. Examine the special provision and describe whether the law says that a specific action "shall" be taken or that an action "may" be taken. Remember that legislative history (i.e. Congressional committee reports) is useful background information that should be considered but it does not have the same requirement for implementation as direction contained in law. Examples of special provisions in other legislation include:

- Existence of public use cabins and subsistence use and access in wilderness (Alaska National Interest Lands Conservation Act of 1980, P.L. 96-487, Sec. 1315(c)).
- Use of motorboats of ten horsepower or less in the Okefenokee Wilderness (Okefenokee Wilderness Act of 1974, P.L. 93-430, Sec.2).

Valid existing rights are granted only by provisions in law. These may include rights associated with mining, water, rights-of-way, or access to non-federal lands inside wilderness. An example is a claimant who made a discovery of a valuable mineral deposit before the date of withdrawal (specified in the law that designated the area) and has complied with validity and filing requirements. The claimant has a right to access and extract the mineral deposit but this right does not invalidate the need to determine the minimum requirement before any of the prohibited uses found in Section 4(c) of the Wilderness Act are approved.

Some valid existing rights or provisions of special legislation may be satisfied by an option outside wilderness. Such possibilities would likely reduce impacts to the wilderness resource and character and should be explored.

B. Requirements of Other Legislation

Is action necessary to meet the requirements of other federal laws?

Federal laws that do not directly address wilderness (such as the Endangered Species Act or National Historic Preservation Act) may influence the need for actions in wilderness. In some instances, the administrator is asked to satisfy the requirements of multiple laws. For example:

- Recovery of an endangered species dependent on wilderness ecosystems (Endangered Species Act).
- Management of a site listed on the National Register of Historic Places (National Historic Preservation Act).

Identify and cite applicable provisions of other laws and describe any conflicts between the provisions of other laws and the Wilderness Act or enabling legislation for your area. If no other laws are applicable, state that there are no requirements.

Apparent conflicts between the Wilderness Act and other legislation may require innovative approaches and not all apparent conflicts are genuine. No law over-rides another law (unless specifically stated in the superseding law). The requirements of all applicable laws must be met.

C. Wilderness Character

Is action necessary to preserve one or more of the qualities of wilderness character?

Untrammeled

Undeveloped

Natural

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation

Other Features of Value

Answer “Yes” or “No” (and explain) for each quality separately.

The primary mandate of the Wilderness Act is to preserve wilderness character. Section 2(a) directs us to manage wilderness areas:

“...in such manner as will leave them unimpaired for future use as wilderness, and so as to provide for the protection of these areas, ***the preservation of their wilderness character...***” (emphasis added).

Similar direction is repeated in Section 4(b):

“Except as otherwise provided in this Act, ***each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area*** and shall so administer such area for such other purposes for which it may have been established as also ***to preserve its wilderness character***” (emphasis added).

Five qualities of wilderness character are mentioned in the definition of “wilderness” found in Section 2(c) of the Wilderness Act. Keep in mind that **at this point you are only deciding if action is necessary to preserve one or more of these qualities**. The impacts, both positive and negative, to all the qualities from any one alternative will be analyzed in Step 2 of the MRDG. However, preserving an area’s ideal wilderness character, as described in the Section 2(c) definition, may mean improving upon the current condition of the wilderness. Note that old versions of the MRDG also called for deciding if action is necessary to protect one or more of the public purposes listed in Section 4(b). However, since any action necessary to preserve wilderness character would also protect a public purpose, this determination was eliminated as redundant.

Untrammeled – In wilderness, the "earth and its community of life" are essentially unhindered and free from modern human control or manipulation, "in contrast with those areas where man and his own works dominate the landscape." This quality is important because it helps insure that wilderness is managed with the utmost humility and restraint, respecting the autonomy of nature that allows a place to be wild and free. However, it is unlikely that action is necessary to preserve this quality, unless the decision is to **stop** taking action. In fact, to preserve this quality it may be necessary to cease actions that manipulate "the earth and its community of life" that are not needed to preserve some other quality of wilderness character.

Undeveloped – Wilderness retains its "primeval character and influence," and is essentially "without permanent improvements" or modern human occupation. Preserving this quality keeps areas free from "expanding settlement and growing mechanization" and "with the imprint of man's work substantially unnoticeable" as required by the Wilderness Act. To preserve this quality, it may be necessary to remove existing structures or installations which are unnecessary for the administration of the area as wilderness or otherwise are not features of the area's wilderness character.

Natural – A wilderness area is to be "protected and managed so as to preserve its natural conditions." Wilderness ecological systems are substantially free from the effects of modern civilization. Preserving this quality ensures that indigenous species, patterns and ecological processes are protected and allows us to understand and learn from natural features. To preserve this quality, it may be necessary to take action to correct unnatural conditions even if they were present at the time of designation.

Outstanding Opportunities for Solitude or Primitive and Unconfined Recreation – The Wilderness Act defines wilderness as having "outstanding opportunities for solitude or a primitive and unconfined type of recreation." This quality is about the *opportunity* for people to experience wilderness. The opportunities provided by wilderness include the chance to experience primitive recreation, natural sights and sounds, solitude, freedom, risk, the physical and mental challenges of self-discovery and self-reliance, and to use traditional skills free from the constraints of modern culture.

Look at each sub-part of this quality (solitude, primitive recreation, unconfined recreation) to determine if there is a need for action. To preserve this quality, it may be necessary to take action to improve solitude, primitive recreation, or unconfined recreation beyond the conditions present at the time of designation.

Other Features of Value -- In addition to the four qualities of wilderness character listed above, which are required of every wilderness, the Wilderness Act says these areas "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical use" that reflect the character of this wilderness. Some of these features, such as the presence of threatened and endangered species, are also part of the Natural quality of a wilderness and could be evaluated for effects to that quality unless the specific species or habitat is unique to the wilderness area. Other features, however, such as the presence of important geological formations, cultural resources, historical sites, or paleontological localities, do not fit easily into one of the other four qualities. While many different types of features could be included, the intent is to include those that are significant or integral to the wilderness. Features mentioned in wilderness enabling legislation or legislative history would likely qualify. The Other Features of Value that are present must be just as rigorously protected as the other qualities of wilderness character, and so you should account for these separately in this section of the MRDG. To preserve this quality, it may be necessary to take action to protect these features even if they were already at risk or degraded prior to the date of designation.

The description of wilderness character qualities found above is not comprehensive. For a detailed discussion of wilderness character refer to:

U.S. Forest Service Rocky Mountain Research Station, General Technical Report, RMRS-GTR-212: [Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System.](#)

Additional information is provided in the Wilderness Character toolbox (www.wilderness.net/toolboxes/).

As you become increasing familiar with wilderness character, you will realize that taking action often positively impacts one or more qualities of wilderness character while simultaneously negatively impacting others. But keep in mind that at this point in the analysis you are determining **if** any action is necessary, **not** looking at impacts from taking action (that analysis comes in Step 2, if you decide at the end of Step 1 that some action must be taken).

For example, let's look at an analysis of whether taking action to control an infestation of non-native invasive weeds is necessary to preserve one or more of the qualities of wilderness character:

Untrammeled: Action is not necessary to preserve this quality. *(In fact, if taken, action would impair the Untrammeled quality because the action, even if necessary, is an intentional human caused manipulation of "the earth and its community of life." But you'd note that in looking at the alternatives in Step 2, not here.)*

Undeveloped: Action is not necessary to preserve this quality. *(Again, do not confuse **necessity** to take action (here) with the **effects** of taking action – there might be some if you used motorized equipment to control the weeds – which get addressed in each alternative under Step 2.)*

Natural: Action is necessary to preserve this quality -- if native species actually can be restored.

Outstanding opportunities for solitude or a primitive and unconfined type of recreation: Taking action would make only a slight contribution to preservation of this quality when compared to the need for action to preserve the Natural quality. Any enhancement of opportunities for primitive recreation that result from weed eradication is because of the long term contribution to protecting or restoring the Natural quality.

Other Features of Value: It is likely that there is little or no need for action to preserve any features that reflect the character of this wilderness not already accounted for in the Natural quality.

Step 1 Determination: Is any administrative action necessary?

The MRDG worksheet will track your responses to questions A-C. If at least one criterion now reads "Action IS necessary to meet this criterion," check the "Yes" box, explain, and proceed to the Step 2 worksheet. If all the criteria read "Action IS NOT necessary to meet this criterion," you will check the "No" box, explain, and stop.

Step 2: Determine the minimum activity.

Open the [Step 2 worksheet](#).

Other Direction

If there is “special provision” language in legislation (or other Congressional direction) that explicitly **allows** consideration of a use otherwise prohibited by Section 4(c), check the “Yes” box and cite the pertinent document and its explicit direction in the text box provided. For example: Section 1972(b)(8) of P.L. 111-11 states that “the Secretary may authorize the installation and maintenance of hydrologic, meteorologic, or climatological collection devices in [this wilderness] if the Secretary determines that the facilities and access to the facilities are essential to flood warning, flood control, or water reservoir operation facilities.”

In addition, if the issue has been addressed in agency policy, unit and wilderness management plans, species recovery plans, or agreements with tribal, state, and local governments or other federal agencies, check the “Yes” box and cite the pertinent document and its explicit direction in the text box provided.

Such guidance may be useful in developing alternatives that may be given greater weight than “new” alternatives, but they should not be the only alternatives considered, nor should they necessarily become the Preferred Alternative.

Time Constraints

Explain any **environmental** constraints that would dictate timing of the action. These constraints are universal, and do not vary by alternative. For example, it may be necessary to time implementation to avoid a critical bird nesting season or seasonal high water levels in streams.

Environmental time constraints do not include availability of workers, training, materials, agency approvals, or available funding. These can be important factors for project planning and implementation but should not be considered to limit your alternatives.

Components of the Action

In the table provided, list each discrete component of the action. These will form the basis of comparison between the alternatives which follow, and this list will be automatically carried forward to each alternative’s worksheet. The purpose of this technique is to fully examine all parts of the action being considered and to help identify the minimum requirement for each component activity, thereby facilitating a meaningful comparison of alternatives.

Break the action down into the smallest components which might be different between alternatives. (For example, for some actions it might make sense to evaluate getting personnel to the site and getting material and equipment to the site separately or by different means because of the volume, weight, or distances involved; in others, personnel and equipment would always travel together and by the same means, so would be evaluated as only one component.) Also, for many types of actions it is useful to include, as a component, the conditions of the site after the action is complete. This serves as a check to determine which qualities of wilderness character will have been preserved, improved, or degraded over the long-term by completing the action. **You may not know all the components you need to use to compare impacts until you have actually outlined all the alternatives. This means that your analysis and use of the form may not be possible in a strictly linear fashion – you may have to start the next worksheets and come back to this worksheet later.**

In the example below, assume we have already determined the need to take action to address an old human-caused hazard of enlarging a natural small cave into a mine adit. Here we have listed the discrete components as follows:

Component 1	Transportation of personnel to project site
Component 2	Transportation of material to project site
Component 3	Tools used at project site
Component 4	Condition of site after project
Component 5	
Component 6	
Component 7	
Component 8	
Component 9	

Description of Alternatives

Move to the alternative tabs (**Alt 1** through **Alt 8**) in the workbook.

Each alternative has its own worksheet. For each alternative, give it a short name in the first text box. In the larger text box below, describe what the action is in terms of methods and techniques that will be used, when the activity will take place, where the activity will take place, and necessary mitigation measures.

The level of detail required in the description of alternatives and effects varies by the complexity of the activity. For some projects, it may be necessary to reference agency policy, standards, or guidelines for construction of facilities and structures, safety, etc. .

Identify and describe a full range of feasible alternatives, including, as applicable:

- Proposed Section 4(c) prohibited uses
- No Section 4(c) prohibited uses
- Minimal Section 4(c) prohibited uses (e.g. a combination of motorized and non-motorized methods or tools)
- No Action (may not be needed here, but could help to facilitate a comprehensive comparison of effects in a subsequent NEPA analysis)

Action alternatives which are not feasible or are otherwise unacceptable to implement are not analyzed here, but should be identified along with the reasons why they were not fully considered on the worksheet named **Alts Not Analyzed** and in any NEPA decision required to implement the action. In addition, the dropped alternatives should be briefly mentioned in the **Step 2 Decision rationale** to remind reviewers that a complete range of alternatives was considered. Valid reasons for deciding that an alternative is unacceptable or not feasible should be limited to: 1) actions that are impossible to accomplish by any means, 2) actions that are possible to accomplish but implementation would cause unacceptably greater negative impacts to wilderness character or, 3) actions that would cause an unacceptable safety risk to workers or the public which cannot be mitigated. Alternatives should not be eliminated from full consideration simply because implementation would take more time or money, or because the skills or equipment needed are not readily available on the local unit. For example, use of a helicopter may cost more than widening an existing trail to serve as a temporary road but if both alternatives are feasible they should be fully evaluated regardless of cost.

Include an explanation of how the impacts from the various activities, methods, and tools that could be used might be mitigated: through employee training; location of work areas, campsites and travel routes; project timing; temporary closures; or other actions.

Component Activities

On the worksheet of each alternative, the components of the action have been automatically entered. For any given alternative, enter the activity that will be used to accomplish each component. Remember, you may not have listed all the components until you have described many or all of the alternatives. This means that rather than completing the entire worksheet for Alternative 1 before going on to Alternative 2, you may choose to go to each alternative's worksheet to describe the alternative and back to the Step 2 worksheet to enter the components. This creates an iterative, rather than linear, process.

Here's our adit example in an alternative called the "Helicopter Bat Gate."

Component of the Action		Activity for this Alternative
1	Transportation of personnel to project site	workers use saddle stock to get to work site
2	Transportation of material to project site	helicopter lift of assembled bat gate
3	Tools used at project site	mix cement and place gate using only hand tools
4	Condition of site after project	adit opening has permanent bat gate
5		
6		
7		
8		
9		

Alternative Comparison Criteria

For each activity specific to this alternative, check whether that activity has a positive, negative, or no effect on each of the following comparison criteria. In the text box provided, explain your reasoning. Calculations are automatically performed, and carried forward to the Alternative Comparison worksheet. Note that it is possible to check both positive and negative boxes if the activity has both effects.

Examples from the "Helicopter Bat Gate" alternative are found after discussion of each of these qualities, with some explanatory notes in red on why particular activities were "graded" as they were.

Wilderness Character Untrammelled

Identify how this quality is positively impacted where a trammeling is reduced or eliminated, or is negatively impacted where trammeling increases. Discuss the degree to which the components or processes of ecological systems are intentionally controlled, manipulated, or hindered by the proposed actions.

This quality is degraded by modern human activities or actions that control or manipulate the components or processes of ecological systems inside the wilderness. Examples include suppression of natural fire or managing vegetation and wildlife, even though the manipulation may be for a "good" purpose, such as eliminating a non-native species. When manipulating the natural process in a wilderness, taking action contradicts the Untrammelled quality. Any manipulation of the biophysical environment -- even for "good" reasons (e.g., controlling weeds) -- has a negative impact to this quality. A proposal which does not manipulate the biophysical environment has no impact on this quality. The only way a positive effect to this quality could be registered is if the proposal would stop a current manipulation of the biophysical environment.

Typically, the noteworthy impacts to the Untrammelled quality are those that are broader in scale or impact to ecological systems -- such as the impacts from weed or pest treatment, prescribed fire, or supplying an artificial water source. For example, if a pesticide is applied to control non-native insects the negative impact to the Untrammelled quality would be noted under the component that describes the action (i.e. "Treat infected trees with insecticide."). For other projects where the intent is not to manipulate "the earth and its community of life," such as placing a monitoring installation, the impacts are confined to a small area or are temporary and would have only a very small and inconsequential impact on the Untrammelled quality. In this case, simply state that there is no effect here and, if appropriate, include these impacts in one or more of the other qualities.

Component Activity for this Alternative		Positive	Negative	No Effect
1	workers use saddle stock to get to work site	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	helicopter lift of assembled bat gate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	mix cement and place gate using only hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	adit opening has permanent bat gate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input 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		0	0	NE
Untrammelled Total Rating		0		

<p>Explain:</p> <p>stock, helicopter, and tools do not affect the Untrammelled quality bat gate will keep the natural part of the adit open to use by bats (Note that this is not a positive impact because the activity is not undoing a previous control of the community of life)</p>

Undeveloped

Describe the positive or negative impacts to this quality in terms of how “the imprint of man’s work will remain substantially unnoticeable” and wilderness will continue to be in contrast to other areas of “growing mechanization.” Include the effects of the use of any motorized equipment or mechanical transport, or the continued presence, addition, or removal of any structures or installations on maintaining the Undeveloped quality of wilderness character.

This quality is degraded by the presence of structures, installations, habitations, and by the use of motor vehicles, motorized equipment, or mechanical transport that increases people’s ability to occupy or modify the environment. Examples include communication sites, monitoring installations, administrative cabins, trail bridges, helicopter landings, and the use of chain saws, pumps, motor vehicles, motor boats, etc. An alternative which uses none of these prohibitions would have no impact on this quality. An alternative which removes a structure or installation, or otherwise stops a prohibited use, would have a positive effect on this quality. Note that when a proposal is broken down into phases or components, more than one effect to this quality may be registered. For instance, an alternative to remove a bridge by flying it out with a helicopter would both improve (by removing the structure) and degrade (by using an aircraft) this quality.

Component Activity for this Alternative		Positive	Negative	No Effect
1	workers use saddle stock to get to work site	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	helicopter lift of assembled bat gate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	mix cement and place gate using only hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	adit opening has permanent bat gate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input 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		0	2	NE
Undeveloped Total Rating		-2		

<p>Explain:</p> <p>saddle stock, and hand tools are not developments (Note that using traditional, non-motorized tools (or no tools) does not make the wilderness less developed (which would be a positive impact), it merely keeps the wilderness from becoming more developed (a negative impact).)</p> <p>use of helicopter is a development</p> <p>bat gate remains as a development (Note that the adit itself also remains, but since it was already there, it is not an additional negative impact.)</p>
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Natural

Describe the potential positive or negative impacts to this quality in terms of protection, impairment, or restoration of natural conditions (i.e. air, water, soil, wildlife, fish, plants, etc.) including endangered, threatened, or rare species, natural biological diversity, and self-regulating ecosystems.

Include, where applicable, a discussion of the effects related to protecting natural conditions within the regional landscape (i.e. insects, disease, non-native species, wildlife migration corridors, etc.).

This quality is affected by intended or unintended effects of modern civilization on the ecological systems inside the wilderness. There are positive impacts to this quality if the alternative would improve natural conditions, negative impacts if the alternative would degrade natural conditions, and no impact if the alternative would have no effect on natural conditions. Examples of degradation of this quality include the results of suppressing natural fire, or allowing non-native invasive species to become established or expand. Examples of preservation of this quality may include the effects from allowing natural fire, successful treatment of non-native species, and the restoration of native species. Note that in some instances, an alternative might have both positive and negative impacts. For instance, providing artificial water to aid in the recovery of a T&E species would be a positive impact (if the species increased) to this quality and also a negative impact because of the effects to other species due to an unnatural water source. (Of course, this alternative would have impacts to other qualities as well.)

Component Activity for this Alternative		Positive	Negative	No Effect
1	workers use saddle stock to get to work site	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	helicopter lift of assembled bat gate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	mix cement and place gate using only hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	adit opening has permanent bat gate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input 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		1	0	NE
Natural Total Rating		1		

Explain:

stock, helicopter, and tools do not affect the Natural quality here
bat gate will keep the natural part of the adit open to use by bats, while preventing disturbance by humans

(Note: Impacts that might be avoided (for instance, helicopter use disturbing bighorn lambing could be prevented by conducting operations outside lambing season), should not be listed here, but should be discussed in the narrative; negative impacts that cannot be completely

avoided should be accounted for in these tables and discussed -- including ways to minimize the impacts -- in the narrative.)

Solitude or Primitive and Unconfined Recreation

Identify how opportunities for visitors to experience solitude or a primitive and unconfined type of recreation will be protected or impaired.

Describe the impacts to this quality that will be noticeable to the visitor and that could affect their experience in wilderness. Include negative impacts to visitors from the use of motorized equipment, mechanical transport, landing of aircraft, structures, or installations and positive impacts from actions that preserve opportunities. If necessary, describe the positive or negative impacts separately for each sub-part of this quality: Solitude, Primitive Recreation, and Unconfined Recreation.

This quality is impacted by settings that degrade or improve these opportunities. Examples of degradation include management actions that cause (by action or inaction) loss of opportunities due to crowding or too many visitor encounters (impacting solitude), facilities or other signs of modern civilization (impacting primitive recreation), and excessive restrictions on visitor behavior (impacting unconfined recreation). An alternative which increases solitude, removes infrastructure that diminishes primitive recreation, or removes a management restriction would have a positive impact on this quality. Some management actions may be found to be necessary to preserve one or more of the other qualities even though this quality would be degraded. (For example: fire grates, toilets, trail bridges, and designated campsites degrade this quality – and the Undeveloped quality -- but may be necessary to preserve the Natural quality).

Because this quality has three sub-parts, the effects are not always straight forward; one alternative could produce multiple counterweighing impacts to this quality. Designated campsites negatively impact unconfined recreation while positively impact solitude. For an even more complex example, if a trail bridge has washed out, re-building it may allow more visitors to access an area and degrade opportunities for solitude for some visitors able to cross the stream without a bridge (as well as negatively impact their opportunity for primitive recreation by reducing the challenge of crossing a bridgeless stream). However, primitive recreation opportunities may be preserved for others who could not access the area without a bridge. **Note that in such instances of counterweighing impacts, the worksheet will allow you to check both boxes. Be sure to explain in the space provided. (You may find other comparison criteria below that also have the possibility of generating offsetting impacts.)**

Component Activity for this Alternative		Positive	Negative	No Effect
1	workers use saddle stock to get to work site	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	helicopter lift of assembled bat gate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	mix cement and place gate using only hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	adit opening has permanent bat gate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input 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		0	2	NE
S or P & U Recreation Total Rating		-2		

Explain:
encountering saddle stock or three employees with hand tools for such a short time (1 day) has essentially no effect on visitor recreation
use of helicopter degrades opportunities for solitude; closure of the work site during helicopter operations degrades opportunities for unconfined recreation
visitors coming upon the bat gate also degrades the opportunity for Solitude or Primitive and Unconfined Recreation

Other Features of Value

Identify any values or characteristics of this wilderness (i.e. "ecological, geological, or other features of scientific, educational, scenic, or historical value") that are not accounted for in the above qualities, and describe the effects to these features.

Heritage and cultural resources including historic sites, and paleontological localities are included here.

An alternative that degrades any of these features of value would be a negative impact to this quality. An alternative that improves them would have a positive impact on this quality. Or, the alternative may have no impact on this quality either from simply not degrading the quality, or because there are no other features of value impacted by the proposal.

Component Activity for this Alternative		Positive	Negative	No Effect
1	workers use saddle stock to get to work site	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2	helicopter lift of assembled bat gate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	mix cement and place gate using only hand tools	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	adit opening has permanent bat gate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input 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		0	0	NE
Other Features of Value Total Rating		0		

Explain:
there are no Other Features of Value affected by this alternative

Traditional Skills

Explain whether and how the alternative helps maintain proficiency in the use of primitive and traditional skills, non-motorized tools, and non-mechanical travel methods.

Component Activity for this Alternative		Positive	Negative	No Effect
1	workers use saddle stock to get to work site	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	helicopter lift of assembled bat gate	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3	mix cement and place gate using only hand tools	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	adit opening has permanent bat gate	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6		<input 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		2	1	NE
Traditional Skills Total Rating		1		

Explain:
traditional skills are maintained by the use of saddle stock for transporting personnel, and using only hand tools on site
traditional skills are eroded by using a helicopter to transport material to the site

Economics

Estimate the cost, of both labor and material, for implementing the alternative. Be sure to include the costs of training, contractors, detailers, volunteers, and equipment needed.

Note - Identify and describe the cost required for each component here, but avoid pre-selecting a preferred alternative based on this criterion. Cost of implementation cannot be the primary factor in allowing uses that would otherwise be prohibited or degrade wilderness character.

Component Activity for this Alternative		Estimated Cost
1	workers use saddle stock to get to work site	1,580
2	helicopter lift of assembled bat gate	4,300
3	mix cement and place gate using only hand tools	70

4	adit opening has permanent bat gate	0
5		
6		
7		
8		
9		
Total Estimated Cost		\$5,950

<p>Explain:</p> <p>2 employees and 2 volunteers for 3 10-hr days (includes travel) = \$1,080 4 saddle-, 1 pack-stock for 3 days (prorated cost) = \$500 helicopter flight = \$2,800 (added expense) bat gate (materials and assembly) = \$1,500 cement & miscellaneous = \$70 TOTAL = \$ 5,950</p> <p>(Note: costs and timing supplied here as a sample, and should not be taken as actual data.)</p>
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Safety of Visitors and Workers

Determine the risk associated with implementing the alternative to visitors or workers (including agency personnel, volunteers, and/or contractors.) In the Explanation box, identify which hazards associated with the action alternative can be mitigated, and which hazards remain after mitigation. Describe how mitigation might be achieved through providing information to the public and temporary area closures or through worker training, the use of protective equipment, employing “best practices,” or other requirements. In general, only human-caused hazards in wilderness are addressed. However, natural hazards may be temporarily alleviated for workers.

Check the box that most closely identifies the degree of risk for the most dangerous component in the alternative, after considering both the **probability** of occurrence (across the table) and potential **severity** of injury (down the table). Use the most dangerous component, rather than trying to average the danger of all the components, because the single most dangerous point in the activity is the maximum exposure that must be accounted for.

You may be unsure about the relative risks of the different component activities of the alternative. In such instances, assess the risk for each component, one component at a time. Doing so necessitates unchecking the assessment box used for the first component before going on to the second component. Note the component with the greatest risk compared to the other components, check that box again, and the worksheet will report the risk assessment for that Alternative. If two or more components have the same greatest degree of risk, note that in the Explain box and simply choose one to represent the Overall Risk Assessment. If you are using the Word document, you will have to interpret the Risk Assessment based on the chart found below the table in Word.

Base the assessment of the safety risks of implementing an alternative on adequate supporting evidence (i.e. agency accident data, project specific Job Hazard Analysis, agency specific guidelines, or other documentation). This assessment should reflect all

the safety risks which cannot be mitigated through training, use of protective equipment, and implementation of required safety procedures.

RISK ASSESSMENT	Probability of Accident				
	Frequent	Likely	Common	Unlikely	Rare
Catastrophic: Death or permanent disability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Critical: Permanent partial disability or temporary total disability	<input type="checkbox"/>				
Marginal: Compensable injury or illness, treatment, lost work	<input type="checkbox"/>				
Negligible: Superficial injury or illness, first aid only, no lost work	<input type="checkbox"/>				
Risk Assessment	Moderate Risk				

<p>Explain:</p> <p><u>Component activities considered:</u> saddle stock to get to and from site: with proper mitigation accidents are unlikely, but may easily be marginal (involving a compensable injury or lost work). (rating: Low risk). Mitigate through use of qualified workers who have completed worker training for pack stock loading, unloading and traveling, the use of protective equipment including field clothes and footwear, and employing “best practices” described in the Job Hazard Analysis for this project. Most hazardous component activity: use of helicopter transporting the bat gate: with proper mitigation accidents are rare but often catastrophic when they occur. (rating: Moderate risk). Mitigate through area closure during flight activities, use of qualified and agency approved helicopter, flight, and ground crews and restrict activities to approved landing zones identified in the Job Hazard Analysis for this project. Overall Risk Assessment: Moderate</p>
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After completing Alternative 1, open the worksheet for Alternative 2. Notice that the components of the action have been automatically entered. For Alternative 2, enter the activity that will be used to accomplish that each component. Repeat the directions for Alternative 1.

Repeat as necessary for each alternative. If you have alternatives that were considered but dropped from full analysis, list these in the text box on the worksheet titled *Alts Not Analyzed* and write a brief rationale for dropping each.

Comparison of Alternatives

[Open the Alt Comparison Worksheet.](#) You do not have to enter anything here – all the values have been carried forward from your entries on earlier worksheets.

Wilderness Character: As you are mandated by the Wilderness Act to “preserve wilderness character,” this is the most important criterion for comparing alternatives. Below, Alternative 1 looks the way the worksheet would display the data from our hypothetical Helicopter Bat Gate alternative from the adit example:

Wilderness Character	Alternative 1	
	Positive	Negative
Untrammeled	0	0
Undeveloped	0	2
Natural	1	0
Solitude or Primitive & Unconfined Rec.	0	2
Other Features of Value	0	0
Totals	1	4
Wilderness Character Rating	-3	

Traditional Skills: In some cases the impacts of two or more alternatives to the qualities of wilderness character will be equal. Comparison of the Traditional Skills criterion can help decide which of these alternatives is preferable. When these results are combined with those from the Wilderness Character ratings, one alternative usually rises as the preferable activity.

Traditional Skills	Alternative 1	
	Positive	Negative
Traditional Skills	2	1
Traditional Skills Rating	1	

The comparison tables are intended as tools to help guide your decision but they may not accurately represent every situation, nor are the numeric values alone sufficient to justify a decision. In some cases the comparison table format using a single + or – for each component's impact may be misleading as a display of significance, as not all effects are necessarily equal. For example, it could be argued that the adverse effect on the Untrammeled quality in one alternative caused by a crew treating weeds while they are still a manageable infestation is minor when compared to the adverse effect on the Natural quality in another alternative of not treating a non-native invasive species that could change the entire wilderness ecosystem. In that case, of course, you will already have decided in Step 1 that action is necessary to preserve the Natural quality. In other instances, however, you may have to note the significance of the positive or negative impacts to each criterion in the Rationale for the Decision section by explaining the magnitude of the effects. For example, an alternative which includes landing a helicopter will have a negative impact to the Undeveloped quality (among other impacts). Another alternative in which the helicopter lands ten times will also have a negative impact. Only in the written Rationale for the Decision can the difference in significance be explained.

Economics: The Economics table will list your estimated costs for each alternative. Remember, the cost of implementation cannot be the primary factor in allowing uses that would

otherwise be prohibited, but in all practicality can be used in budgeting or to compare between alternatives employing roughly equal effects to wilderness character.

Safety: Because safe working conditions -- and keeping visitors safe from human-caused dangers in the wilderness -- are a priority in all decisions and actions, you will also want to compare the Risk Assessments of the various alternatives.

Occasionally, safety concerns can legitimately dictate choosing one alternative which degrades wilderness character (or other criteria) more than an otherwise preferable alternative. In that case, describe the benefits and adverse effects in terms of risks to both the public and workers for each alternative, but avoid pre-selecting an alternative based on the safety criteria in this section.

In evaluating the risks of implementing each alternative be sure to consider all the relevant information and avoid common assumptions as to which action is safer. The rate of occurrence of an accident is different than the severity of the reported injuries. To support the evaluation of alternatives, provide an analysis, reference, or documentation and avoid assumptions about risks and the potential for accidents. This documentation can take the form of agency accident-rate data tracking occurrences and severity; a project-specific job hazard analysis; research literature; or other specific agency guidelines. Give special consideration to risks that remain after proper training, safety procedures, or protective equipment and, if necessary, describe the magnitude or significance of the hazard and risks to help explain the risk assessment ratings.

Step 2 Determination: What is the minimum activity?

Open the [Step 2 Determination Worksheet](#). Check the box to select the alternative that represents the minimum requirements necessary to administer the areas as wilderness and **describe the rationale** for selecting it in the text box below.

The selected alternative must conform to all applicable laws. Explain why the use of motorized equipment, mechanical transportation, structures, or installations is the minimum necessary requirement for the administration of the area as wilderness by briefly describing the benefits or adverse effects to the qualities of wilderness character and other legal requirements:

- If any of the Qualities of wilderness character are degraded in the selected alternative, you must explain how that degradation is justified by preserving wilderness character as a whole.
- If you are selecting an alternative that does not have the least negative impact to wilderness character, as shown on the Alt Comparison worksheet, explain why.
- If the least impact to wilderness character is found to be the same in two or more alternatives, you may base your decision on the other criteria (Traditional Skills, Economics, Safety). Explain your reasoning.

The selected alternative must also meet agency policy. Cite the specific criteria, direction, standard, or guideline that applies and explain how the alternative complies.

The rationale should demonstrate that the determination is clearly a result of objective evaluation of the alternatives and not the result of an inappropriate bias or justification of an alternative or method for non-wilderness reasons. When discussing why other alternatives do not meet the minimum requirements, be sure to include a brief reference to the alternatives not analyzed.

If your selection is based at least in part on the Safety criterion, be sure to explain the rationale and include or reference supporting analysis or documentation. This analysis should explain why the use of motorized equipment or other prohibited uses is necessary because to do otherwise would cause increased risks to workers or visitors that cannot be satisfactorily mitigated through training, use of personal protective equipment (PPE), or other requirements to alleviate the safety risk.

Avoid selecting an alternative based primarily on cost of implementation. While administrative activities should always be accomplished with economic efficiency, both law and agency policy directs us away from considering the cost as the over-riding factors for administrative use of otherwise prohibited activities. The Wilderness Act provides only the following as legal basis for approving use of any of the Section 4(c) prohibited uses:

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

List any [monitoring or reporting requirements to meet agency policy or guidelines](#).

Report the number and type of prohibited use authorizations by checking the box and noting the quantity of each Section 4(c) use that is included in the selected alternative. If no prohibited uses are authorized, leave this section blank. Your agency may require additional reports, such as those documenting the actual use of authorized prohibited tools, structures, installations, or temporary roads.

Approvals

Depending on agency policy, [signatures should include that of the administrator who has the authority to approve Section 4\(c\) prohibited uses or other restricted activities included in the decision, and sign the MRDG](#). Check your agency policy and consult with your regional or state wilderness program managers to determine the proper procedures.

Note: The MRDG is not a substitute for a NEPA analysis and decision where one is required. For further information on the relationship between the MRDG and NEPA, see the [Overview](#).