MINIMUM REQUIREMENTS ANALYSIS FRAMEWORK Instructions

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

— Section 4(c), Wilderness Act of 1964

# **Introduction**

The Minimum Requirements Analysis Framework (MRAF) promotes wilderness stewardship by providing a consistent, interagency format for conducting a Minimum Requirements Analysis (MRA) for an action proposed in a wilderness area that involves a use otherwise prohibited by the Wilderness Act.

More information on the MRAF and its appropriate uses is available at [Wilderness Connect.](http://www.wilderness.net/MRA) Please refer to your [agency’s policies and other guidance](https://wilderness.net/practitioners/minimum-requirements-analysis/MRDG.php) for more direction on how and when to conduct an MRA.

This document is intended for uses prohibited by Section 4(c) of the Wilderness Act in designated wilderness, but it can be used to analyze all projects in wilderness. Check agency policy to determine if this workbook may be appropriate for other proposals in wilderness.

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 an MRA, go to the [e-learning course listing](https://wilderness.net/practitioners/training/online-training-courses-and-certificate-programs/default.php) for the Arthur Carhart National Wilderness Training Center.

# **workbook instructions**

The MRAF derives from Section 4(c) (Prohibition of Certain Uses) of the Wilderness Act and involves two steps: Step 1 determines whether a use that would otherwise be prohibited may be ***necessary*** in wilderness to meet minimum requirements to administer the area for the purposes of the Wilderness Act; if so, Step 2 provides guidance for determining the ***minimum*** amount of a prohibited activity necessary to address the issue.

If you are using this form to analyze a non-prohibited use, consider using a modified version of the first question posed in Step 2 (see below). For example: *“Is there ‘special provisions’ language in legislation (or other Congressional direction) that explicitly allows consideration of a use otherwise prohibited by Section 4(c)?”* OR *“Is there ‘special provisions’ language in legislation (or other Congressional direction) that explicitly allows consideration of an action that would otherwise degrade wilderness character?”*

It may be appropriate to apply the MRA process to a recurring action that has the same purpose, effect, or environmental/social context each time it is undertaken (aka a “Programmatic MRA”). A Programmatic MRA’s determination should include sideboards and/or limitations for any non-conforming uses rather than simply allowing a particular non-conforming use for a specific action. Where actions need to be tailored to each site, a Programmatic MRA is generally not sufficient on its own but may be useful to inform a site-specific MRA. Site-specific analysis tiered to the programmatic MRA may be necessary to address individual situations. The determination should also articulate the purpose(s) and context to which the Programmatic MRA applies and mandate that a separate analysis be conducted for any action above and beyond that purpose or context. Identify an expiration date and/or threshold criteria that would trigger a re-evaluation of the analysis. Check agency policy or consult with respective agency wilderness lead to determine when a Programmatic MRA may be appropriate.

# **Title**

Use a title that is descriptive but does not suggest a proposed action. For example, “Bighorn Sheep Population Decline in the Peak Wilderness” is appropriate because the title describes the issue being analyzed but does not assume an outcome. “Bighorn Sheep Collaring in the Peak Wilderness” would be inappropriate because the title assumes collaring will be the final outcome of the analysis.

# **Step 1: Determine If Administrative Action May Be Necessary**

## **Issue Statement**

*Describe the issue*

The description should explain in general terms the issue that may require some action in wilderness. The issue may be a problem, situation, opportunity, or other circumstance that requires consideration. It is not a proposed action, tool, or solution.

The description should neither assume action will be taken noridentify a specific method. Moreover, the description should not attempt to justify the use of motorized equipment or mechanical transport or the placement of an installation, structure, or temporary road. Instead, the statement of the existing issue should identify what is occurring in the wilderness so that the rest of the analysis in Step 1 can determine whether action may be necessary in wilderness. If Step 1 determines action is needed, use Step 2 to identify and evaluate specific actions, methods, etc.

The table on the following page provides appropriate and inappropriate examples of describing an issue. The brief descriptions provided here are for illustrative purposes only. Actual descriptions should provide all relevant background information.

| **Appropriate examples of description** | **Inappropriate examples of description** |
| --- | --- |
| An administrative cabin is deteriorating, and there is a proposal to reconstruct it. The structure 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 to 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 across maintained trails. Approximately 47 miles of trail are affected. These trails provide 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. Development outside the wilderness has severely limited the winter range, 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. |
| A trail bridge has washed out. The bridge serves a trail used by visitors and outfitter-guides to access approximately 20% of the wilderness. Alternate routes to this portion of the wilderness would add 18 miles to the trip. | There is a need to replace a 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 caused by fallen beetle-killed trees. | Construction of rock gabions has been proposed to stop erosion. |
| There is a lack of information on air quality in a wilderness area’s Class I 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. These 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**

*Can the issue be resolved or addressed outside of wilderness?*

Answer “yes” or “no.” If the issue can be addressed outside of wilderness, check “yes” and stop; action in wilderness is not necessary to meet minimum requirements. If the issue cannot be addressed outside of wilderness, check “no” and continue to the next section. While the answer will usually be “yes” or “no,” some issues will require additional consideration. In such cases, perform whatever additional analysis is needed before proceeding to answer “yes” or “no.”

Examples of administrative actions that can likely be resolved outside of wilderness:

* Installing nest boxes outside wilderness boundaries to benefit a bird species.
* Using remote sensing instead of snow pillows as one component of hydrologic research.

Examples of administrative actions that are unlikely to be resolved outside of wilderness:

* Addressing a pre-existing installation in wilderness.
* Addressing a series of heavily used campsites that are causing excessive sedimentation into an adjacent lake.

Examples where additional analysis of alternatives may be needed before answering “yes” or “no”:

* A research proposal has been received, and alternate non-wilderness sites for conducting the research have not been documented and analyzed.
* There is an existing private right present in wilderness, and analysis has not been conducted to determine the feasibility of altering the right so as to better preserve wilderness.

Consider including the following factors in the explanation box when comparing and analyzing options outside of wilderness:

* List of areas considered (inside and outside wilderness). This should be a broad consideration so as to assure non-wilderness options are not overlooked.
* Identify special considerations related to the issue. List any factors that limit the consideration of sites (e.g., landforms, soils, or other relevant factors).
* If response to the issue involves scientific research, consider if the activity involves trammeling of wilderness or is limited to observational activities. Experimental research is generally more appropriate outside of wilderness and often yields similar results.

The finding that options do not exist outside of wilderness does not mean that action in wilderness is automatically necessary. Complete the rest of Step 1 to determine if action is necessary in wilderness.

## **Criteria for Determining Necessity**

*Do any of the criteria below apply?*

### Wilderness Character

*Based on the Issue Statement, are any of the qualities of wilderness character degraded, impaired, or threatened to a degree that it is necessary to analyze potential action to address the issue?*

The primary mandate of the Wilderness Act is to preserve wilderness character. Section 2(a) directs agencies 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).

The definition of “wilderness,” found in Section 2(c) of the Wilderness Act, identifies five qualities of wilderness character. Taken together, these qualities represent the primary tangible aspects of wilderness character that link on-the-ground conditions in wilderness and the outcomes of wilderness stewardship to the statutory definition of wilderness. Wilderness character may be more than these five qualities. In addition to the tangible qualities used to analyze if action may be necessary to preserve wilderness character, there are also important intangible aspects of wilderness character that are difficult or impossible to describe. It is up to the local wilderness manager to determine if a particular MRA needs to consider intangible qualities. Explain whether and how the situation described in the Issue Statement may degrade, impair, or threaten each quality to a degree that action may be necessary. (Positive and negative effects to each quality from each alternative will be considered in Step 2).

#### Untrammeled

Wilderness ecological systems are unhindered and free from intentional actions of modern human control or manipulation. The Wilderness Act states that a wilderness is “an area where the earth and its community of life are untrammeled by man” and are to be managed “in contrast with those areas where man and his own works dominate the landscape.” This quality is important because it is the essence of wilderness: a place where a humble and restrained approach reflects a respect for the autonomy of nature and allows us to learn from the natural world. The Untrammeled quality puts the “wild” in wilderness. It is unlikely that action is necessary to preserve this quality unless the decision is to stop taking action (e.g., removal of a dam managed to perpetually manipulate the movement of water in wilderness).

#### Undeveloped

Wilderness is essentially without structures, installations, the use of motors, landing of aircraft, or other forms of mechanical transport. The Wilderness Act states that wilderness is “an area of undeveloped Federal land” and is essentially “without permanent improvements or human habitation.” This quality is important because it prevents modification of the land caused by “expanding settlement and growing mechanization.” To preserve the Undeveloped quality, it may be necessary to remove existing structures or installations. This does not extend, however, to “other features of value,” which, if identified, are part of an area’s wilderness character (see below for a description of the Other Features of Value quality). Cultural resources, in the form of structures or installations, frequently qualify as part of the Other Features of Value quality.

#### Natural

Wilderness ecological systems are substantially free from the effects of modern civilization. The Wilderness Act states that wilderness retains its "primeval character and influence” and is to be “protected and managed so as to preserve its natural conditions.” This quality is important because it preserves indigenous species and ecological processes identifiable to that area. To preserve the Natural quality, it may be necessary to take action to correct human-caused unnatural conditions, including those present at the time of designation. Identifying a need to preserve this quality does not automatically mean that taking action is a given, however. That analysis occurs in Step 2 and is based upon preserving wilderness character as a whole (e.g., consideration of known methods, and the degree of impact the method would have on other qualities of wilderness character). Remember: Step 1 only indicates whether you need to perform that analysis in Step 2.

#### Outstanding Opportunities for Solitude or a Primitive and Unconfined Recreation

The Wilderness Act states that wilderness has “outstanding opportunities for solitude or a primitive and unconfined type of recreation.” This quality is important because it provides chances to be by oneself and offers opportunities for primitive recreation, personal challenge, and self-discovery while allowing visitors to be removed from the constraints of civilization. To preserve this quality, it may be necessary to reduce visitor encounters, reduce signs of modern civilization inside wilderness, remove agency-provided recreation facilities, reduce management restrictions on visitor behavior, or take action to improve opportunities for solitude or primitive and unconfined recreation.

A diminished condition of one of the elements of this quality (Solitude or Primitive and Unconfined Recreation) may require analyzing potential action that addresses the issue. For example, diminished solitude may require taking regulatory action such as instituting a limit on group size. Identifying a need to preserve this quality does not automatically mean that taking action is a given, however. That analysis occurs in Step 2 and is based upon preserving wilderness character as a whole (i.e., improving one of the elements within this quality may involve tradeoffs with the quality’s other element or with the other qualities of wilderness character).

#### Other Features of Value

In addition to the four qualities of wilderness character listed above (which all wilderness areas possess), the Wilderness Act states that wilderness “may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value” (emphasis added). This quality is important because it protects features unique and integral to an individual wilderness that might not be identified with one of the other four qualities. Not all wilderness areas possess this quality, but when they do, this quality must be preserved along with the others. The Other Features of Value quality typically consists of important geological formations, cultural resources, or paleontological sites. This quality normally does not include species or ecosystems—those values are addressed in the Natural quality—unless markedly unique to the wilderness.

Other Features of Value may be identified in legislation, through a nationally maintained register (e.g., National Register of Historic Places), or as a locally recognized feature that defines how people value the wilderness. For example, is there symbolism represented by the feature that gives meaning to the wilderness (e.g., spiritual values, traditional practices, or stories associated with the area)? In all cases, such features must be integral to the wilderness. Usually, these features are identified in a Wilderness Management Plan or other planning document. To preserve this quality, it may be necessary to take action to protect these features. However, it is not necessary to preserve all features from natural weathering. Deciding whether and how to protect Other Features of Value occurs in Step 2 and is based upon preserving wilderness character as a whole.

### Wilderness Character Trade-offs to Consider

The above description of the primary tangible qualities of wilderness character is not comprehensive. For a detailed discussion of wilderness character, refer to pages 32-59 in [Keeping It Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System](https://winapps.umt.edu/winapps/media2/wilderness/toolboxes/documents/WC/Landres%20et%20al,%20Keeping%20It%20Wild%202,%202015.pdf), U.S. Forest Service Rocky Mountain Research Station, General Technical Report, RMRS-GTR-340. Additional information is provided at [Wilderness Connect](https://wilderness.net/) in the Wilderness Character Toolbox and in agency-specific policy and guidance.

Taking action often positively affects one or more qualities of wilderness character while negatively affecting others. Positive and negative impacts may even occur within the same quality, moreover. For example, consider an analysis of whether taking action to control an infestation of a non-native invasive weed may be necessary to preserve one or more of the qualities of wilderness character. In the following example, a non-native invasive weed that was not found in the wilderness seven years ago is now present in over 80 percent of the wilderness area. A native endangered plant species has experienced significant decline during the same seven-year period. The endangered plant species is critical to the survival of an endangered species of butterfly.

Untrammeled: With this example, action is not necessary to preserve this quality. The presence of the non-native weed is not an ongoing management decision to trammel, one that the manager has the discretion to stop. *(In fact, if action were to be taken, it would degrade the Untrammeled quality because the action, even if necessary, is an intentional human-caused manipulation of “the earth and its community of life.” Consider that while analyzing alternatives in Step 2, not here.)*

Undeveloped: With this example, action is not necessary to preserve this quality. The non-native weeds are not a development. *(Again, do not confuse necessity**to take action (here) with the effects**of taking action. There might be some degree of development if you used motorized equipment to control the weeds. If so, address it in each alternative under Step 2.)*

Natural: With this example, action is necessary to preserve this quality. While the presence of the non-native weed is an effect of modern civilization on the ecosystem, Step 1 does not determine what action to take. That decision will occur in Step 2 and could include no action (e.g., if taking action would cause more harm to the Natural or other qualities of wilderness character than taking no action at all).

Outstanding Opportunities for Solitude or a Primitive and Unconfined Recreation: With this example, the circumstances of the non-native weed vary widely. Most visitors would not associate the non-native weed with a human activity affecting solitude. However, a major infestation creating a monoculture plantation that is an obvious indication of human effects, or of a weed that effectively prevents movement in an area, may present a situation where action is required to preserve this quality.

Other Features of Value: The circumstances will vary based on the wilderness area’s specific Other Features of Value and will need to be described. For example, it is possible that a monoculture of a non-native weed that creates a condition of poor soil stability could accelerate the weathering of cultural resources identified in the Other Features of Value quality.

### Valid Existing Rights

*Is action necessary to satisfy a valid existing right? If so, cite the specific right, terms and conditions, and source.*

Valid Existing Rights (VERs) are created by a legally binding conveyance, lease, deed, contract, or law. In the wilderness context, VERs normally convey a very limited interest in land (e.g., roads, utility lines, communication sites, minerals, or other similar rights).

Where the right is explicitly defined (i.e., “perfected”), the holder may exercise the right to its full extent but not in excess of the right granted. An example is a right-of-way for an existing road held by deed on a property later acquired by the agency.

Where the right is not explicitly defined, determine its extent before fulfilling the right while preserving wilderness character to the greatest extent. An example is the existence of a general right to develop a road that does not currently exist. The VER owner has a right to a road, but that does not mean the VER owner has absolute discretion as to where to build it and what kind of road it should be. The precise location and specifications would need to be analyzed in Step 2 so that the right can be satisfied in a way that minimizes degradation of wilderness character.

### Special Provisions of Wilderness Legislation

*Is action necessary to satisfy a special provision in wilderness legislation (i.e., Section 4(d) of the Wilderness Act of 1964 or subsequent wilderness enabling laws) that requires action? Cite law and section.*

Special provisions in either the Wilderness Act of 1964 or subsequent designating legislation sometimes require the managing agency to consider taking action. Legal directives stated in terms of “shall” or “must” require that action be taken or mandate that a particular use be allowed.

Legal directives stated in terms of “may” or similar general terms do not require action; they only *allow* for action in wilderness in compliance with the Wilderness Act. Such directives would not be cited in Step 1 but will be considered in Section 2 to inform the development of alternatives.

However, certain special provisions of wilderness legislation stated in terms of “may” further identify an executive branch official to whom the discretion to invoke the provision is granted under criteria separate from the minimum requirements criteria. If the responsible official has invoked that provision, consider it to be a requirement as if it had been written in terms of “shall” (see Example #1 below).

Examine the special provision and describe whether the law states that a specific action “shall” or simply “may” be taken. Legislative history (e.g., Congressional committee reports) may be useful in interpreting the law, but such documents do not have the force of law unless stated in the statute. Special provisions requiring action may apply nationally or on a geographically limited basis. Examples of wilderness legislation with affirmative special provisions include the following:

#### Example #1: Wilderness Act Section 4(d)(1)

(This example applies nationwide)

The first part of this special provision states:

“The use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the [Secretary] deems desirable.”

Under this provision, the Secretary *may* permit the use of aircraft. The criteria for permitting aircraft appear in Section 4(d) of the Wilderness Act: 1) where it has already become established and is thus a continuation of that use; and 2) subject to restrictions the Secretary deems desirable. If the authority (i.e., local land management plan) has exercised discretion to retain an existing airstrip that predates wilderness designation, as documented pursuant to Section 4(d)(1) criteria, you should interpret subsequent management of the airstrip as “necessary” because of the special provision, until such time as the Secretary decides otherwise. To preserve wilderness character to the greatest extent under the provision, the agency must, in Step 2, determine the minimum amount of management activity to sufficiently operate the airstrip.

The second part of this special provision states:

“Such measure may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.”

This provision is implemented under DOI Secretarial Order (SO) 3372, which states: “Utilize active land, vegetation, and wildfire management techniques that are supported by best practices and best available science.” This applies to all DOI lands, including wilderness. Agencies are directed to incorporate into land management plans “vegetation management techniques that are appropriate for the landscape, produce the desired results of reducing fuel loads, and are supported by the best available science.” Agency wilderness manuals then describe the techniques that are appropriate for the landscape. (Note: This SO implements Executive Order (EO) 13855 and does not have a counterpart in USDA. EOs and SOs can be modified or rescinded at any time; verify that an Order is still in place before relying on its direction).

#### Example #2: Clark County Conservation of Public Land and Natural Resources Act, Sec. 210.

(This example applies to all but one wilderness in Clark County, NV) ([Special Provisions - Wilderness Connect For Practitioners](https://wilderness.net/practitioners/toolboxes/special-provisions/default.php))

“Subject to such terms and conditions as the Secretary may prescribe, nothing in this title precludes the installation and maintenance of hydrologic, meteorological, or climatological collection devices in the wilderness areas designated by this title if the facilities and access to the facilities are essential to flood warning, flood control, and water reservoir operation activities.”

This provision applies to 19 wilderness areas managed by three agencies. This provision uses the term “nothing precludes,” which is the converse of a directive stated in terms of “shall” and holds the same non-discretionary meaning. If the placement of hydrologic, meteorological, or climatological collection devices is determined to be essential to flood warning, flood control, and water reservoir operation, it must be allowed. In this case, your analysis must conclude that it is essential to place such a device in the wilderness for those purposes, and that determination should have been made before initiating an MRAF. Once made, cite that determination in Step 1 as having established necessity.

#### Example #3: John D. Dingell, Jr. Conservation, Management, and Recreation Act, Sec. 604.

(This example applies only to the Death Valley Wilderness in California).

“The designation of the Death Valley National Park Wilderness by section 601(a)(1) shall not preclude the operation and maintenance of the Mormon Peak Microwave Facility.”

When special provisions of wilderness legislation necessitate action, determine the minimum action in Step 2.

### Requirements of Other Federal Laws

*Not including special provisions found in wilderness-enabling laws, does another Federal law, by itself or as implemented or interpreted through EO, court order, etc., require action? Cite law and section.*

There are a limited number of Federal laws, by themselves or as implemented or interpreted through EOs, court orders, etc., that require action and/or allow a particular use within designated wilderness. These are typically stated in terms of “shall” or “must.” Federal laws stated in terms of “may” or other general or broad terms do not *require* action; they only allow for action in wilderness when consistent with the Wilderness Act. Unless another law explicitly overrides the Wilderness Act’s requirements, the agency must carry out its actions consistent with the requirements of the Wilderness Act. Agency policy documents are not legal directives and are not considered in this section. Agency policy will be addressed in Step 2, under the “Other Direction” heading.

Under these criteria, identify and cite specific applicable provisions of other Federal laws that require action. When the applicability of another law is in question, wilderness managers should consult with their respective agency wilderness lead, who may seek legal counsel. If no other laws apply, state that in your analysis. Examples of Federal laws with affirmative directives that necessitate action (that may or may not need to take place in wilderness) include but are not limited to the following:

#### Example #1: The Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat, 884) as amended

In this example, the law states, “Federal agencies shall…utilize their authorities…by carrying out programs for the conservation of endangered species and threatened species.” Conservation, as defined in the Act, means “the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measure provided pursuant to the [Endangered Species] Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management."

The affirmative direction from the Endangered Species Act (ESA) requires the agency to take actions necessary to conserve threatened and endangered species, and so the test for necessity in Step 1 of the MRAF *may* have been met. The ESA does not specify any particular type or location of action, only that action is required. This requirement is often consistent with requirements of the Wilderness Act to preserve wilderness character, specifically the preservation of natural conditions (Section 2(c)). Give careful consideration to the possibility of avoiding impacts to wilderness character by conducting actions outside of wilderness that could benefit the species inside of wilderness. The Recovery Plan for the species may help address this question.

In determining how to carry out a particular method or procedure, consider the timing, frequency, duration, and types of uses necessary to recover the species while preserving wilderness character. Methods or procedures that are the minimum necessary for administration of the area as wilderness and the recovery of the threatened or endangered species are determined in Step 2 of the MRAF.

#### Example #2: The Disaster Relief Act (42 U.S.C. 5132, as amended)

In this example, the law states, “The President shall insure that all appropriate Federal agencies are prepared to issue warnings of disasters to State and local officials."

The Disaster Relief Act requires the agency to take actions necessary to issue disaster warnings. This law does not specify a particular type of action, nor that the action must take place in wilderness. If the only way to fulfill the requirements of providing warning is to take action in wilderness, however, this statute establishes the necessity to take *some* action. For example, if placing volcanic hazard monitoring devices outside wilderness does not provide sufficiently accurate readings, placing these devices inside wilderness may be required.

If action cannot be taken outside of wilderness, Step 2 of the MRAF will determine the number and type of facilities, access, duration, and frequency of activities required to provide disaster warning while otherwise preserving wilderness character.

## **Step 1:** **Determination – Is Administrative Action Necessary in Wilderness?**

*Based on the responses and detailed explanations in A through D above, is there a need to proceed to Step 2? If at least one criterion in B through D in Step 1 has been met, or at least one quality of wilderness character is threatened, check the “Yes” box and provide a thorough explanation of the rationale described in A through D. It may also be helpful to describe in this determination how action would be consistent with the public purposes of wilderness or satisfy a specific agency obligation. If none of the criteria have been met, action is not necessary. Check the “No” box, explain why the proposed project does not meet the criteria, and stop your analysis.*

# **Step 2: Determine the Minimum Activity**

## **Other Direction**

*Is there “special provisions” language in Federal law that explicitly allows consideration of (but does not require) a prohibited use? (Step 1 has a similar question in Section C, but that question is specific to other legislation requiring action in wilderness; this question is specific to the legislation addressing consideration of prohibited uses).*

***and/or***

*Has the issue been addressed or prescribed in agency policy, wilderness management plans, other types of management plans, or legal directive (e.g., treaty, EO, court order, or other binding agreement with Federal, state, or local agencies or authorities)?*

If a special provision states that an activity “may” be allowed in wilderness, that law does not require action. Cite it in this section to aid in development of alternatives. Such statutes generally call attention to an activity that may be permissible if it satisfies the minimum requirements criteria. Note that some statutes stated in terms of “may” allow a responsible official to invoke the provision under criteria apart from the minimum requirements criteria and so are cited in Step 1 (see instructions for Part C). Consider the methods identified in the special provision in at least one alternative in Step 2. For example, a special provision for the Pine Forest Range Wilderness says the State of Nevada may use aircraft to manage wildlife populations, guided by the principle of doing only the minimum necessary to manage the area as wilderness (P.L. 113-291, Section 3064(e)). This special provision neither requires an activity nor allows for any method to be used apart from the minimum requirements criteria. Consider the use of aircraft in drafting an alternative(s); you can select such an alternative if you determine it to be the minimum activity to manage wildlife populations.

Frequently, agency policy, wilderness management plans, other types of management plans, or agreements with tribal, state, or local governments or other Federal agencies are integral to the identification of a situation that has prompted an MRA. Consequently, direction identified or prescribed in those plans often should be included in the “Description of the Situation” section in Step 1. Although these documents do not by themselves necessitate action, they often are central in identifying situations that need to be analyzed to determine if action in wilderness is necessary.

In addition, if you have addressed an issue in agency policy, wilderness management plan, other types of management plan, or agreement with tribal, state, and local governments or other Federal agencies, cite the pertinent document and its explicit direction. While the direction contained in these documents is often essential in developing alternatives, those alternatives should not be the only ones considered, nor should they automatically become the Selected Alternative. Unless direction in a plan derives from an MRA, do not use that direction to determine the result of a new analysis.

## **Uncontrollable Timing Requirements**

*What, if any, are the considerations that would dictate timing of the action?*

These considerations apply equally to each alternative. For example, it may be necessary to avoid a critical bird nesting season or seasonal high-water levels in streams. Time requirements 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 limit your alternatives.

## **Workflow Components**

*What are the distinct components or phases of the action?*

Identifying workflow components is the first step in developing and describing alternatives that address the situation/Issue Statement identified in Step 1. For simple issues, there may only be one workflow component while a complex project may require many. Breaking out the workflow in this manner will aid in developing, clearly describing, and comparing alternatives and fully analyzing the impact of each alternative on each quality of wilderness character.

There can be vastly different ways to respond to an issue, so it is important not to set up workflow components in a manner that eliminates feasible alternatives, especially those that avoid uses prohibited by section 4(c). The list of components should be broad enough to support a full range of alternatives. In some alternatives, a certain component may not be applicable, and so may be noted as “N/A” in the description of that alternative.

In the table provided in the workbook, list each distinct workflow component needed to address the Issue Statement. These components will form the basis for comparing the alternatives that follow. Add additional workflow components as needed.

The purpose of this section is to ensure that the agency considers the minimum uses and activities for all steps in the workflow. Without this process, distinct workflow steps could inadvertently be lumped together, resulting in more than the minimum activity occurring (including uses prohibited by Section 4(c)). Identify the distinct components that might differ from one alternative to another. For example:

Transporting personnel and transporting material or equipment may be accomplished by different means. Materials or equipment may be so large that they cannot be transported by foot or stock, so a one-time transport by helicopter may be the minimum necessary. That does not mean that personnel transport to the site requires helicopter landings; personnel could walk in and camp for the duration of the project.

In constructing a fence to protect riparian vegetation from livestock grazing, it may be necessary to use motorized equipment to build corner braces in some terrain. Fence posts, however, could be pounded manually. Identifying one workflow component for building corner braces and another for installing fence posts keeps discrete requirements separate to ensure a minimum number of prohibited uses.

In the example below, assume you have already determined the need to research and monitor wildlife in wilderness. The discrete components are listed as follows:

|  |  |
| --- | --- |
| Component 1 | Transportation of personnel to project site |
| Component 2 | Transportation of equipment to project site |
| Component 3 | Tools used at project site |
| Component 4 | Removal of equipment |

## **Feasibility of Alternatives**

Only include feasible alternatives in this section. Some alternatives that are not feasible may warrant documentation in the “Alternatives Considered but Dismissed” section to provide a brief description and explanation of why it was dismissed and not considered in detail.

Possible reasons for dismissal include alternatives that are:

* Impossible
  + If research shows an alternative is impossible to accomplish by any means, it should not be analyzed in detail.
* Unacceptable impacts
  + Alternatives that would clearly result in inappropriate adverse impacts to wilderness character should not be analyzed in detail.
* Unsafe
  + Most safety issues can be mitigated so that the risk is reduced to an appropriate level. Alternatives that involve risks for workers or the public and that cannot be mitigated should be considered but dismissed.
* Ineffective
  + Alternatives that have been determined to be ineffective in addressing the issue under similar circumstances should not be analyzed in detail.
* Excessive costs
  + Cost is not a factor in determining feasibility unless an alternative is so costly that the funds cannot be obtained, resulting in the issue not being addressed. The amount of funding obtained prior to writing an MRA cannot be used for dismissal.
* Timing
  + Dismiss alternatives that would require time allocations incongruent with urgent situations. This only applies where a gradual or lengthy response would clearly result in unacceptable hazards or significant degradation to wilderness character.

## **Step 2: Alternatives**

### Component Methods

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

It is important to identify the components of the action first before developing the alternatives. Separating an action into components provides a foundation for building well-thought-out alternatives (and promotes consistency among alternatives).

For each alternative, enter the method that will be used to accomplish each component in the “Component Methods for this Alternative” column. This is an iterative rather than linear process. As you describe activities in this section, you may find it necessary to revisit the “Workflow Components” section to revise them and account for the description of an alternative. In some cases, you will have sketched out methods within an alternative that may not work together as a functional alternative. In this case, modify the Component Methods or move them to other alternatives to form functional alternatives. For some alternatives, an individual workflow component might be marked as “not applicable.”

Here is the wildlife research and monitoring example in an alternative called “Installation of Monitoring Cameras” (again, assume you have already determined in Step 1 that action is necessary).

|  |  |  |
| --- | --- | --- |
| **Workflow Components** | | **Component Methods for this Alternative** |
| **#1** | Transportation of personnel to project site | Workers walk to work site. |
| **#2** | Transportation of equipment to project site | Tools used to set up/clear sites will be non-motorized and non-mechanized. Equipment transported by foot or by stock. |
| **#3** | Tools used at project site | Hand saws to clear vegetation, battery-powered monitoring camera, nylon strap to affix camera to tree, hand tools to install an attractant wooden stake near camera. |
| **#4** | Removal of equipment and final condition of site | Stations would be dismantled and removed from wilderness after monitoring is completed. |

Use the methods identified for each of the workflow components as the basis for preparing a detailed narrative description of the alternative.

### Description of Alternatives

*What are the details of each alternative? When, where, and how will the action occur? What mitigation measures will be taken? Provide a complete narrative description of the Component Methods identified above.*

***For each alternative***, give it a short name in the first text box (e.g., No Action, Removal by Foot and Stock). In the larger text box, describe in detail the 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, etc.

Identify and describe a full range of feasible alternatives, including (as applicable) alternatives that use:

* A proposed Section 4(c) prohibited use(s)
* A combination of Section 4(c) prohibited uses (e.g., motor vehicles) and non-prohibited uses (e.g., pack stock)
* No Section 4(c) prohibited uses

For each alternative:

1. Describe in detail if an authorization is proposed for any activities that are prohibited for the general public (e.g., scientific collecting, exceeding group size, etc.).
2. Describe the quantities of all Section 4(c) prohibited uses, including:

* **Temporary road:** Identify duration of use, length of road, approximate location, degree of development, etc.
* **Motor vehicle:** Estimate days and hours of use. State decibel levels, if known.
* **Motorized equipment:** Estimate days and hours of use. State decibel levels, if known.
* **Motorboat:** Estimate days and hours of use. State decibel levels, if known.
* **Landing of aircraft:** Identify number of landings, including delivery of materials via drop-off or pick-up.
* **Other form of mechanical (motorized or non-motorized) transport:** Identify the travel route and estimated days and hours of use.
* **Structures and installations:** State the number and location of each. If temporary, state the date of removal.

1. Describe any other tools or actions that may affect wilderness character. For example, tools such as the use of explosives or the total flight time over a wilderness may each affect wilderness character even though the Wilderness Act prohibits neither. In addition, actions by employees, including the size of their work group or the timing and duration of their stay, are not prohibited by the Wilderness Act but may affect wilderness character.

A No Action alternative is often necessary to facilitate a comprehensive comparison of the effects of taking any action. For example, the No Action alternative can:

* + - Provide a comparison that identifies if an action alternative would cause greater degradation to wilderness character than doing nothing at all.
    - Provide short- and long-term comparisons of effects.

In some situations, the No Action alternative might better preserve the qualities of wilderness character than taking action. This is especially true with more complex issues. Generally, only simple issues do not warrant a No Action alternative.

Action alternatives that 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, in the section titled “Alternatives Considered but Dismissed.”

Mitigation measures: Mitigation measures are actions that reduce or eliminate the negative impacts of a given component of the alternative. 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. For example, a common mitigation measure for scientific installations is a requirement that they be painted a matte color that blends with the landscape to reduce visibility. A mitigation measure for helicopter flights might be to avoid bird nesting season.

### Criteria for Comparing Alternatives

For each activity specific to this alternative, check whether the activity has a positive, negative, or no effect on each of the following comparison criteria. In the text box provided, describe the type, duration, and magnitude of the effects. Note that it is possible to check both positive and negative boxes if the proposed activity will have both effects.

After discussion of each of the qualities of wilderness character below, a common example follows (the aforementioned proposal to install monitoring cameras in a wilderness). Explanatory notes appear in red, describing why particular activities were “graded” as they were.

#### Wilderness Character

*What is the effect of each Component Method on the qualities of wilderness character? What mitigation measures will be taken?*

#### Untrammeled

Identify how this quality is positively impacted where a trammeling action 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 if the manipulation would ultimately improve the Natural quality, such as eliminating a non-native species. Any manipulation of the biophysical environment has a negative impact to this quality. The only way a positive effect to this quality could be registered is if the proposal would stop an ongoing manipulation of the biophysical environment.

The negative effect to the Untrammeled quality is greater when:

* There is an increase in the number of ecological components or processes affected.
* The proposed action intends to shape resulting ecological conditions or processes rather than merely remove a human-caused condition.
* The goals of the action are highly prescriptive, requiring more choices made by people rather than nature.
* The proposed action is likely to require multiple interventions.
* The risk of unintended consequences is high.
* The proposed action has not been tested in the same or a similar ecosystem.

For projects where the intent is not to manipulate wilderness ecosystems (e.g., removing a structure or preserving solitude), simply state that there is no effect and, if appropriate, describe the impacts to one or more of the other qualities.

For actions that intend to manipulate natural conditions or processes, consider the following questions:

* Describe the number of processes or ecosystem components affected, and complexity, area, and type of the trammeling.
  + What is the scope of the action: Does it affect multiple species or processes?
  + What is the size of the area involved?
  + What is the degree or intensity of the manipulation: Does it shape ecological conditions or remove a condition caused by modern humans (as defined in Section 2(a) of the Wilderness Act)?
  + What is the breadth of the ecological goals of the proposal?
  + What type and duration of trammeling is proposed? Does it involve a single action or long-term control and manipulation (e.g., one-time moving of a species or a permanently installed fish ladder)?
* What is the likelihood of avoiding or needing future trammeling?
  + Will the trammeling result in natural processes resuming or the avoidance of future trammeling?
  + What is the risk of unintended consequences, and what would those consequences be?
* Is this a reliable, tested manipulation of the ecosystem?
  + What is the probability of success?
  + Has the action been tried in this type of ecosystem before?
  + How extensive has the action been used or tested?
  + Was the action shown to be reliable, or is this an experiment?

##### Cumulative Impacts

Within the area addressed in the Issue Statement in Step 1, identify ongoing trammeling actions occurring concurrently within the issue area and future impacts (planned, in planning, or expected (but not speculative)). Would the evaluation questions be answered differently if this alternative were to be considered together with ongoing or future impacts? Consider unique synergistic and countervailing (mitigating) impacts resulting from interaction of the alternative and ongoing or further impacts in addition to additive impacts.

| Component # | For each component number, indicate the impact the **method** **for this alternative** will have on each of the five qualities of Wilderness:  Positive = P, Negative = N, No Effect = 0  *Describe in detail the impacts to each of the*  *five qualities in the narrative section below* | Untrammeled | Undeveloped | Natural | Solitude or Primitive and Unconfined Recreation | Other Features of Value |
| --- | --- | --- | --- | --- | --- | --- |
| #1 | Workers walk to work site. | 0 |  |  |  |  |
| #2 | Tools used to setup/clear sites will be non-motorized and non-mechanized. Equipment transported by foot or by stock. | 0 |  |  |  |  |
| #3 | Hand saws to clear vegetation, battery-powered monitoring camera, nylon strap to affix camera to tree, hand tools to install an attractant wooden stake near camera. | N |  |  |  |  |
| #4 | Stations would be dismantled and removed from wilderness after monitoring is completed. This includes removing the camera, nylon strap, attractant, and wooden stake. | 0 |  |  |  |  |

Explain the intensity of the action that would intentionally control, manipulate, or hinder the conditions or processes of ecological systems:

The installation of an attractant to intentionally lure wildlife to the camera location is manipulating the movement of wildlife. No other actions are intentionally controlling, hindering, or manipulating natural processes or conditions. (Note: There are no positive impacts because the activity is not undoing a previous control of the community of life.)

#### Undeveloped

Describe the positive or negative impacts to this quality in terms of how “the imprint of man’s work [would remain] substantially unnoticeable,” and how wilderness will continue to contrast with 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.

This quality is degraded by the presence of structures, installations, or the use of motor vehicles, motorized equipment, or other forms of mechanical transport that increases people’s ability to occupy or modify the environment. Examples include communication equipment, monitoring installations, administrative cabins, trail bridges, helicopter landings, and the use of chainsaws, pumps, motor vehicles, motorboats, etc. An alternative that uses none of these prohibitions would have no impact on this quality. An alternative that removes a structure or installation or otherwise stops a prohibited use would have a positive effect on this quality. An alternative that uses a less powerful tool (e.g., using a wheelbarrow instead of a motor vehicle to transport material) may have less of a negative effect on this quality. Note that when a proposal is broken down into phases or components, more than one effect to this quality may occur. 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.

For actions that involve a structure, motor vehicle, etc., consider the following questions:

* What is the type and degree of development?
* What are the number and duration of structures and installations, and how advanced are materials or technology?
  + What are the number and size of structures and installations, and how long will they be there?
  + To what degree can they transform the landscape?
  + How many structures and installations are currently in the project area, and what is the cumulative effect?
* What motorized tools or motorized or mechanical transport are proposed for use, including number, duration, and power of tool(s)?
  + What are the types, number of uses, and amount of time motorized tools or motorized or mechanical transport will be in use?
  + How large of an area in the wilderness will they affect?
  + To what degree can they transform the ecosystem?

##### Cumulative Impacts

Within the area addressed in the Issue Statement in Step 1, identify existing developments within the issue area and future developments (planned, in planning, or expected (but not speculative)). Would the evaluation questions be answered differently if this alternative were to be considered together with ongoing or future impacts? Consider unique synergistic and countervailing (mitigating) impacts resulting from interaction of the alternative and ongoing or further impacts in addition to additive impacts.

| Component # | For each component number, indicate the impact the **method** **for this alternative** will have on each of the five qualities of Wilderness:  Positive = P, Negative = N, No Effect = 0  *Describe in detail the impacts to each of the*  *five qualities in the narrative section below* | Untrammeled | Undeveloped | Natural | Solitude or Primitive and Unconfined Recreation | Other Features of Value |
| --- | --- | --- | --- | --- | --- | --- |
| #1 | Workers walk to work site. |  | 0 |  |  |  |
| #2 | Tools used to set up/clear sites will be non-motorized. Equipment transported by foot or by stock. |  | 0 |  |  |  |
| #3 | Hand saws to clear vegetation, battery-powered monitoring camera, nylon strap to affix camera to tree, hand tools to install an attractant wooden stake near camera. |  | N |  |  |  |
| #4 | Stations would be dismantled and removed from wilderness after monitoring is completed. This includes removing the camera, nylon strap, attractant, and wooden stake. |  | 0 |  |  |  |

Explain the effects to this quality in terms of how “the imprint of man’s work [would remain] substantially unnoticeable,” and how wilderness will continue to be in contrast to other areas of “growing mechanization”:

Non-motorized transportation or tools do not affect this quality (Note: Using traditional, non-motorized tools—or no tools at all—does not make the wilderness less developed (and so described as a positive impact); it merely keeps the wilderness from becoming negatively developed (a no-effect impact, in other words).

The presence of a camera, even though not permanent, is an occupation and modification of the environment. Even though the camera will be removed when monitoring is complete, the installation of the camera is a negative effect; removing the camera at the end of the project is merely returning the wilderness to conditions prior to the project, thus no effect.

#### 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) including endangered, threatened, or rare species, natural biological diversity, and self-regulating ecosystems.

Where applicable, include a discussion of the effects related to protecting natural conditions within the regional landscape (i.e., insects, disease, non-native species).

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 allowing non-native invasive species to become established or expanding the suppression of natural fire. Examples of preservation of this quality may include the effects of successfully treating non-native species, restoring native species, or allowing natural fire (if doing so would allow the resulting fuel loading to fall once again within a natural range of variability). 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 threatened and endangered species would be a positive impact to this quality (if necessary to maintain the species within a natural range of variability) and a negative impact because of the change to the area’s natural hydrology.

For alternatives intended to produce positive effects to the Natural quality, alternatives intended to respond to other issues, and No Action alternatives, describe:

* Magnitude: area, duration, number of ecological components affected
  + Describe the effect, both positive and negative, to the conditions and processes affected.
* Ecological significance of the area, species, or processes affected
  + Describe if the effect would be to a species, community, or process of known ecological importance.
* Risk of increasing or unintended effects
  + Is the condition or threat stable, improving, or getting worse? What is the likely future trend?
  + Is the action proposed in the alternative known to be reliable in this ecosystem, or is it an experiment?
* Understanding of natural conditions or processes at risk
  + Describe the impact of the alternative in mitigating conditions that are a result of modern human activity.
    - What is the certainty that the conditions addressed are a result of human impact?
    - Is the current condition within the range of natural variability?
    - Would the alternative result in an ecosystem that reflects human desires rather than natural processes?
    - Is the alternative limited to the human-caused change to the ecosystem?
  + What is the likelihood of irreversible changes?
  + What is the likelihood of the ecosystem being able to be self-sustaining (without further management input), and how long will it take to be in that condition? What risks are associated with waiting?

##### Cumulative Impacts

Within the area addressed in the Issue Statement in Step 1, identify current impacts to the Natural quality within the issue area and foreseeable impacts (expected, but not speculative). Would the evaluation questions be answered differently if this alternative were to be considered together with ongoing or future impacts? Consider unique synergistic and countervailing (mitigating) impacts resulting from interaction of the alternative and ongoing or further impacts in addition to additive impacts.

| Component # | For each component number, indicate the impact the **method** **for this alternative** will have on each of the five qualities of Wilderness:  Positive = P, Negative = N, No Effect = 0  *Describe in detail the impacts to each of the*  *five qualities in the narrative section below* | Untrammeled | Undeveloped | Natural | Solitude or Primitive and Unconfined Recreation | Other Features of Value |
| --- | --- | --- | --- | --- | --- | --- |
| #1 | Workers walk to work site. |  |  | 0 |  |  |
| #2 | Tools used to set up/clear sites will be non-motorized. Equipment transported by foot or by stock. |  |  | 0 |  |  |
| #3 | Hand saws to clear vegetation, battery-powered monitoring camera, nylon strap to affix camera to tree, hand tools to install an attractant wooden stake near camera. |  |  | P |  |  |
| #4 | Stations would be dismantled and removed from wilderness after monitoring is completed. This includes removing the camera, nylon strap, attractant, and wooden stake. |  |  | 0 |  |  |

Explain the effects to this quality in terms of protection, degradation, or restoration of natural conditions:

Walking crews and equipment to the project site, as well as dismantling and removing monitoring equipment, will not affect the Natural quality.

The act of collecting data from cameras will have no effect on the Natural quality.

(Note: Impacts that might be avoided (e.g., clearing vegetation during nesting season for another species) 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).

(Note: In this scenario, be careful about stating that collecting data has a beneficial effect on the Natural quality. Data itself does not change conditions on the ground. Management actions taken because of the data is what could affect the Natural quality, either positively or negatively. If future management actions are identified because of the data, a separate analysis could potentially find that the management action would improve natural conditions on the ground, and thus have a positive effect on the Natural quality).

#### Outstanding Opportunities for 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 could affect his or her experience in wilderness. Include negative impacts to visitors from the use of motorized equipment, mechanical transport, landing of aircraft, structures, or installations as well as positive impacts from actions that preserve or improve opportunities. If necessary, describe these positive or negative impacts separately for each sub-part of this quality: Outstanding Opportunities for Solitude; Primitive Recreation; and Unconfined Recreation.

Settings that degrade or improve these opportunities will affect this quality. Examples of degradation include: management actions that cause (by action or inaction) loss of opportunities due to crowding or too many visitor encounters (affecting opportunities for solitude); facilities or other signs of modern civilization (affecting opportunities for primitive recreation); or excessive restrictions on visitor behavior (affecting opportunities for unconfined recreation). An alternative that manages visitor use to increase solitude, for example, would have a positive impact on this quality. This same alternative, however, would have a negative impact on this quality by restricting visitors. Some management actions may be necessary to preserve one or more of the other qualities even though doing so would degrade the Outstanding Opportunities quality. For example, fire grates, toilets, trail bridges, and designated campsites degrade this quality as well as the Undeveloped quality but may be necessary to preserve the Natural quality.

If an alternative has both positive and negative impacts to this quality, check both boxes and explain in the space provided.

Any change to:

* Visitor encounters?
  + What is the current use level of the area?
  + Describe change in frequency and timing of encounters.
  + Describe if a visitor’s encounters with employees would deviate from standard levels of frequency, timing, or group size for visitor encounters in the wilderness.
  + Describe current sensitivity of visitors based on quality of solitude at time of designation and changes in the timing of encounters (daily or seasonally).
* Number of structures or installations (are they primitive or modern)?
  + Describe size, color, placement, type of materials, and other factors that would make the structures or installations more or less visible and thus a reminder of “expanding settlement” (Section 2(a) of the Wilderness Act).
* Amount of aircraft, vehicle, or motorized tool use?
  + Describe the duration, magnitude, and intensity of the impact.
  + Describe noise level.
  + Describe sensitivity of visitors based on quality of solitude at time of designation and timing of use during periods of or in areas of greater visitor sensitivity.
* Restrictions on visitors?
  + Describe if temporary, permanent, or seasonal restrictions will result.
  + Describe if visitors will be restricted from certain locations, including from camping at will.
  + Describe any invasions of privacy.
* The setting's natural or primitive appearance?
  + How remote is the area that will be affected?
  + How natural does the area currently appear?

##### Cumulative Impacts

Within the area addressed in the Issue Statement in Step 1, identify loss of solitude, degradation to primitive recreation, and existing confinement of visitors. Also identify expected (but not speculative) impacts. Would the evaluation questions be answered differently if this alternative were to be considered together with ongoing or future impacts? Consider unique synergistic and countervailing (mitigating) impacts resulting from interaction of the alternative and ongoing or further impacts in addition to additive impacts.

| Component # | For each component number, indicate the impact the **method** **for this alternative** will have on each of the five qualities of Wilderness:  Positive = P, Negative = N, No Effect = 0  *Describe in detail the impacts to each of the*  *five qualities in the narrative section below* | Untrammeled | Undeveloped | Natural | Solitude or Primitive and Unconfined Recreation | Other Features of Value |
| --- | --- | --- | --- | --- | --- | --- |
| #1 | Workers walk to work site |  |  |  | 0 |  |
| #2 | Tools used to set up/clear sites will be non-motorized. Equipment transported by foot or by stock |  |  |  | 0 |  |
| #3 | Hand saws to clear vegetation, battery powered monitoring camera, nylon strap to affix camera to tree, hand tools to install an attractant wooden stake near camera |  |  |  | N |  |
| #4 | Stations would be dismantled and removed from wilderness after monitoring is completed. This includes removing the camera, nylon strap, attractant, and wooden stake. |  |  |  | 0 |  |

Explain how opportunities for visitors to experience solitude or a primitive and unconfined type of recreation will be protected or degraded. As appropriate, describe solitude, primitive recreation, and unconfined recreation separately:

Encountering a few employees with hand tools and equipment will have virtually no effect on opportunities for solitude as the group size and frequency of encounters with employees would be similar to expected encounters in this wilderness.

Even though camera stations will be set up away from trails to lessen the noticeability and impact to wilderness visitors, these installations would have a negative impact on visitors who come across them.

Removing the camera at the end of the project is merely returning the wilderness to conditions prior to the project, thus no effect.

This alternative will have no effect on opportunities for primitive recreation.

#### Other Features of Value

Identify any values or characteristics of this wilderness (e.g., "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 the proposal may have on these features. Heritage and cultural resources, including historic sites and paleontological localities, may be included here.

This quality is intended to incorporate features that are truly unique and integral to the designation or management of the area as wilderness. The following questions were provided in [Keeping It Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System](https://winapps.umt.edu/winapps/media2/wilderness/toolboxes/documents/WC/Landres%20et%20al,%20Keeping%20It%20Wild%202,%202015.pdf) to help staff determine whether a feature is unique and integral to wilderness:

* Is the feature specifically identified in the enabling legislation for the wilderness?
* Does the feature define how people think about the wilderness, or how they value the wilderness?
* Is the feature nationally recognized (for example, through an official designation such as the National Register) or considered a priority heritage asset (for example, identified as significant in an agency plan)?

An alternative that degrades any of these features would have a negative impact on this quality while an alternative that improves them would have a positive impact. The alternative may have no impact on this quality, either from simply not degrading the quality, or because the wilderness area lacks other features of value that might be affected by the proposal.

* Will the activity help to realize the scientific, educational, scenic, or historic values of the feature?
  + Is action necessary to prevent the loss of these values?
  + Will these values not be realized unless action is taken?
* Describe the nature of the effect.
  + How will the alternative impact the feature either positively or negatively?
* Are there irreversible impacts?
  + Are irreversible impacts considered to be an acceptable natural process?
  + Are irreversible impacts human caused?
* Why is the effect significant? (include intangible elements)
  + What group or entity would be affected by damage or loss of this feature (including personal, spiritual, cultural impacts, where they have been expressed by the group)?
  + Are natural impacts (weathering) considered to be acceptable for the feature and the values the feature represents?
  + Can impacts be appropriately mitigated to preserve the meanings and values of the features?

##### Cumulative Impacts

Within the area addressed in the Issue Statement in Step 1, identify ongoing impacts to other features of value occurring concurrently within the issue area and future impacts (planned, in planning, or expected (but not speculative)). Would the evaluation questions be answered differently if this alternative were to be considered together with ongoing or future impacts? Consider unique synergistic and countervailing (mitigating) impacts resulting from interaction of the alternative and ongoing or further impacts in addition to additive impacts.

| Component # | For each component number, indicate the impact the **method** **for this alternative** will have on each of the five qualities of Wilderness:  Positive = P, Negative = N, No Effect = 0  *Describe in detail the impacts to each of the*  *five qualities in the narrative section below* | Untrammeled | Undeveloped | Natural | Solitude or Primitive and Unconfined Recreation | Other Features of Value |
| --- | --- | --- | --- | --- | --- | --- |
| #1 | Workers walk to work site |  |  |  | 0 |  |
| #2 | Tools used to set up/clear sites will be non-motorized. Equipment transported by foot or by stock |  |  |  | 0 |  |
| #3 | Hand saws to clear vegetation, battery powered monitoring camera, nylon strap to affix camera to tree, hand tools to install an attractant wooden stake near camera |  |  |  | N |  |
| #4 | Stations would be dismantled and removed from wilderness after monitoring is completed. This includes removing the camera, nylon strap, attractant, and wooden stake. |  |  |  | 0 |  |

Explain any effects to features of scientific, educational, scenic, or historical value that are integral to the character of the wilderness area and are not accounted for in the above qualities, including cultural and paleontological resources:

There are no other features of value affected by this alternative.

#### After completing Alternative 1, follow the instructions above to draft additional

**alternatives.**

For each alternative, identify the method that will be used to accomplish each component.

Repeat as necessary for each alternative.

## **Step 2: AlternativesConsidered but Dismissed**

*What alternatives were considered but dismissed? Why were they dismissed?*

Document alternatives considered but dismissed as part of your review, as appropriate. Moreover, briefly describe the dismissed alternatives in the Step 2 Determination rationale to show that the analysis considered a full range of alternatives. 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 clearly cause unacceptably adverse impacts to wilderness character.
3. Actions that would cause an unacceptable safety risk to workers or the public that cannot be mitigated.
4. Actions that have proven not to be effective.
5. Actions that are not responsive to the issue.
6. Actions that are so costly that they could not be implemented immediately, and wilderness character would be degraded because of failure to respond in a timely manner.
7. Alternatives that are not technically or legally feasible.

Do not eliminate alternatives from full consideration simply because implementation would take more time, money, or personnel, 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, fully evaluate them regardless of cost.

## **Step 2: Determination – What is the Minimum Activity?**

### Selected Alternative

List the selected alternative that represents the minimum requirements necessary to administer the area as wilderness. Describe the rationalefor selecting that alternative in the text box provided.

Provide a comparison of the alternatives and state why the selected alternative best preserves wilderness character as a whole as compared to the other alternatives considered. Make an affirmative statement that after considering all the impacts and benefits cumulatively for each alternative, the selected alternative preserves wilderness to the greatest degree. Describe the degree of degradation or improvement to wilderness character to support the conclusion for selecting the preferred alternative.

The determination must document a comparative analysis where the variables are considered in relation to one another and the interests at stake are weighed. It must: (1) balance competing qualities of wilderness character, (2) determine which is the most important quality(s) under the given circumstances, and (3) rationalize the method(s) chosen to protect that quality(s). The positive or negative effects to each quality noted in the “Comparison of Alternatives” section serve as a starting point for the discussion.

The determination does not have to recount every effect on every quality of wilderness character for each alternative. Rather, it should focus on those qualities and effects that are driving the determination, and how one quality was considered in relation to the others. The discussions in the explanatory text boxes in this section will provide a way to assess and compare the magnitude of the effects, forming a justification for the determination. The selected alternative should be the one that best preserves wilderness character as a whole.

The rationale should demonstrate that the determination is clearly a result of objective evaluation of the alternatives, 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 Considered but Dismissed” section.

Articulate the cumulative effects of your determination. This should include both past effects as well as reasonably foreseeable future effects to the same qualities, and from other actions (e.g., pertinent ecological interventions, installations, or structures). In some cases, regional consideration may be appropriate. If monitoring has identified a trend in a specific quality, note it in your selected alternative.

The selected alternative must conform to all applicable laws. When the determination involves a special provision or requirements of other laws, explain how the selected alternative represents the minimum required to realize those provisions while also preserving wilderness character to the degree feasible.

The selected alternative should also be consistent with agency policy. Cite the specific criteria, direction, standard, or guideline that applies and explain how the alternative complies.

There is no need to address each item included in the “Other Direction” section of the MRAF workbook. However, the rationale should briefly demonstrate consistency and compliance with key provisions of policies and other guidance, some of which may have been listed in the “Other Direction” section.

Goals and objectives of projects, plans, or other guidance are not relevant unless those goals and objectives are tied to wilderness character. A Wilderness Stewardship Plan, for instance, may identify thresholds for particular Wilderness Act Section 4(b) purposes, such as visitor use capacities or limits on scientific installations. If the selected alternative will affect the realization of those purposes, that effect should be noted. Cite any relevant guidance.

The Wilderness Act contains no provision that allows the use of “faster, cheaper, and easier” as a criterion for authorizing any of the prohibited uses. The only criteria are: 1) that such uses are the minimum necessary for wilderness administration, and 2) that wilderness character is preserved. Agency policies may define or even expand upon these criteria.

The discussion should explain how the determination will preserve wilderness character as a whole and explain how the determination reflects the fundamental values of humility and restraint. These can often be the deciding factor when justifying why one value or quality is chosen over another. For example, any *irreversible* impacts (e.g., alteration of bedrock, the release of a non-native bioagent, the preventable loss of a species) inherently conflict with the notions of humility and restraint. The determination should not be based on optimizing wilderness character but preserving wilderness character while minimizing human actions. Select the alternative that collectively minimizes the existing or future degradation to all qualities of wilderness character and thus preserves wilderness character overall.

The determination should also include a list of all:

* Section 4(c) prohibitions allowed by the determination, with all limitations and mitigation measures listed (e.g., the number of helicopter landings, type and number of installations and the required date of their removal, or types of motorized equipment allowed and the amount of their use) but remain prohibited to the general public.
* Other required mitigation measures.
* Monitoring and/or reporting requirements, when applicable, related to the approved action.

For authorizations in wilderness areas administered by the Forest Service, record and report any authorizations of Wilderness Act Section 4(c) prohibited uses in the Natural Resource Manager – Wilderness database, as part of end-of-year reporting.

### 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 determination.