MEASURING ATTRIBUTES OF WILDERNESS CHARACTER

BLM Implementation Guide 3.0

March 2024

TABLE OF CONTENTS

INTRODUCTION

This monitoring effort is based on the statutory requirements of The Wilderness Act of 1964. In both the Act's "Statement of Policy" (Section 2(a)) and "Use of Wilderness Areas" (Section 4(b)), managers are directed to "preserve wilderness character." Although never explicitly defined, "wilderness character" is circumscribed in the Act by four qualities required of wilderness areas, and a fifth quality that includes values the Act says "may" be present (Section 2(c)). The "qualities" of wilderness character are:

1) **Untrammeled:** A "trammel" is literally a net, snare, hobble, or other device that impedes the free movement of an animal. Here, used metaphorically, "untrammeled" refers to wilderness as essentially unhindered and free from modern human control or manipulation. The Wilderness Act defines wilderness as, "an area where the earth and its community of life are untrammeled by man," and is "affected primarily by the forces of nature." Wilderness is essentially unhindered and free from the intentional actions of modern human control or manipulation.

2) **Natural:** Wilderness ecological systems are substantially free from the effects of modern civilization. It is "protected and managed so as to preserve its natural conditions."

3) **Undeveloped:** Wilderness has minimal evidence of modern human occupation or modification. It is land "retaining its primeval character and influence," "without permanent improvements or human habitation," "with the imprint of man's work substantially unnoticeable," and "where man himself is a visitor who does not remain."

4) **Solitude or Primitive and Unconfined Recreation:** Wilderness provides opportunities for people to experience natural sights and sounds, solitude, freedom, risk, and the physical and emotional challenges of self-discovery and self-reliance. It "has outstanding opportunities for solitude or a primitive and unconfined type of recreation" and "shall be administered…in such manner as will leave them unimpaired for future use and enjoyment as wilderness."

5) **Other Features of Value:** Wilderness areas "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." Though these values are not required of any wilderness, where they are present, they are part of that area's wilderness character and must be protected as rigorously as any of the four required qualities. They must be site-specific features, integral to wilderness character. These values may or may not overlap with the other four qualities. They are usually identified in the area's designating legislation, legislative history, original wilderness inventory, wilderness management plan, or at some other time after designation.

In 2008, an interagency team developed fourteen indicators and suggested possible measures used to monitor trends in wilderness character as described in *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character.* In 2010 a small interdisciplinary team of BLM employees selected the initial measures for those indicators to be used in BLM wilderness areas, and developed the techniques detailed to generate data for each measure. Over the years, BLM has published updated versions (1.1, 1.3, 1.5, 2.0 etc.) and this proposed version, 3.0, will replace version 2.0 of the BLM Implementation Guide. These previous versions incorporated the revised strategy developed from lessons learned and compiled in 2015 for *Keeping It Wild 2: An Updated Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System*. Significant changes to this version include:

1. Placing Measure 2-1 "status of native biological communities" on hold until a suitable data source is in place.
2. Updating measure 2-8 "Departure from Natural Fire Regime" to Vegetation Condition Class. Moved to measure 2-1.
3. Reserving air quality for future development when centrally gathered methods are more possible.
4. Providing a data source section in each measure to ease the gathering of information.
5. Creating templates for baselines, five-year reports, and annual reports.
6. Updating formatting and style to replicate the BLM and National Conservation Lands Visual System Guidelines.

This Implementation Guide will be revised repeatedly over time. Each iteration will adhere to the core commitment to using measures that are adequate yet cost-effective. In meeting this commitment, the BLM must follow two principles:

1) Specific data sources must be referenced in reports, so that departures from baseline conditions can be tracked over many years. It is expected that every Field Office will maintain individual files for each wilderness in its jurisdiction, including inventory maps, data-gathering protocols, or other metadata sufficient for tracking trends.

2) Monitoring the select indicators described in *Keeping It Wild 2* is necessary but not sufficient for the proper stewardship of an individual wilderness. The monitoring described by this framework is part — but **only part** — of the monitoring plan needed for an individual unit of the National Wilderness Preservation System. For instance, "While *Keeping it Wild* requires BLM to monitor the status of non-native plant species every five years, in some cases it may be necessary to monitor conditions more frequently such as during post-wildfire rehabilitation.

The data used in measures for wilderness indicators necessarily come from multiple sources and cover multiple disciplines. Successful monitoring and detection of trends requires that wilderness specialists work closely with staff in practically every other program at BLM. Specialists should confer with archaeologists, fire management specialists, botanists, range conservationists, recreation planners, geologists, and invasive weed specialists, among others. Solid working relationships with Field Office and District staff are essential to monitoring — and stewardship — of the wilderness resource.

Because of differences between wilderness areas due to geography, biology, legal constraints, and social pressures, these indicators **should not** and **cannot** be used to compare different wildernesses. They are designed to monitor changes at **one** wilderness over time. What can (and will) be compared and aggregated at a regional and national level is simply whether wilderness character is improving, stable, or degrading.

Intent of this Implementation Guide

This monitoring cannot, by itself, be used to evaluate the success of the BLM's management of a wilderness. Some of the measures are beyond the control of the manager, and some are not. A decline in wilderness character may reflect an overall decline in the region in which the wilderness is located and have nothing to do with an agency decision affecting the wilderness. Conversely, a stable trend in condition may not reveal that a Section 4(c) prohibited use existing before designation has been left unaddressed.

Every effort has been made to include measures that are feasible and significant. Some measures are not entirely within the control of the BLM; a few are almost entirely outside the BLM's control. They are included as important measures of changes in wilderness character but should not be used to evaluate management effectiveness. Conversely, some important measures largely beyond the BLM's control are excluded simply because of the infeasibility of gathering data of sufficient refinement for assessing trends at one wilderness (e.g., night sky visibility). In any event, the data captured for each measure should represent a single fiscal year (October 1 of one year to September 30 of the following year).

This guidance is intended to help the BLM manage wilderness effectively at both the local and national levels. Information about how actions affect wilderness character should help guide managers in their day-to-day wilderness stewardship. Documentation of trends in wilderness character will help the BLM determine how well it is fulfilling the congressional mandate to "preserve wilderness character."

The outline beginning page 9 describes the measures the BLM will use to assess change in each indicator. The indicators will be used to answer questions that have been asked to determine the trends in each quality of wilderness character. Measures are fully described beginning on page 15.

Other Monitoring Requirements

Wilderness character monitoring is not the only monitoring that the BLM must conduct in wilderness. Although wilderness character monitoring is the core monitoring program for wilderness areas, other monitoring needs remain. The monitoring described in this Implementation Guide is limited to the conditions of wilderness character, not the BLM's compliance with its wilderness policy or a third party's compliance with an agency-issued permit.

For example, the following types of monitoring are important to preserving wilderness character but cannot be incorporated into this monitoring system:

- Outfitter and guide compliance with a Special Recreation Permit (SRP)
- Assurance of the fulfillment of water rights associated with the federal wilderness reservation,
- Inholding owner compliance with a 2920 permit (land use application, ROW).
- Permittee compliance with terms and conditions of a grazing permit or lease.

NATIONAL CONSERVATION LANDS

WILDERNESS CHARACTER OUTLINE

Wilderness Character Outline

Untrammeled

What are the trends in actions that intentionally control or manipulate the "earth and its community of life" inside wilderness?

Actions authorized by the federal land manager that intentionally manipulate the biophysical environment

1-1. Number of authorized actions and persistent structures designed to manipulate plants, animals, pathogens, soil, and water

1-2. Percent of natural fire starts that are manipulated within the boundaries of the wilderness

Actions not authorized by the federal land manager that manipulate the biophysical environment

1-3. Number of unauthorized actions by agencies, citizen groups, or individuals that manipulate plants, animals, pathogens, soil, water, or fire

Natural

What are the trends in the natural environment from human-caused change?

Ecological Processes

2-1. Departure from historical vegetation using Vegetation Condition Class (VCC) [pilot testing]

Plants

2-2. Abundance and distribution of non-native plant species

Animals

2-3. Abundance and impact of non-native animal species

2-4. AUMs of livestock use inside wilderness

Others, On hold

Status of native biological communities (formerly 2-1)

Air quality measures

More information in the on hold section

Undeveloped

What are the trends in non-recreational physical development?

Presence of non-recreational structures, installations, and developments

3-1. Index of physical development for structures or installations

Presence of inholdings

3-2. Area and existing or potential impact of inholdings

What are the trends in mechanization?

Use of motor vehicles, motorized equipment, or mechanical transport

3-3. Type and amount of administrative use (but not law enforcement or emergency use) of motor vehicles, motorized equipment, and mechanical transport

3-4. Proportional use of motor vehicles, motorized equipment, and mechanical transport in law enforcement or emergency responses

3-5. Type and amount of use of motor vehicles, motorized equipment, or mechanical transport not authorized by the federal land manager

Solitude or Primitive and Unconfined Recreation

What are the trends in outstanding opportunities for solitude?

Remoteness from sights and sounds of people inside the wilderness

4-1. Amount of visitor use

4-2. Remoteness inside the wilderness affected by travel routes

Remoteness from occupied and modified areas outside the wilderness

4-3. Area of wilderness affected by developments near the wilderness

4-4. Severity of the effect of developments near the wilderness

What are the trends in outstanding opportunities for primitive and unconfined recreation?

Facilities that decrease self-reliant recreation

4-5. Type and number of agency-provided recreation facilities

4-6. Type and number of user-created recreation facilities

Management restrictions on visitor behavior

4-7. Type and extent of management restrictions

Other Features of Value

What are the trends in the unique features that are tangible and integral to wilderness character?

Deterioration or loss of other integral site-specific features of value

5-1. Severity of disturbances to cultural resources

5-2. Severity of disturbances to other features of value

The table below summarizes the relationship between wilderness character, its five qualities, the monitoring questions used to tease apart various components of these qualities, the indicators chosen to answer the monitoring questions, and the corresponding measures that are detailed in this document.

	Quality	Monitoring Question	Indicator	Measure
Wilderness Character	**Untrammeled**	Intentional Manipulation	Authorized	1-1. Number of authorized actions and persistent structures designed to manipulate plants, animals, etc.
				1-2. Natural fire starts manipulated within the wilderness
			Unauthorized	1-3. Number of unauthorized actions that manipulate plants, animals, etc.
	Natural	Natural Processes	Ecological Processes	2-1. Departure from historical vegetation using Vegetation Condition Class (VCC)
		Natural Resources	Plants	2-2. Non-native plant species
			Animals	2-3. Non-native animal species
				2-4. AUMs of livestock inside wilderness
			Others, On hold	*On hold:* • *Status of native biological communities* • *Visible air quality* • *Ozone air pollution* • *Acid deposition of sulfur and nitrogen*

Quality	Monitoring Question	Indicator	Measure
Undeveloped	Development	Development	3-1. Index of physical development for structures or installations
		Inholdings	3-2. Area and existing or potential impact of inholdings
	Mechanization	Motorized / Mechanical use	3-3. Administrative use of motor vehicles, motorized equipment, and mechanical transport
			3-4. Use of motor vehicles, motorized equipment, and mechanical transport in emergency responses
			3-5. Unauthorized use of motor vehicles, motorized equipment, and mechanical transport
Outstanding Opportunities	Solitude	Remoteness Inside	4-1. Amount of visitor use
			4-2. Remoteness inside the wilderness affected by travel routes
		Remoteness from Outside	4-3. Area affected by developments near the wilderness
			4-4. Severity of effect of developments near wilderness
	Primitive & Unconfined Recreation	Facilities	4-5. Type and number of agency-provided recreation facilities
			4-6. Type and number of user-created recreation facilities
		Restrictions	4-7. Type and extent of management restrictions
Other Features of Value	Unique Features	Loss	5-1. Severity of disturbances to cultural resources
		Loss	5-2. Severity of disturbances to other features of value

Monitoring Frequency

Each measure should be monitored on an annual or five-year schedule as indicated in this summary table. See 'trend analysis/data management' section for information on how to determine significant change in wilderness character and reporting requirements.

Measure		Annual	5 year
1-1	Number of authorized actions and persistent structures designed to manipulate plants, animals, pathogens, soil, water, or fire	X	
1-2	Percent of natural fire starts that are manipulated within the boundaries of the wilderness	X	
1-3	Number of unauthorized actions by agencies, citizen groups, or individuals that manipulate plants, animals, pathogens, soil, water, or fire	X	
2-1	Departure from historical vegetation using Vegetation Condition Class (VCC) [pilot testing]		X
2-2	Abundance and distribution of non-native plant species		X
2-3	Abundance and distribution of non-native animal species		X
2-4	AUMs of livestock use inside wilderness	X	
3-1	Index of physical development for structures or installations		X
3-2	Area and existing or potential impact of inholdings		X
3-3	Type and amount of administrative use (but not law enforcement or emergency use) of motor vehicles, motorized equipment, and mechanical transport	X	
3-4	Proportional use of motor vehicles, motorized equipment, and mechanical transport in law enforcement or emergency responses	X	
3-5	Type and amount of use of motor vehicles, motorized equipment, and mechanical transport not authorized by the federal land manager	X	
4-1	Amount of visitor use	X	
4-2	Remoteness inside the wilderness affected by travel routes		X
4-3	Area of wilderness affected by developments near the wilderness		X
4-4	Severity of the effect of developments near the wilderness		X
4-5	Type and number of agency-provided recreation facilities		X
4-6	Type and number of user-created recreation facilities	X	
4-7	Type and extent of management restrictions		X
5-1	Severity of human-caused disturbances to cultural resources		X
5-2	Severity of disturbances to other features of value *(if applicable)*		X

UNTRAMMELED QUALITY

Untrammeled Measure 1-1. Number of authorized actions and persistent structures designed to manipulate plants, animals, pathogens, soil, and water.

Technique

Each separate action is counted annually. Each persistent structure is counted every year it is in operation.

Definitions

Action: the implementation of an intentional decision to manipulate the biophysical environment. The following general rules apply:

If an action span's multiple locations and the action remains the same, only one action would be reported. For example, treatment of a single invasive plant species in several locations within the wilderness = 1 action.

If a continuous action spans multiple fiscal years and the action remains the same, it will be counted once in each year. Example: treatment of a single invasive plant species is initiated in one fiscal year and the action continues into the next fiscal year = 2 actions.

If more than one species is targeted for an action, only one action is recorded for all targeted species. Example: one herbicide treatment is used to reduce populations of two different invasive plants = 1 action; one seed mix of four native seeds is spread at one time = 1 action.

If the type of treatment changes, each type would count as a separate action. Example: mechanical treatment is added to the use of herbicides = 2 actions; post-fire mechanical rehabilitation of dozer lines plus re-seeding disturbed ground = 2 actions.

Persistent structure: anything built with the intent of altering the hydrology of "the earth and its community of life" (e.g., fish dam, wildlife guzzler, or stock pond, regardless of size).

If a structure is still present but no longer functions in a way that manipulates plants, animals, pathogens, soil, water, or fire (e.g., a breached stock pond), it is not counted here but is still counted in Measure 3-1.

If a structure still functions, it is counted here even if the reason for its construction no longer applies. Example: a stock pond on a relinquished allotment that still captures water = 1 action. The structure is also counted in Measure 3-1.

Only monitor fences/corals in this measure if they are constructed to control native wildlife (e.g., a fence built to prevent deer from browsing aspen). If a fence/coral functions to control livestock while providing safe passage for wildlife, it is counted in Measure 3-1 only.

Examples

Spraying herbicide or using livestock to control populations of invasive plants.
Spreading seed to rehabilitate an area that burned.
Using chemicals or biocontrol agents to control fish, or wildlife.
Rehabilitating an old travel route (e.g. revegetation methods).
Manipulating wildlife habitat (e.g., existing guzzlers, creating fish barriers).
Removing animals (e.g., predators).
Using management-ignited prescribed fire to reduce accumulated fuels.
A functioning stock pond.

unique i.d. name or number	count	type	reason
Knapweed spray	1	chem. Control	incr. Natural
Big Sage reseed project	1	seeding	incr. Natural
DOW T4W R17E Sec. 25	1	guzzler	
DOW T4W R18E Sec. 14	1	guzzler	
	4	← report this value	

Sideboards & Notes

Data is collected and reported annually. Over time, an increase in this value is a decrease in this indicator of wilderness character.
This measure tracks the point of implementation of any action, as well as the persistence of functioning structures (i.e., the decision to install a guzzler counts as one action the year the guzzler is installed, and one action each subsequent year it is functioning, regardless of whether the reason for its construction or installation still applies).
Functioning water catchments of any size will be counted in Measure 3-1 as well. If they cease to function (that is, no longer retain water), they would no longer be counted under Measure 1-1, but would remain under Measure 3-1 until they were physically removed or rehabilitated.
This measure does not make a subjective judgment of the value of each action (i.e., it does not decide if one action "trammels" more than another). Actions clearly vary in significance; however, it is neither practical nor reasonable to try to apply a value beyond an equal weight to various actions.
Grazing itself is not counted as a trammeling action. Persistent structures related to grazing (i.e., guzzlers and stock ponds) or the use of livestock to control invasive plants are counted.
Do not include actions related to fire suppression, their impact is counted in measure 1-2.

Animal radio collaring studies are not counted as trammeling actions as they intend to monitor rather than manipulate the wilderness ecosystem. Helicopter travel commonly associated with these studies would be counted in measures 3-3 “Type and amount of administrative use (but not law enforcement or emergency use) of motor vehicles, motorized equipment, and mechanical transport”.

As with many other measures, data can be expected to vary greatly from year to year.

Data Sources

BLM Wildlife, Range, Botany, Local Fish and Game, Field office GIS

Ancillary data

Maintain consistency in describing “type” (e.g., biological control of non-native plants, chemical control of non-native plants, mechanical control of non-native plants, etc.) and “reason” (e.g., improving natural quality, legislative provision that requires action, etc.) for the actions listed.

To go to the fillable report form for this measure, click here.

Untrammeled Measure 1-2. *Percent of natural fire starts that are manipulated within the boundaries of the wilderness*

Technique

The number of natural ignition fires manipulated by fire managers is divided by the total number of natural fire starts; this fraction is multiplied by 100 and recorded as the nearest whole percent. If there are no natural fire starts, the value reported is 0 (zero). When available provide, type of manipulation, reason for manipulation, and any other relevant comments (e.g. restraint, preservation of wilderness character, and resource benefits)

Definition

Manipulation: Any action taken inside a wilderness boundary to affect fire behavior. The actions counted in this measure occur during fire events. Preventative actions such as fuels treatment would be counted in Untrammeled measure 1-1.

Example

unique i.d. name or number	type / reason for manipulation / comments	manipulation
Big Sage Flat	full suppression / Maple Acres subdivision threatened / protected sensitive area of the wilderness	1
Wild Canyon		0
Trailhead Snag	hand crew sent in / insufficient resources to meet prescription / motorized equipment was not utilized	1
3 COUNT	SUM	2
	PERCENT (report this value →)	**67**

Sideboards & Notes

Data is collected and reported annually. Over time, an increase in this value is a decrease in this indicator of wilderness character.

While it is true that manipulating fires that are not natural starts (i.e., human-caused ignitions) also decreases the untrammeled quality, these actions are not tracked here (BLM WCM) as virtually all of those fires are manipulated and their inclusion might mask changes in fire responses over which the BLM has greater discretion.

This measure tracks the trammeling effects of fire management only within wilderness boundaries.

This information provides a brief rationale behind fire suppressions, but this might not be sufficient to meet the requirements of a Wildland Fire Implementation Plan.

Data Source

National Interagency Fire Center , Field office GIS, WildCAD

To go to the fillable report form for this measure, click here.

Untrammeled Measure 1-3. *Number of unauthorized actions by agencies, citizen groups, or individuals that manipulate plants, animals, pathogens, soil, water, or fire*

Technique

Each separate action is counted and reported annually.

Definitions

Action: an intentional decision to manipulate the biophysical environment. The same general rules apply as with authorized actions (**Measure 1-1**).

Unauthorized: any action undertaken by any individual, group, or agency without specific approval by the authorized line officer. (Any action that manipulates the biophysical wilderness environment requires such approval.)

Examples

Illegal firewood cutting
Unauthorized stocking of a lake with non-native trout
Unauthorized poisoning of a lake to kill non-native trout
Stocking a lake with native trout by a state agency without specific authorization from the BLM
Setting arson fire
Marijuana cultivation sites

unique i.d. name or number	type	agency/group/person responsible	BLM response
stockpond T17N R35W Sec.3 NWSE	water development	permittee	permittee given 3 months to fill and rehabilitate
1	← report this value		

Sideboards & Notes

Data will be collected and reported annually. Over time, an increase in this value is a decrease in this indicator of wilderness character.

Changes in this value must be interpreted with care. Reported increases (or decreases) in illegal activities might be the result of changes in time and resources dedicated to enforcement, rather than in the actual character of use.

Unlike **Measure 1-1**, this measure tracks only the decision point, not the persistent evidence of the decision. There should be no persistent unauthorized structures in a wilderness.

Data Source

Field survey, local wilderness rangers, and field staff

To go to the fillable report form for this measure, click here.

NATIONAL CONSERVATION LANDS

NATURAL QUALITY

Natural Measure 2-1. *Departure from historical vegetation using Vegetation Condition Class (VCC)* *[pilot testing]*

Technique

Use LANDFIRE Vegetation Condition Class to assess the general level to which current vegetation is different from the estimated historical vegetation reference conditions.

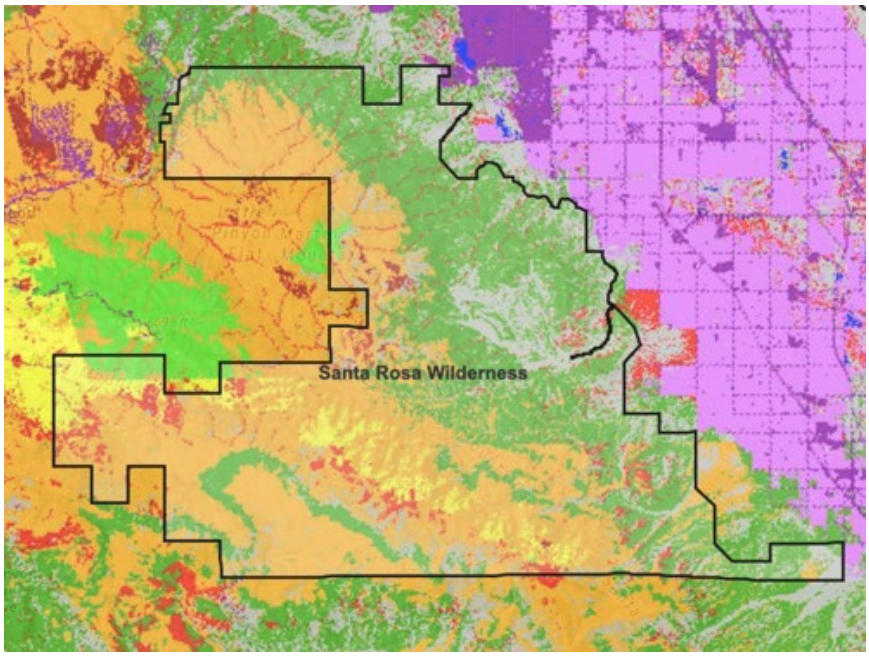
Calculate percentage of wilderness for each VCC. Multiply by corresponding class multiplier. Score is the total of the areas

Discuss with Fire Specialist to provide insight into the effects the VCC has on the wilderness area.

Vegetation Condition Class	Description	Potential Risks
VCC Class I. A	**Very Low**, Vegetation Departure 0 – 16 ***Multiplier: 1x***	The composition and structure of vegetation and fuels are similar to the historical reference. The risk of loss of key ecosystem components (e.g., native species, large trees, and soil) is low.
VCC Class I. B	**Low**, Vegetation Departure 17 – 33 ***Multiplier: 1.5x***	
VCC Class II. A	**Moderate to Low**, Vegetation Departure 34 – 50 ***Multiplier: 2x***	The composition and structure of vegetation and fuel are moderately altered. Uncharacteristic conditions range from low to moderate. The risk of loss of key ecosystem components is moderate.
VCC Class II. B	**Moderate to High**, Vegetation Departure 51 – 66 ***Multiplier: 2.5x***	
VCC Class III. A	**High,** Vegetation Departure 67 – 83 ***Multiplier: 3x***	The composition and structure of vegetation and fuel are highly altered. Uncharacteristic conditions range from moderate to high. The risk of loss of ecosystem components is high.
VCC Class III. B	**Very High**, Vegetation Departure 84 – 100 ***Multiplier: 3.5x***	

Example

Vegetation Condition Class	Percentage	VCC Multiplier	score	comments
Class I.A	29	1	29	
Class I.B	2	1.5	3	
Class II.A	15	2	30	*Estimated example*
Class II.B	43	2.5	108	Santa Rosa
Class III.A	9	3	27	Wilderness
Class III.B	2	3.5	7	
		report this value →	**204**	



Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

Measure 2-1 has not been field tested and is being piloted to test if it is a useful measure of ecological processes.

Data Source

LANDFIRE Map, Fire Specialist.

To go to the fillable report form for this measure, click here.

Natural Measure 2-2. *Abundance and distribution of non-native plant species*

Technique

Each non-native plant species or non-native pathogen that uses a plant as its primary host is scored by the estimated percent of wilderness acreage that is occupied by that species and by the estimated population density where it is found. Values are assigned according to the table below. Scores are multiplied together for each species monitored under this measure, and the resulting products are summed to generate a total score.

Staff are recommended to select up to 5 non-native plant species. Species should be selected based on their ability to be monitored and the overall impact on the wilderness area. Over time, new species can be added to the list of selected species, and species already on the list can be replaced with different species; any modification of the list of selected species should be considered carefully as changes in the percent of the wilderness occupied by selected non-native plant species may affect the tracking of this data over time.

Species	**estimated percent** of the wilderness on which it is found	**Score**		**estimated density** in the areas where found	**Score**	**Total Score**
	Very Low (or Spot) = <1%	1		low = <5% of individuals	1	
	Low = 1-5%	2				
	Moderate = 5-20%	3		moderate = 5-25% of individuals	3	
	High = 20-35%	4				
	Very High = 35-65%	5		high = >25% of individuals	5	
	Extreme = >65%	6				

Once data are initially collected, periodic review and updates every 5 years should be sufficient to track changes over time, but more frequent monitoring may be appropriate to prioritize management actions.

Definitions

Native: a species which originally inhabited the area now designated as wilderness.

Density: a ratio between the number of individuals of one species and the number of individuals of all the species belonging to the same taxonomic kingdom, class, or order. I.e., a plant species will be compared with all other plants. For aquatic species, use only the aquatic area of the wilderness to estimate density.

Example

A wilderness has cheat grass found throughout the area, usually densities of 10% to 20% of the plants present; thick stands of tamarisk are found in several spots along most of the washes. Total acreage where tamarisk is present is less than 5%, but probably more than 1% of the wilderness. There is a tree-of-heaven at an old homesite, which does not appear to be reproducing.

Species	estimated percent score	density score	total score	comments
Bromus tectorum	6	3	18	
Tamarix sp.	2	5	10	100% inventory of habitat; not yet in Butler Wash
Ailanthus altissima	1	1	1	only location: old Burt place
report this value →			**29**	

Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

The use of broad categories is a crude measure, but it is unlikely that most wilderness areas have more accurate data on the extent of non-native species. It should be possible to use field experience coupled with professional judgment to assign broad categories. However, initial data collection should be as complete as possible to reliably identify trends over time.

It should be assumed that data is based off visual observations, and professional judgement, unless a site specific/wilderness study is referenced in the comment section.

This methodology makes no distinction as to the relative threats of the various species present. Such determinations are advisable prior to taking control actions.

Non-native species can spread into a wilderness from human caused actions not in the wilderness. An increase in the number of non-native species over time could be caused by actions not under the control of a wilderness manager, but it is an impact to naturalness, nonetheless.

If Wilderness Area contains AIM plots, contact AIM specialist to include more informed data.

Data Source

Local botanist, invasive species program manager, ecologist, range conservationist, or other local sources of knowledge on non-native plants.

AIM Data Viewer, AIM Landscape Toolbox, VMAP Infestation Location

Ancillary data

The "comments" section should include an indication as to how confident the reporting office is in the classifications and number of species accounted for.

To go to the fillable report form for this measure, click here.

Natural Measure 2-3. *Distribution and impact of non-native animal species*

Technique

Each non-native animal species, or non-native pathogen that uses an animal as its primary host, is scored by the estimated percent of wilderness acreage that is occupied by that species and by the estimated population density where it is found. Values are assigned according to the table below. Scores are multiplied together for each species monitored under this measure, and the resulting products are summed to generate a total score.

Staff are recommended to select up to 5 non-native animal species. Species should be selected based on their ability to be monitored and the overall impact on the wilderness area. Over time, new species can be added to the list of selected species, and species already on the list can be replaced with different species; any modification of the list of selected species should be considered carefully as changes in the percent of the wilderness occupied by selected non-native animal species may affect the tracking of this data over time.

Species	**estimated percent** of the wilderness on which it is found	Score		**estimated impact** of the species	Score	Total Score
	trace = <1%	1		low	1	
	sparse = 1-5%	2				
	moderate = 6-25%	3		moderate	2	
	wide = >25%	4		high	3	

Once data are initially collected, periodic review and updates every 5 years should be sufficient to track changes over time, but more frequent monitoring may be appropriate to prioritize management actions.

Definitions

Native: a species which originally inhabited the area now designated as wilderness.

Low: the species has a relatively small or localized impact on the natural ecosystems and plant and animal communities.

Moderate: the species has a noticeable effect on plant or animal communities, or natural ecosystems and eradication efforts may or may not be in place because of uncertainty about impact.

High: the species has a large or significant effect on plant or animal communities or natural ecosystems and plans for eradication or reduction are likely in place because of the known large impact of the species.

Example

A wilderness contains non-native chukar, which has spread throughout the wilderness except on the upper slopes of Mt. Robert.

Species	estimated percent score	impact score	total score	comments
Alectoris chukar	5	2	10	common except at highest alt.
report this value →			**10**	

Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

Part-year residents are counted the same as year-round residents. Do not count species that are only migratory.

Do not include livestock in this measure – *counted in measure 2-4.*

The use of broad categories is a crude measure, but it is unlikely that most wilderness areas have more accurate data on the extent of non-native species. It should be possible to use field experience coupled with professional judgment to assign broad categories. However, initial data collection should be as complete as possible in order to reliably identify trends over time.

This methodology makes no distinction as to the relative threats of the various species present. Such determinations are advisable prior to taking control actions.

Non-native species can spread into a wilderness from human-caused actions not in the wilderness. An increase in the number of non-native species over time could be caused by actions not under the control of a wilderness manager, but it is an impact to naturalness, nonetheless.

Data Source

BLM Wildlife Biologist (District/Field), State wildlife agencies

Ancillary data

The “comments” section should include an indication as to how confident the reporting office is in the classifications and number of species accounted for.

To go to the fillable report form for this measure, click here.

Natural Measure 2-4. *AUMs of livestock use inside wilderness*

Technique

The number of animal unit months (AUMs) of actual livestock grazing in a wilderness is totaled. If more than one allotment exists in the wilderness, add those subtotals together. If an allotment is both inside and outside a wilderness, multiply the allotment's AUMs by the percentage of the allotment inside the wilderness. If the portion of the allotment inside the wilderness is its own separate pasture, count that pasture as if it were a separate allotment.

Use the BLM National Data Map and select the "Grazing Allotment" layer as well as the "NLCS Wilderness and Wilderness Study Areas" to locate grazing allotments in your wilderness area.

Contact local range specialists to calculate AUMs of livestock use inside the wilderness.

Example

One thousand acres of a 5,000-acre allotment is within the wilderness; the allotment is permitted for 800 AUM, but only 500 AUM are being used by the permittee. There is a second allotment of 2,450 acres entirely within the wilderness, permitted (and used) at 425 AUM.

allotment or pasture	AUMs used	% w/in Wilderness	score	comments
Table Mesa	500	20	100	800 AUMs permitted; % w/in Wilderness is rough guess
LCFO 27553	425	100	425	
			0	
			0	
			0	
report this value →			**525**	

Sideboards & Notes

Data will be gathered every year. Over time, an increase in this value is a decrease in this indicator of wilderness character.

As it is expected that the actual AUMs may well be less than the permitted AUMs and will vary from year to year due to rest/rotation grazing practices, environmental conditions, or market fluctuations, regression analysis must be used to determine if changes are significant.

The use of livestock as a management technique to control exotic vegetation is NOT tracked here but is accounted for in **Measure 1-1**.

This measure does not include AUMs dedicated to wildlife or wild horses and burros.

Data Source

BLM Range Lead, BLM National Data Map

Ancillary data

Many allotments—or even pastures—may cross wilderness boundaries, making interpolation of data necessary.

The "Comments" section should include a description of how such interpolations were derived, to ensure consistency over time.

To go to the fillable report form for this measure, click here.

Natural Measures *on hold*

Natural Measure 2-1

Measure 2-1. Status of native biological communities was a measure intended to assess the condition of native plant communities.

A relevant and accessible dataset does not exist to supply data for this measure.

Natural Measures 2-5, 2-6, and 2-7

The original intent envisioned centrally developed air quality measures that accurately represent BLM Wilderness areas.

Currently, there is very little air quality monitoring inside BLM wilderness areas. Using existing monitoring stations outside of BLM Wilderness would require statistical analysis.

Feasible measures would need to come from existing data or low-cost monitors, but these are not currently available.

Similar to past implementation guideline, the air quality measurements in consideration are the wet deposition of nitrogen and sulfur, ozone, and visibility/haze.

Looking to develop feasible measurements where existing data could be centrally gathered to accurately represent the air quality of BLM wilderness.

NATIONAL CONSERVATION LANDS

UNDEVELOPED QUALITY

Undeveloped Measure 3-1. *Index of physical development for structures or installations*

Technique

An index of physical development within the wilderness is derived from the sum of the development levels of various types of infrastructure. This index attempts to capture varying degrees of impacts from different types of structures.

For each **building**, if the building type is:	Assign that building the value:
Non-residential: buildings that do not house people, such as toilets and storage sheds, or structures that were intended to house people but can no longer fulfill that purpose *AND are not eligible for the National Register of Historic Places.*	2
Part-time (seasonal) residential: buildings that are occupied by people for a cumulative total of 6 months or less each year. This may include some lookouts, as well as certain recreation shelters, including buildings that only receive day use.	5
Full-time (year-round) residential: for buildings that are occupied by people for a cumulative total of more than 6 months each year. This may include crew quarters, outfitter and guide lodges, and certain recreational cabins, including buildings that only receive day use.	10
For each **Fence Line segment**, if the fence is:	Assign that segment its miles (to nearest tenth) in length multiplied by the value:
Primitive: constructed of native materials or native materials and wire	1
Non-primitive: constructed predominantly of nonnative materials (metal or treated wood posts)	2
For each **dam**, if the dam type is:	Assign that dam the value:
Small dams constructed of native materials (including stock ponds): less than 6 feet high and a maximum storage less than 15 acre-feet.	3
Medium dams constructed of native materials (including stock ponds): greater than 6 feet high but less than 10 feet high; or a maximum storage greater than 15 acre-feet but less than 25 acre-feet.	5
Large dams constructed of native materials or any dam constructed of non-native materials: greater than 10 feet high or maximum storage greater than 25 acre-feet that are constructed with native materials; OR any dam constructed with non-native materials (e.g., concrete).	10

For each **ROW, permit, easement,** or **authorization** for a linear feature:	Assign that segment its miles (to nearest tenth) in length multiplied by the value:
Impassable to vehicles.	1
Not maintained but suitable for high-clearance vehicles.	3
Suitable and maintained for high-clearance vehicles.	5
Suitable and maintained for passenger vehicles.	10
For each piece of **non-linear infrastructure** or **site**:	Assign each piece of infrastructure the value:
Any small-scale installation or other structure (e.g., a repeater, windmill, stock trough, guzzler, old dump, abandoned machinery, plane crash, UXO). Count each piece of infrastructure separately (e.g., a windmill and associated stock trough are two pieces of infrastructure). For sites with associated debris such as the location of a plane crash, count it as one site.	2
For each **mine**, if the mine is:	Assign that mine the value:
Reclaimed and restored	0
Small, inactive: mines whose disturbed area is less than or equal to 1 acre and that are no longer actively being worked, including abandoned historical mines that are still apparent.	2
Small, active: mines whose disturbed area is less than or equal to 1 acre and that are currently under development.	10
Large, inactive: mines whose disturbed area is greater than 1 acre and that are no longer actively being worked, including abandoned historical mines that are still apparent.	acreage of disturbance (to the nearest acre) * 2
Large, active: mines whose disturbed area is greater than 1 acre and that are currently under development.	acreage of disturbance (to the nearest acre) * 10

Definitions

Building: a structure designed to support, shelter, or enclose persons, animals, or property of any kind.

Dam: any artificial barrier which impounds or diverts water, including stock ponds.

ROW, Permit, Easement, or Authorization: any granted use, including vehicle travel and structures such as water pipelines and telephone lines. This includes vehicle routes to livestock developments which have not been rehabilitated, even if the route is not maintained and vehicular use is limited to approved maintenance. This does NOT include cherry-stem routes, which are tracked in **Measure 4-3**.

Definitions

Non-linear infrastructure: Pre- or post-designation installations or structures used to support activities such as telecommunications, water development, livestock grazing, or wildlife management. It includes debris such as old dump sites, plane crash sites, or locations of unexploded ordinance. It includes memorials or other monuments other than those placed during land surveys. It also includes unattended measurement device left in place for at least one year for the purpose of recording environmental data, such as meteorology or seismic activity. It does not include recreation infrastructure (accounted for in **Measure 4-4**). Infrastructure placed for temporary use (i.e., less than one year, such as a repeater that is installed to support fire management activities for a specific incident) is not included, nor are mobile installations such as radio collars.

Example

reference map:	Dry Mtn Wilderness devel. 8/2010		
Buildings	value		score
Bald Mtn. lookout	5		5
			0
			0
Fences	value	length (nearest .1 mile)	score
Alamo Mesa allotment fence	2	3.7	7.4
Ojo Alamo spring fence	1	0.1	0.1
			0
Dams	value		score
none			0
			0
			0
ROWs (etc.)	value	length (nearest .1 mile)	score
none			0
			0
			0
Non-linear infrastructure or site	value		score
Bisti dump	2		2
3 guzzlers	6		6
			0
Mines	value	size (nearest acre)	score
Lost Man Adit	2	1	2
			0
			0
		report this value →	22.5

Sideboards & Notes

- Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.
- This index number has no meaning in an absolute sense. An index value of 432 should not be interpreted as having twice the development level of a wilderness with a development level of 216. However, the use of this index is useful in a relative sense for showing increasing or decreasing trends over time at any one wilderness.
- The relative values assigned to each development type and to the level of development within each type are highly subjective and may not reflect the actual relative impact of these developments in any one wilderness.
- This measure does not track structures eligible for the National Register of Historic Places. Cultural properties are tracked in **Measure 5-1**.
- This measure may include developments associated with life-estate occupancies.
- Developments primarily made for recreational purposes (e.g., trails, footbridges, campsites, etc.) are tracked under the Solitude or Primitive and Unconfined Recreation quality in **Measure 4-4**.
- A flowchart to aid in identifying whether travel routes are recorded in measures 3-1, 4-2, 4-3, 4-4, 4-5, 4-6, or a combination of these measures is located in the appendix.
- In most cases, individual adits and shafts are grouped together into a mining area for determining what is monitored as a "mine." Do not, however, group mining activity based on claim ownership. Mining disturbance groupings should be those that are in close proximity without large undisturbed areas in-between. **NOTE**: **a value for a mine's size (nearest acre) must be entered for that mine's score to register.**
- Natural reclamation by landslide, if no development is visible (no shaft, no tailings pile, no built structures etc.) consider the mine reclaimed.

Data Source

Primarily fieldwork, satellite imagery

Ancillary data

It is critical that an adequate base map of these developments be referenced so that changes over time can be reliably determined. Future data input could be arranged so the six individual components of the index could be tracked separately to assess trends in various types of development.

To go to the fillable report form for this measure, click here.

Undeveloped Measure 3-2. *Area and existing or potential impact of inholdings*

Technique

The index of inholdings is calculated by multiplying the acres of each inholding by the value of its development potential from the table below and summing all the resultant quantities.

For each **inholding**, if its development potential is:	Multiply its acres by:
Low – the inholding is owned by an entity that has shown interest in sale or exchange of its land to the BLM; or is party to a legal document (e.g., a conservation easement) that specifically commits the owner to manage the property in a manner compatible with wilderness designation.	1
Unknown – the inholding owner has expressed no desire to sell, exchange, or develop the inholding, or has indicated a preference for development but the agency believes it infeasible.	2
High – the inholding owner has shown interest in developing the property. Development is considered feasible by the agency.	3
Developed – the inholding owner has developed the inholding.	5

Definitions

Inholding: non-federal land within the boundary of a wilderness. It does NOT include cherry-stemmed parcels or external edgeholdings that may be acquired. (It DOES include non-federal land at the edge of the wilderness if the wilderness boundary includes that parcel.)

Developed: the site has been "improved" (road, building, water system, etc.)

Example

A wilderness includes one State section that the state is interested in exchanging and an 80-acre parcel held by a wealthy developer who plans to build a fly-in resort.

Inholding location	Acres	Development rating	score
T3N R7E Sec. 16	640	1	640
T3N R7E Sec. 12 N/2NE	80	3	240
			0
			0
		report this value →	**880**

Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

Determining the feasibility of development can be problematic. It is better to rate the threat high and lower it as more favorable conditions are confirmed.

This measure does not explicitly include ROWs (part of **Measure 3-1**), though it assumes their status would be evaluated in determining the feasibility of development.

This measure does not include development on adjacent lands (part of **Measure 4-3**).

Data Source

BLM National Data Map, lands and realty specialist, and GIS specialist

To go to the fillable report form for this measure, click here.

Undeveloped Measure 3-3. *Type and amount of administrative use (but not law enforcement or emergency use) of motor vehicles, motorized equipment, and mechanical transport*

Technique

This measure is the sum of the number of motor vehicles, pieces of motorized equipment, and number of mechanical transport devices authorized, multiplied by the number of days authorized for each item. Motor vehicles are weighted twice as much as mechanical transport so that, for instance, an increase in this measure of the Undeveloped quality of wilderness character is gained if a horse-drawn wagon replaces an ATV.

Definitions

Motor vehicles: Machines used to transport people or material across or over land, water, or air, and which are powered by the use of a motor, engine, or other nonliving power source. This includes, but is not limited to motorboats, ATVs, snowmobiles and aircraft that either land or drop off or pick up people or material (i.e., not aircraft that merely fly over the wilderness).

Motorized equipment: Machines that are not used for transportation but are powered by a motor, engine, or other nonliving source. This includes but is not limited to machines such as chainsaws and generators. It does not include small hand-carried devices such as shavers, wristwatches, flashlights, cameras, stoves, or other similar small equipment.

Mechanical transport: Any device for moving people or material in or over land, water, or air, having moving parts, that provides a mechanical advantage to the user, and that is powered by a living or non-motorized power source. This includes, but is not limited to, sailboats, hang gliders, parachutes, bicycles, game carriers, carts, strollers, wheelbarrows, and wagons. It does not include wheelchairs when used as necessary medical appliances. It also does not include skis, snowshoes, rafts, canoes, sleds, travois, or similar primitive devices without moving parts.

Example

First action, Wolverine transplant: two helicopters authorized for five days each.

Second action, Stockpond rehab: one wheelbarrow authorized for two days, and a chainsaw authorized for ten days.

Both actions were analyzed through a minimum requirements analysis by using the previous Minimum Requirement Decision Guide or current Minimum Requirements Analysis Framework.

Action or Project	# motor vehicles	days per motor vehicle	# non-motor mech. trans.	days per mech. trans.	# motor equip.	days per motor equip.	score	agency	Minimum Requirements Analysis & Other Comments
wolverine transplant	2	5					20	DOW	FDO-2011-19; expect repeat for 3 yrs
stockpond rehab			1	2	1	10	12	BLM	FDO-2011-31
						report this value →	32		

Sideboards & Notes

Data will be gathered and reported annually. Over time, an increase in this value is a decrease in this indicator of wilderness character.

This measure tracks what is *authorized* for use; this might be different than actual use.

This measure does not track the use of motorized equipment or mechanical transport by law enforcement or in emergencies (**Measure 3-4**), nor unauthorized use (either illegal uses or uses in excess of that which is authorized; both are tracked under **Measure 3-5**). Depending on the availability of data for each wilderness, BLM staff may or may not track the use of motorized equipment or mechanical transport where such use is legal without requiring BLM authorization (e.g., Border Patrol operations). Data sources and assumptions should be consistent over time at any one wilderness and noted in ancillary data.

Data Source

Local BLM wilderness managers, Relevant MRA documents

Ancillary data

Data fields should include reference to the authorizing minimum requirements analysis as well as the agency authorized to use the equipment. Future data may include actual use, if different from authorized use.

To go to the fillable report form for this measure, click here.

Undeveloped Measure 3-4. *Proportional use of motor vehicles, motorized equipment, and mechanical transport in law enforcement or emergency responses*

Technique

This measure is the sum of the number of motor vehicles, pieces of motorized equipment, and number of mechanical transport devices used to respond to each law enforcement incident or emergency (motor vehicles are weighted twice as much as mechanical transport) divided by the total number of emergencies (including those where no motorized equipment or mechanical transport were used). For the purpose of this protocol, each day of one incident is counted separately.

Definitions

Law enforcement: In this context, taken to mean actions by a BLM ranger or other law enforcement official (e.g., county sheriff, Border Patrol agent) for which approval for the use of motorized equipment is not required in advance (e.g., "hot pursuit.")

Emergency: An event that presents an imminent threat to human health and safety, or other event that causes another threat as may be addressed by law, regulation, or policy (e.g., the Congressional Grazing Guidelines). For this measure only, this does **NOT** include fire emergencies.

Motor vehicles, motorized equipment and **Mechanical transport**: same as in **Measure 3-3**. Search aircraft that do not land are not counted; aircraft that drop or pick up supplies or searchers are counted.

Example

A wilderness has five emergencies in a year. An ankle injury resulted in a helicopter being called in to pick up an injured hiker ; a rock-climber experiencing chest pains needed to be picked up by a helicopter; on one occasion, four snowmobiles were dispatched into the wilderness for two days to search for a missing skier who was later found; once a person with a broken ankle was carried out on a wheeled litter; and once a person with a knee injury was carried out on horseback.

LE Action or Emergency	# motor vehicles	days per motor vehicle	# non-motor mech. trans.	days per mech. trans.	# motor equip.	days per motor equip.	score	
ankle 2/27 -- BLM Ranger	1	1					2	
chest pains 3/1 -- BLM Ranger	1	1					2	
skier fiasco 3/8-9 -- County SAR & 2 BLM Rangers; other BLM staff	4	2					16	
ankle 6/23 -- BLM staff			1	1			1	prohib. uses per emergency **report this value** ↓
knee 8/3 (horse) -- BLM staff							0	
5 COUNT						SUM	21	**4.2**

Sideboards & Notes

Data will be gathered and reported annually. Over time, an increase in this value is a decrease in this indicator of wilderness character.

By counting motorized equipment used to transport people or material as both motorized equipment and mechanical transport, an increase in the Undeveloped quality of wilderness character is gained if rescuers started using a wheeled litter instead of an ATV.

Data Source

State and local search and rescue (SAR), BLM Field Office Law Enforcement Officers (LEO's)

Ancillary data

"Emergency" column should include the agency using the equipment if that is not obvious from the nature of law enforcement action or emergency.

To go to the fillable report form for this measure, click here.

Undeveloped Measure 3-5. *Type and amount of use of motor vehicles, motorized equipment, and mechanical transport not authorized by the federal land manager*

Technique

The use of unauthorized equipment by each of the following categories of users is assigned a score, depending on its frequency of use multiplied by its areal extent. The scores of each type of user are summed to generate a total score reported for this measure. Pick only one "frequency of unauthorized use" and only one "extent of unauthorized use" for each category of user.

Category	Frequency of unauthorized use	Score	Extent of unauthorized use	Score	Total Score
Public	less than 3x per year	1	one or two locations	1	
	3x/year to 1x/month	2	three to five locations	2	
	more than 1x/month	3	six or more locations	3	
Permittees	less than 3x per year	1	one or two locations	1	
	3x/year to 1x/month	3	three to five locations	2	
	more than 1x/month	5	six or more locations	3	
Agencies	less than 3x per year	1	one or two locations	1	
	3x/year to 1x/month	3	three to five locations	2	
	more than 1x/month	5	six or more locations	3	
				GRAND TOTAL	

Definitions

Motor Vehicles, Motorized Equipment and **Mechanical Transport:** same as in **Measure 3-3**, except there is no double-weight of **Motor Vehicles**.

Public: Members of the general public. The use of motor vehicles, motorized equipment, or mechanical transport by this group is never authorized. Typical prohibited equipment includes OHVs, mountain bikes, and game carts.

Permittees: people or organizations with a permit from the BLM to operate on public land, whether within or outside the wilderness (e.g., livestock operators, Special Recreation Permit holders). The use of motor vehicles, motorized equipment, or mechanical transport by some members of this group may be authorized. This measure tracks the use in excess of that which is authorized.

Agencies: any governmental body or individual employed by that body engaged in official business. This includes members from all levels of government as well as BLM staff whose use of this equipment is not authorized. The use of motor vehicles, motorized equipment, or mechanical transport by this group is frequently authorized, but the authorization must be explicit and in conformance with the applicable wilderness laws.

Frequency of use*: The ranges described above (in the darkly shaded cells) should be changed for any one wilderness if the conditions at the time of designation are such that the range described above is not useful.* For instance, a wilderness with an extensive history of OHV intrusions by the public could use the categories in the example below, or any other three-part division that will allow for adequate opportunities to track improvement or degradation over time. *Whatever scale is used, it is essential that each area's wilderness character monitoring file include the scale used at the time of gathering the baseline data*, and that this scale be used for future monitoring. *In addition, if unauthorized use occurs, chose a range of frequency so that the baseline condition has a frequency score of 2. In that way, changes to this measure will be reflected with either more or less unauthorized use.* See the following table for an example of an alternate scale for frequency. Note that the frequency intervals do not have to be the same for each category of user.

Example

A wilderness has frequent OHV intrusions along most of its boundary; at the end of his season of use, one of the livestock permittees occasionally drives into a lookout point to search for cattle; there is no unauthorized agency use of motor vehicles, motorized equipment, or mechanical transport.

Category	frequency scale	frequency score	extent scale	extent score	total score	comments
Public	< 1/mo	2	1-2	3	6	ongoing boundary violations
	1/mo - 1/wk		3-5			
	>1/wk		>5			
Permittees	1-2/yr	2	1-2	1	2	ATV to overlook; range con will contact
	3/yr - 1/mo		3-5			
	> 1/mo		>5			
Agencies	< 1/yr	0	1-2		0	
	1-2/yr		3-5			
	> 2/yr		>5			
report this value →					**8**	

Sideboards & Notes

Data will be gathered and reported annually. Over time, an increase in this value is a decrease in this indicator of wilderness character.

See important notes on the development of alternative frequency-of-use ranges (the darkly shaded cells) as detailed in the "Definitions" section above.

Due to the nature of these violations, it is unlikely that land managers could be more precise than the categories of frequency used here.

The frequency scores are weighted to reflect the belief that violations by permittees or agency personnel are more akin to an authorized use and (theoretically, at least) more feasible for the managing agency to control. Weighting gives a greater incentive to do so.

It must be recognized that it may be difficult to assign a user category for a particular unauthorized use. Field staff experience and best judgment must be used.

Changes in this value must be interpreted with care. Reported increases (or decreases) in illegal activities might be the result of changes in time and resources dedicated to enforcement, rather than in the actual character of use.

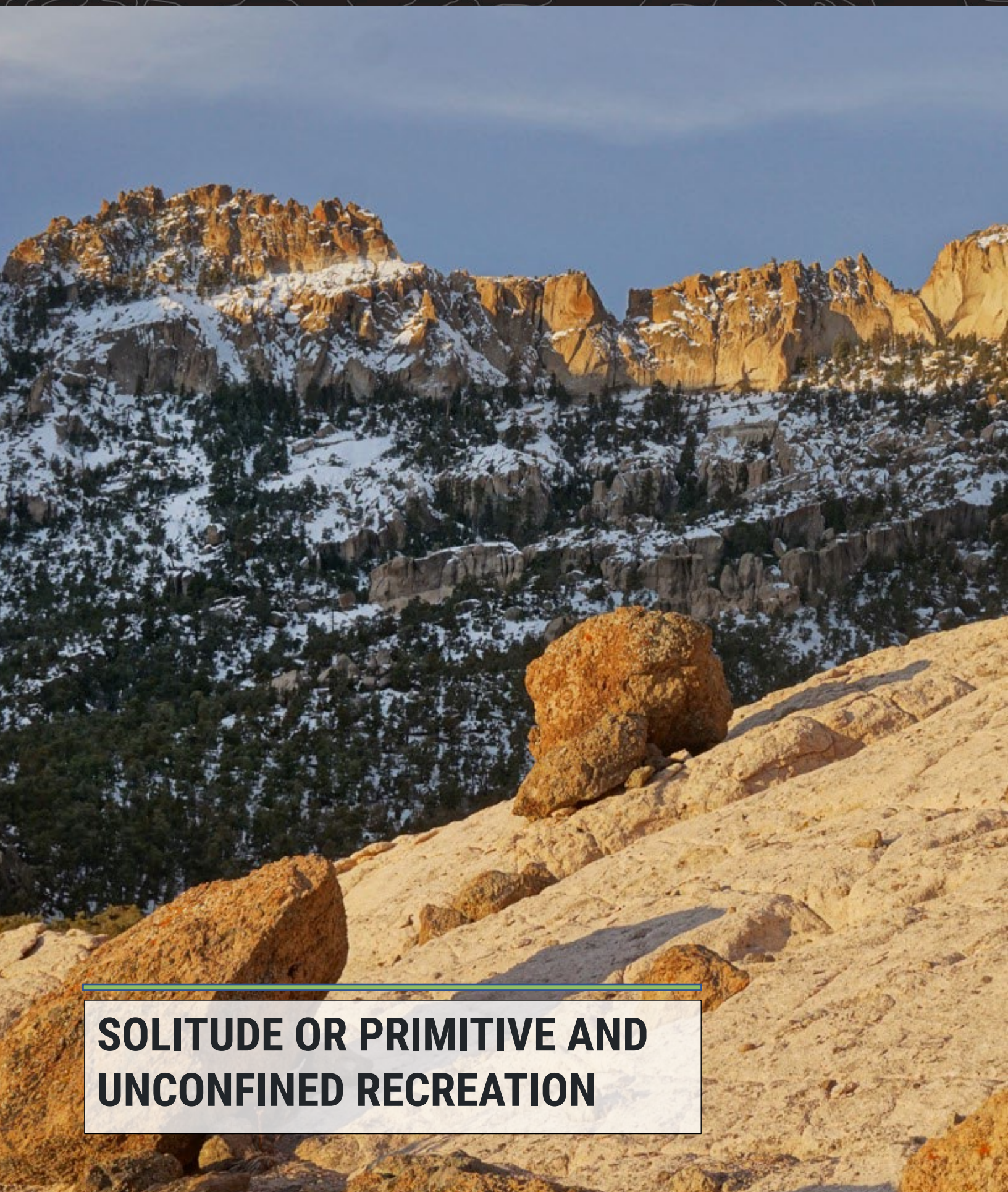
Data Source

Field work (looking for tracks), recreation and/or wilderness rangers, and BLM field office Law Enforcement Officers (LEO's).

Online tools such as FieldMaps, and Survey123 have been used to georeference data points and documenting corresponding photos.

To go to the fillable report form for this measure, click here.

NATIONAL CONSERVATION LANDS



SOLITUDE OR PRIMITIVE AND UNCONFINED RECREATION

Recreation Measure 4-1. *Amount of visitor use during primary use season*

Technique

Develop a reliable, valid system for measuring use consistent with the unique situation for the wilderness.

Data from established trailhead car counts (which might then be adjusted for the average number of people per vehicle), trail counters (which might then be converted to groups by adjusting for average party size), permit systems and trailhead registrations (with checks for compliance), should be found in BLM's Recreation Management Information System (RMIS) *instructions below*.

Access BLM's National Data Map

Turn on the "NLCS Wilderness and Wilderness Study Areas" layer, the "National Recreation Sites (points" layer, and the "Recreation Sites and Facilities from RIDB" layer.

Find what sites are near a specific wilderness, and then look up the use recorded for those sites using the BLM's Recreation Management Information System (RMIS)

Professional judgment of the amount of visitor use may be used as a last resort.

If professional judgment is used local units should provide additional background about their basis for this judgment.

To reduce the cost of collecting data, these data should be gathered during the primary use season. It might be preferable for highly used wilderness areas to track use during both the primary and secondary seasons, to address the point brought up in the sideboard/notes below.

Include dates of the primary use season being measured in the comments section.

Definitions

Primary use season: generally, that portion of the year during which 80% of the use occurs. It is less important that the time span capture exactly this amount of use than that the period be clearly defined so that monitoring can be done consistently over time.

Example

Number	comments
1167	Trailhead car count (May 1 - Oct. 15); monitoring design in "Big Wash Visitor Use Plan"

Sideboards & Notes

- Data will be gathered and reported annually. Over time, an increase in this value is a decrease in this indicator of wilderness character.
- The possibility of differing monitoring techniques for this measure creates an unknown degree of error in comparing visitor use data over time.
- Many wildernesses have not tracked this measure in the past, and the technique chosen under such circumstances might be rather coarse. Use the best information available
- Wilderness visitation can be highly variable year-to-year, depending on various factors such as the cost of gasoline, wildflower displays, fire activity, and media advertising. It is therefore necessary to collect data over multiple years to draw firm conclusions about trends in visitation.
- Because this measure is for an entire wilderness area, it does not capture the geographic variation in use within a wilderness. It is important for the local manager to know whether the increase in use is occurring at one or two places, or across all wilderness destinations.
- The measure does not capture use during the off-peak times of year, and changes there may signal a greater change in opportunities for solitude in locations where visitation during the primary use season is already high.

Data Source

- BLM Monument/Recreation Specialists, BLM's National Data Map, BLM's Recreation Management Information System (RMIS)

Ancillary Data

- The "comments" field should include data collection method (e.g., permit, visitor register, traffic counter, ranger contacts; etc.), area monitored (i.e., all trails or selected trails), primary season of use, or reference other monitoring design.

To go to the fillable report form for this measure, click here.

Recreation Measure 4-2. *Remoteness inside the wilderness affected by travel routes*

Technique

Contact GIS Specialist for this measure.

GIS analysis will be used to compute the number of acres inside the wilderness that are specified distances from managed travel routes including system trails, roads, boatable rivers, airstrips, and other agency managed travel routes that provide access to the wilderness. Acres are calculated for areas less than ½ mile and between ½ and 2 miles from non-motorized, non-mechanized travel routes, and less than 1 mile, and 1 mile to 3 miles for motorized or mechanized travel routes or airstrips. The influence of travel routes inside and within 3 miles of the wilderness boundary are measured through the calculation of acres. The acres calculated are then multiplied by a remoteness zone factor to generate a remoteness score. The scores are summed to generate a total score reported for this measure. Do not double-count overlapping distance areas from two closely located travel routes.

If one travel route has two uses (e.g., public use as a system trail and permitted motorized access solely to the owner of an inholding), count only the public use in determining its mechanized or motorized status.

For each travel route segment, calculate the number of acres:	Calculate number of acres	Remoteness Zone Factor	Remoteness Score
less than ½ mile from any non-motorized, non-mechanized managed travel route;		A = 2	Acres x 2
less than 1 mile from any motorized or mechanized managed travel route or airstrip;			
between ½ and 2 miles from any non-motorized, non-mechanized managed travel route		B = 1	Acres x 1
between 1 and 3 miles from any motorized or mechanized managed travel route or airstrip.			
all other areas of the wilderness (most remote zone)		C = 0	0
		GRAND TOTAL	

Definitions

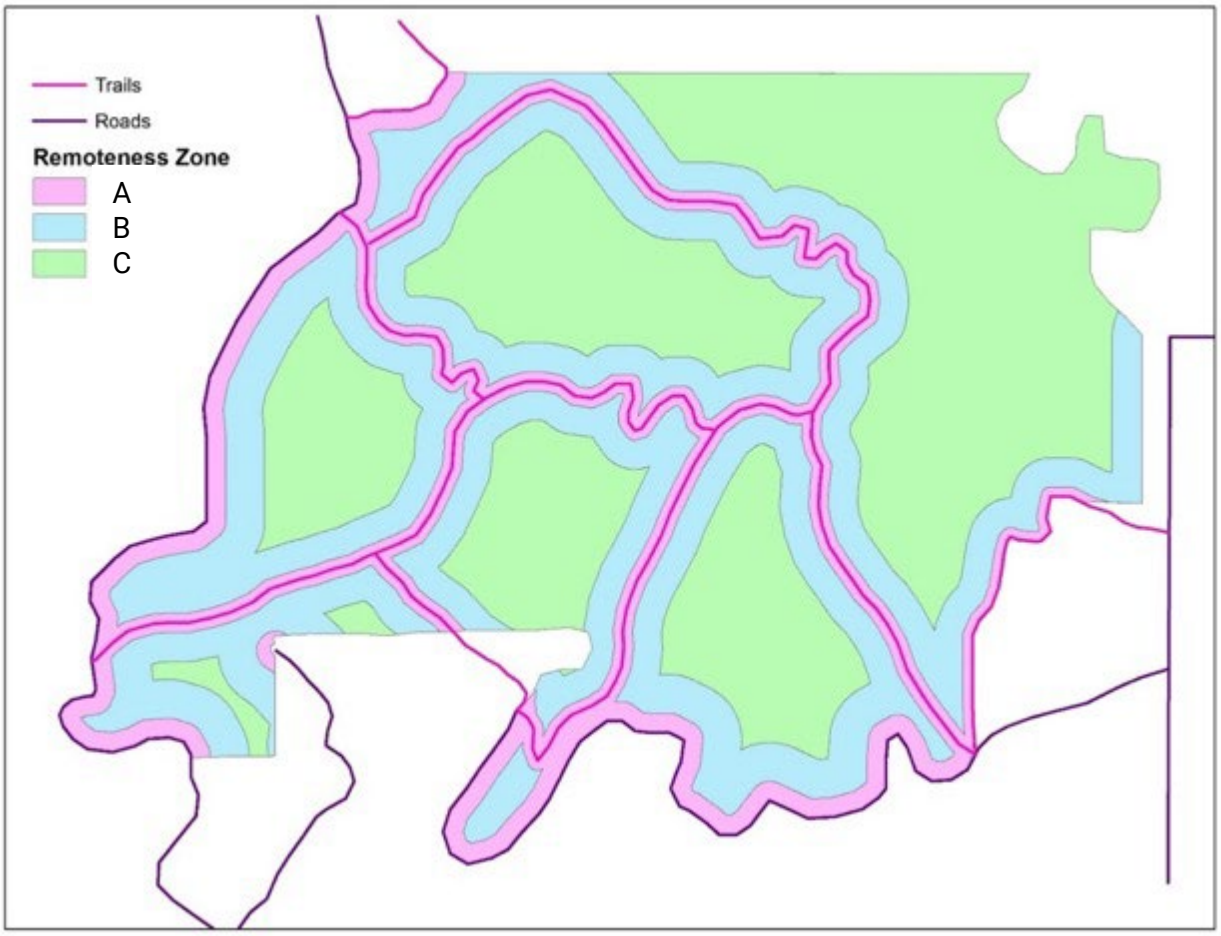
Managed travel route: Any linear travel course that the BLM or another entity manages for visitor access by directing visitors to it or managing use due to the volume of public interest. Primarily, this includes system trails, designated roads, and public roads. In addition, boatable rivers, and sandy washes (or similar travel routes) without a surface tread but to which the BLM directs visitors, manages use, or otherwise recognizes as a travel corridor. Do not consider features that only play an insignificant role in visitor access (e.g., rivers that are boated infrequently such as when an unusual flow occurs, common washes that visitors are not directed to through agency materials, or authorized travel routes that do not have travel tread and/or are generally not readily available for hiking or stock use).

System trail: a linear feature identified by the BLM for the purpose of allowing the free movement of people or stock. Any trail that the BLM has made available to the public is considered a system trail in this measure; this includes a designation of the trail in a planning document, directing the public to the trail through maps or brochures, or a managed parking area for the purpose of accessing the trail. Non-system trails (i.e., "user-developed" or "social" trails) are not included.

Airstrip: a feature supporting established public use of aircraft as provided under Section 4(d)(1) of the Wilderness Act.

Example

For each travel route segment, calculate the number of acres:	Calculate number of acres	Remoteness Zone Factor	Remoteness Score
less than ½ mile from any non-motorized, non-mechanized system trail	16,655	2	33,310
less than 1 mile from any motorized or mechanized trail, road or airstrip			
between ½ and 2 miles from any non-motorized, non-mechanized system trail	34,240	1	34,240
between 1 and 3 miles from any motorized or mechanized trail, road or airstrip.			
all other areas of the wilderness (most remote zone)	45,427	0	0
		TOTAL SCORE	67,550



Sideboards & Notes

Data will be gathered every five years. Changes in this measure tracks impacts to "core" areas of solitude which provide remoteness. An increase in this value is a decrease in this indicator's wilderness character condition.

Although remoteness may also be affected by user-developed trails, such trails are only tracked in **Measure 4-6**. It is expected that when use levels of user-developed trails increase, measures will be taken to control the use, or the route will begin to be managed as a system trail and at that time, it will be recorded in this measure.

This measure does not account for the effects of topography and vegetation cover, private land ownership, or distance from a trailhead. These factors have an influence on remoteness, but incorporation of these factors excessively complicates monitoring models.

A flowchart to aid in identifying whether travel routes are recorded in measures 3-1, 4-2, 4-3, 4-4, 4-5, 4-6, or a combination of these measures is located in the appendix.

Data Source

GIS Specialist, Ground Transportation Linear Features (GTFL) map, and if available field/district office level transportation inventories.

Ancillary Data

A map file in which travel routes and remoteness zones are depicted should be included in the data as a reference. This is an important check on data completeness.

To go to the fillable report form for this measure, click here.

Recreation Measure 4-3. *Area of wilderness affected by developments that are near the wilderness*

Technique

Contact a GIS Specialist for this measure.

GIS analysis will be used to compute the number of affected acres that are less than:

a) 1 mile from any unpaved motor vehicle route outside the wilderness, including an unpaved cherry-stem; any shoreline accessible by motorboats; any developed campground/recreation site; any low-power transmission lines

b) 2 miles from any paved motor vehicle route outside the wilderness including paved cherry-stems; residential or commercial development; high-power transmission lines (110 kV or more)

c) 5 miles from any OHV play areas; 4-lane (or more) divided highway; active railroad tracks; private or non-commercial aircraft landing site; the closest edge of any industrial development

d) 10 miles from any commercial or military airstrip

If measures overlap (e.g., an unpaved boundary route and 4-lane divided highway 3 miles from the boundary), only the area with the effect further into the wilderness will be counted to derive this value. Overlap of acres calculated from different features are not counted twice. For example, see the map on the next page. The "Area Affected" is shown in pink on the top map.

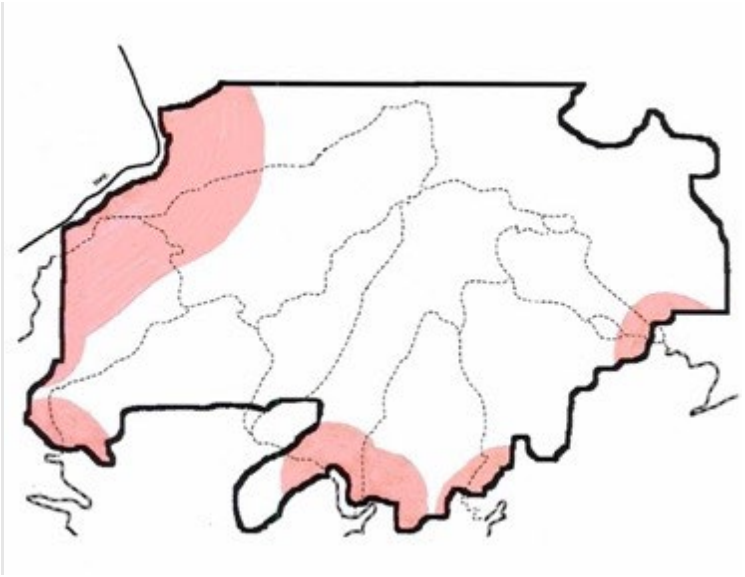
Definitions

Residential development: at least one dwelling occupied a total of at least two months per year. Measure from the actual structure, not the edge of the private property.

Industrial development: any commercial use for which large motorized equipment is commonly present (e.g., gravel pits, oil wells, power plants, factories) or visual impacts are highly noticeable (e.g., solar panel array). Measure from the nearest points of actual development (e.g., the actual well pad, rather than the edge of the lease).

Example

Area	Reference
4877	map: "Little Flat Wilderness - WCM.4-3 - 2010



"Area Affected"

Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

Due to a lack of a feasible method, this measure does not try to monitor the influence from aircraft overflights, a major impact to perception of remoteness.

Changes in the "area affected" measure tracks impacts to the "core" area of solitude (e.g., the dirt two-track is closed, but a solar array is installed 4.5 miles from the other side (previously undeveloped) of the wilderness).

A flowchart to aid in identifying whether travel routes are recorded in measures 3-1, 4-2, 4-3, 4-4, 4-5, 4-6, or a combination of these measures is located in the appendix.

Data Source

Office GIS layers, including transportation, right-of-way, recreation facilities, oil and gas leases, etc. along with city, county and state GIS data. Satellite imagery for private inholding developments.

Ancillary Data

"Reference" should include a map file or other description of which specific development impacts are included in the database. This is an important check on data completeness.

To go to the fillable report form for this measure, click here.

Recreation Measure 4-4. *Severity of the effect of developments that are near the wilderness*

Technique

Contact GIS Specialist for this measure.

GIS analysis will be used to compute the number of acres that are less than:

a) 1 mile from any unpaved motor vehicle route outside the wilderness, including any unpaved cherry-stem; any shoreline accessible by motorboats; any developed campground/recreation site; any low-power transmission lines

b) 2 miles from any paved motor vehicle route outside the wilderness including paved cherry-stems; residential or commercial development; high-power transmission lines (110 kV or more)

c) 5 miles from any OHV play areas; 4-lane (or more) divided highway; active railroad tracks; private or non-commercial aircraft landing site; the closest edge of any industrial development

d) 10 miles from any commercial or military airstrip

Irrespective of overlap, all acreages resulting from the analysis will be added to derive this value. [Note: Overlap of acres calculated from different features are counted multiple times in measure 4-4. This differs from measure 4-3 where overlapping areas are only counted once.]

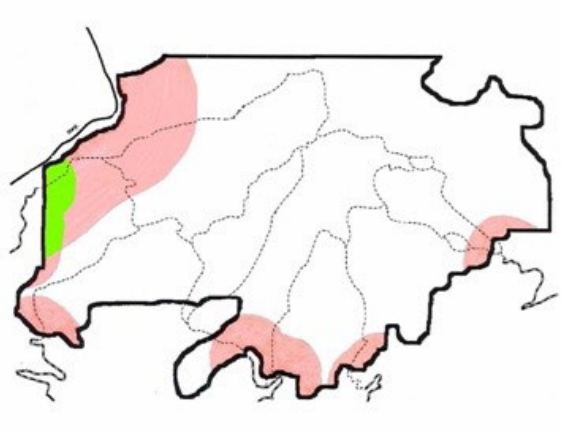
Definitions

Residential development: at least one dwelling occupied a total of at least two months per year. Measure from the actual structure, not the edge of the private property.

Industrial development: any commercial use for which motors are commonly present (e.g., gravel pits, oil wells, power plants, factories) or visual impacts are noticeably unnatural (e.g., solar panel array). Measure from the nearest points of actual development (e.g., the actual well pad, rather than the edge of the lease).

Example

Severity	Reference
5693	map: "Little Flat Wilderness - WCM.4-4 - 2010



"Severity"

Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

It is possible that the analysis results in a number of acres greater than the acreage of the wilderness (e.g., a wilderness 6 miles wide with a private aircraft landing site on one side and a paved road on the other). The result of the analysis is to identify a numerical representation of the severity of impact to the wilderness, not one that correlates to the wilderness acreage.

Changes in the "severity" value tracks improvements in this indicator of wilderness character when developments are removed that are within the impact zone of a greater development (e.g., a dirt two-track paralleling a wilderness boundary is closed and rehabilitated but a 4-lane, divided highway 2 miles from the boundary continues to influence the wilderness).

A flowchart to aid in identifying whether travel routes are recorded in measures 3-1, 4-2, 4-3, 4-4, 4-5, 4-6, or a combination of these measures is located in the appendix.

Data Source

Office GIS layers, including transportation, right-of-way, recreation facilities, oil and gas leases, etc. along with city, county and state GIS data. Satellite imagery for private inholding developments.

Ancillary Data

"Reference" should include a map file or other description of which specific development impacts are included in the database. This is an important check on data completeness.

To go to the fillable report form for this measure, click here.

Recreation Measure 4-5. *Type and number of agency-provided recreation facilities*

Technique

The value of agency-provided recreation facilities is derived from the sum of the development levels of various types of infrastructure. This attempts to capture varying degrees of impacts to the opportunity for self-reliant, primitive recreation from different facilities.

For each **SYSTEM TRAIL SEGMENT**, if:	Assign that segment its miles (to nearest tenth) in length multiplied by the development value:		For each trail segment, if the **TRAIL MARKERS** or **SIGNS** are:	Multiply the Trail Segment value generated to the left by the trail marker or sign value:	**Total value for one segment**
Single-track	1		None (trail segment is unmarked)	1	
Double track (e.g., old wagon route)	2		Blazes or stone cairns; no signs	2	
			signs made of native materials	3	
Former road: (i.e., retains evidence of past construction)	3		Trail markers of nonnative materials (i.e. carsonites)	5	

For each **MAJOR TRAIL FEATURE**, if the feature construction is:	Assign that feature the value:
Primitive: built with raw, native materials (e.g., log bridge; notched log ladder).	1
Constructed with native materials: built with native materials that have been processed to form dimensional materials (e.g., a log stringer bridge with decking; wooden ladder).	3
Constructed with nonnative materials: for major trail features built using nonnative materials as a primary building component (e.g., a bridge using steel supports; metal ladder).	5
For each **CAMPSITE DEVELOPMENT**, if it is:	Assign that site (for each pad or shelter) the value:
Designated; no construction: no construction other than locator sign	1
Constructed tent pads: camping area has at least cleared and leveled areas for pitching tents, with or without rock or log borders	2
Shelters: camping areas with roofed structures, with or without walls	10

For each **AMENITY**, if it is:	Assign that amenity the value:
Developed water source	20
Toilet, primitive	5
Toilet, non-primitive (i.e., walled or has riser)	20
Permanent fire grate (metal, concrete, or cemented stone)	5
Food storage structure (e.g., bear box, rodent pole)	5
Hitching post, permanent highline	5
Corral	10
Picnic table or bench	20

The final value of **Type and Number of Recreation Facilities** is calculated as follows:

(Sum of (each SYSTEM TRAIL SEGMENT *DEVELOPMENT VALUE* its TRAIL MARKER or SIGN value)) +
(Sum of MAJOR TRAIL FEATURE assigned values) +
(Sum of CAMPSITE DEVELOPMENT assigned values) +
(Sum of AMENITY assigned values) =
Value of Recreation Facilities (Measure 4-5)

Example

Big Mesa Wilderness has one old wagon road that is 2 miles long; at Mile 2, a .1 mile steep and rocky trail branches off with a plastic post and sign that says, "Trail to Bald Point." This trail is 1.7 miles long and has cairns to mark the trail as it nears the top. The only other "amenities" in the wilderness are a hitching post at the trail junction and a bench (an Eagle Scout project) at Bald Point.

reference map:	Big Mesa Wilderness - rec devel: 8/2010				
Trail segment	length (nearest .1 mile)	devel. score	signs score	total	comments
old wagon road: start to junction	2.0	2	1	4.0	
old wagon road: junction to end	0.1	2	1	0.2	
Bald Point Trail	1.7	1	5	8.5	
Major trail feature		value	number	total	
none				0	
Campsite development		value	number	total	
none				0	
Amenity		value	number	total	
junction hitching post		5	1	5	determine if minimum
Bald Point bench		20	1	20	remove
		report this value →		**37.7**	

Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

In assigning Trail Marker values, do not count trailhead (wilderness portal) signs; for any segment having signs at only one end of the segment, count the higher level of development for the entire segment. Do not use the number of individual cairns, signs, or trail markers to generate a Trail Segment value, nor count them as a Major Trail Feature.

When counting major trail features, the intent is not to count minor constructed elements that may be quite numerous (e.g., water bars, cribbing, or a flight of three or fewer steps). Examples of major trail features are included in the table above.

Although different facilities have different influences on the feeling of primitiveness, the attempt of this protocol to weigh them accordingly is subjective.

Other developments unrelated to the immediate recreation experience (such as scientific installations, dams) are monitored under **Measure 3-1**.

Where visitor-caused degradation of system trails exists, except for normal trail maintenance issues, count those areas here and under **Measure 4-6.** For example, on a designated trail where visitors have created a bypass or significant trail braiding, the system trail is counted here, and the degradation is counted as a User-Degraded Trail Segment. Do not count minor issues such as a bypass of a tree fallen across the trail.

A flowchart to aid in identifying whether travel routes are recorded in measures 3-1, 4-2, 4-3, 4-4, 4-5, 4-6, or a combination of these measures is located in the appendix.

Definitions

System trail: a linear feature identified constructed or delineated by the BLM for the purpose of allowing the free movement of people or stock. Any trail that the BLM has made public is considered a system trail in this measure; this includes a designation of the trail in a planning document or directing the public to the trail through maps or brochures. Non-system trails ("user-developed" or "social" trails) are included in **Measure 4-6**, not here.

Data Source

Field work and BLM Recreation specialists.

Ancillary Data

Additional ancillary data should include a map file or other description of which specific developments are included in the database. This is an important check on data completeness.

To go to the fillable report form for this measure, click here.

Recreation Measure 4-6. *Type and number of user-created recreation facilities*

Technique

The value of user-created recreation facilities is derived from the sum of the development levels of various types of infrastructure, similar to **Measure 4-5.**

For each **USER-CREATED TRAIL SEGMENT**, if:	Assign that segment its miles (to nearest tenth) in length multiplied by the development value:		For each trail segment, if the **USER-CREATED TRAIL MARKERS** or **SIGNS** are:	Multiply the Trail Segment value generated to the left by the trail marker or sign value:	**Total value for one segment**
Single-track	1		None (trail segment is unmarked)	1	
Double track (e.g., old wagon route)	2		Stone cairns	5	
			Markers other than cairns	20	
Route that retains evidence of past mechanical construction	3				
For each **USER-DEGRADED TRAIL SEGMENT**				Count the segment length in miles (to the nearest tenth)	

For each **USER-CREATED MAJOR TRAIL FEATURE**, if the feature construction is:	Assign that feature the value:
Primitive: built with raw, native materials (e.g., log bridge, notched log ladder).	5
Constructed with native materials: built with native materials that have been processed to form dimensional materials (e.g., a log stringer bridge with decking, wooden ladder).	10
Constructed with nonnative materials: for major trail features built using nonnative materials as a primary building component (e.g., a bridge using steel supports, metal ladder).	20

For each **USER-DEVELOPED CAMPSITE**, if it is:	Assign that site the value:
Minimal change to vegetation or soil and no evidence of cut trees or shrubs, but evidence of camping (normally evidenced by rock fire ring, but also could be an open level area clearly identifiable as a camping site by other evidence)	1
Obvious impact to or clearing of perennial vegetation; or well used or large campfire ring; or fewer than four cut trees or shrubs cut; or, mineral soil exposed, but not highly compacted.	2
Highly used campsite having caused impact to vegetation and soil: size sufficient to accommodate more than two tents; or unusually large campfire ring or multiple campfire rings; or downed fuelwood sparse due to collection or may have more than four cut trees or shrubs; or mineral soil exposed and highly compacted; or contains site modifications (sitting logs etc.).	3
For each **USER-DEVELOPED CAMPSITE,** if it is within 50 feet of another campsite:	multiply **each** campsite score by 2.
For each **USER-DEVELOPED AMENITY**, if it is:	Assign that amenity the value:
Developed water source (dug well, or water catching structure)	20
Toilet, primitive (i.e. not walled and no riser)	10
Permanent fire grate (metal, concrete, or cemented stone)	20
Food storage structure (e.g., bear box, rodent pole)	10
Highline (additional effects also tracked below)	1
"Woodcraft" (e.g., hitching post, corral, picnic table, bench, lean-to), hunting blind or other user-developed amenity, regardless of material	10
For each **NON-STRUCTURAL USER-DEVELOPED RECREATION SITE**, if it is:	
An area with observable impact to or elimination of perennial vegetation to an area less than 25 sq. ft.	1
An area with obvious impact to or elimination of perennial vegetation to an area greater than 25 sq. ft. but less than 100 sq. ft.; or fewer than 4 cut trees or shrubs.	3
An area with obvious impact to or elimination of perennial vegetation greater than 100 sq. ft.; or 4 or more cut trees/shrubs; or mineral soil exposed and highly compacted; or areas that are impacted by human waste where sight or smell is at level to cause offense to an average visitor.	5
The final value of **Type and Number of Recreation Facilities** is calculated as follows: (Sum of (each USER-CREATED TRAIL SEGMENT ASSIGNED VALUES)) + (Sum of USER-DEGRADED TRAIL SEGMENT assigned values) + (Sum of USER-DEVELOPED MAJOR TRAIL FEATURE assigned values) + (Sum of USER-DEVELOPED CAMPSITE DEVELOPMENT assigned values) + (Sum of USER-DEVELOPED AMENITY assigned values) + (Sum of NON-STRUCTURAL USER-DEVELOPED RECREATION SITE assigned values) = **Value of User-Created Facilities (Measure 4-6)**	

Definitions

User-Created Trail Segment: a linear feature sufficiently present on the ground so as to be followed for recreational travel (e.g., hiking, horseback), but which is not designated as a trail by the BLM, nor appears on any BLM map of the wilderness intended for visitor use. This includes trails worn in by visitor use and vehicle routes present before designation that are now closed to all motor vehicles, but which have not rehabilitated (either through management activity or natural processes). This does not include routes of travel that are not worn through vegetation (e.g., a wash that is regularly hiked), or animal trails. Where motor vehicles are allowed or are expected to be allowed through a ROW, Permit, Easement, or Authorization, record under **Measure 3-1**. Agency-designated trails are tracked under **Measure 4-5**.

User-Degraded Trail Segment: a section of either a System Trail or a User-Created Trail where resource degradation is present (trail braiding, trail widening, trail impacts to sensitive resources, or similar effects).

User-Developed Campsite: normally evidenced by a rock fire ring or presence of charcoal, but also could be an open level area clearly identifiable as a camping site by evidence of nails in trees, litter, cached gear, or arranged sitting rocks or logs. Areas where camping has occurred (for example, a tent is observed) but where no lasting evidence of the site remains when the visitor leaves (for example, an area in a wash) should not be counted as a campsite.

Non-Structural User-Developed Recreation Site: evidence from activities including rock climbing, visiting scenic locations, rapid scouting, fishing, visiting hot springs, etc. normally evidenced by impact to or elimination of perennial vegetation, exposed mineral soil, and other indicators of frequent visitor use which are not immediately within a campsite as defined above

Example

reference map:	"Big Cottonwood - WCM 4-4&5 - 2010"				
User-created trail segment	length (nearest .1 mile)	devel. score	signs score	total	comments
spur trail to Ojo Alamo	0.6	1	1	0.6	short-cut commonly used instead of the designated trail to the east
User-degraded trail segment	length (nearest .1 mile)			total	
braided trail across Big Flat	0.1			0.2	plan to repair in FY11
User-developed major trail feature		value	number	total	
none				0	
User-developed campsite		value	number	total	
Ojo Alamo (2 high-use sites)		6	2	12	
User-developed amenity		value	number	total	
Ojo Alamo hunting blind		10	1	10	remove on next patrol (9/2010)
User-developed rec site (non-camping)		value	number	total	
Alamo Rock "bouldering" area		5	1	5	
			report this value →	**27.8**	

Sideboards & Notes

Data for this measure will be reported every five years, though proper stewardship will require more frequent monitoring. Over time, an increase in this value is a decrease in this indicator of wilderness character.

There is an indistinct line between an agency-provided trail and a trail that is user-created but not rehabilitated by the agency with the expectation that the route will be used for recreation.

For each user-created trail segment, justify the development score in the "comments" section. Use best judgment, explicitly rationalized, in determining how much the degree of apparent development influences the development score.

Complete campsite inventories along designated trails and at known visitor destination locations. Inventoried areas should be mapped for future monitoring to establish trends. Except in rare instances, a complete inventory of the remote, infrequently visited areas of an entire wilderness is not necessary.

When counting major trail features, the intent is not to count minor constructed elements that may be quite numerous (e.g., water bars, cribbing, or a flight of three or fewer steps). Examples of major trail features are included in the table above.

A campsite and an associated nearby problem area with human waste is counted as both a campsite and a non-structural recreation use site.

Changes in this value must be interpreted with care. Reported increases (or decreases) in user-created developments might be the result of changes in time and resources dedicated to on-the-ground patrol, rather than in the actual character of use.

There may be additional user-developed amenities that are not accounted for in this monitoring strategy (e.g., permanent fixed climbing anchors). That they are not included here does not mean they should be ignored or unmanaged.

Data Source

Field work and satellite imagery

Ancillary Data

Additional ancillary data should include a map file or other description of which developments are included in the database, with special emphasis on which trails are considered "agency," and which are considered "user-created".

To go to the fillable report form for this measure, click here.

Recreation Measure 4-7. *Type and extent of management restrictions.*

Technique

Each of the following types of regulations is assigned a score depending on its degree of restriction. If a wilderness has more than one type of regulation within one of the categories below, assign the score that corresponds to the most restrictive regulation in place (i.e. if a voluntary registration is provided at some wilderness trailheads but a mandatory, use limited permit is required at others, the permit score would be a 3).

Category	Type of restriction	Score
Campfires	No regulation	0
	Designated site; or (non-emergency) seasonal restrictions; or prohibited above (or below) designated elevation; or mandatory setback	1
	Total prohibition	2
Camping	No restriction	0
	Any mandatory setback	1
	Designated sites	2
	Assigned sites	3
	Overnight use prohibited	4
Group size limits	No restriction	0
	Group size limits in place	1
Area closure	No restriction	0
	Area closed to use	5
Fees	No fees	0
	Fees charged (e.g., charging a parking fee at a popular recreation site)	1
	Fees charged for wilderness entry	2
Permits (includes *individual* SRPs, but not SRPs for commercial services; excludes permits for research and similar permits)	No permit or registration	0
	Voluntary self-registration	1
	Mandatory, non-limiting permit or registration	2
	Mandatory, use limited	3
Human waste	No regulation	0
	Pack out required	3
Length of stay	No restrictions on length of stay (other than standard agency-wide restrictions)	0
	Length of stay limited (in excess of standard agency-wide restrictions)	1
Stock use	No restrictions	0
	Grazing by stock prohibited	1
	No off-trail stock use	2
	No camping with stock	3
	Stock use prohibited	4
Other activity-specific regulations	No restriction	0
	Limited (other than by area)	1
	Prohibited	2

After the score is assigned for each category of regulation, these scores will be weighted to reflect the geographic coverage of the regulation as follows:

1 = if the regulation applies to a sub-area of wilderness or all of the wilderness for only part of the year

2 = if the regulation applies to an entire wilderness

The value of the Type and Extent of Management Restrictions is the sum of the resulting numbers.

Definitions

Fees: count fees that are charged for access even if access to wilderness is not the sole purpose of the fee. For example, a multipurpose recreation site that also serves as a trailhead for a wilderness trail, or an entrance fee to a National Monument which must be paid prior to accessing a wilderness trailhead.

Other activity-specific regulations: examples include limitations or prohibitions on swimming, dogs, rockhounding, etc.

Example

Category	restriction score	weight	total score	description of restriction
Campfires	1	2	2	prohibited above tree line
Camping	2	1	2	designated along Taylor R.
Group size limits	1	2	2	10 people; 15 "heartbeats"
Area closure	0		0	
Fees	0		0	
Permits	1	2	2	permit boxes at all trailheads
Human waste	0		0	
Length of stay	0		0	
Stock use	1	1	1	July 1 - February 1
No swimming in Ojo Alamo	2	1	2	
Weed-free hay required				
Dogs on leash Mar 1 - Nov 30	1	1	1	
report this value →			**12**	

Sideboards & Notes

Data will be gathered every five years. Over time, an increase in this value is a decrease in this indicator of wilderness character.

Fees are counted in this measure if they are assessed for a non-wilderness purpose but would be required on wilderness users (e.g., parking fees, area entrance fees)

Do not count emergency closures in this measure.

Direct regulatory actions taken to increase opportunities for solitude will be defined as confining. Consequently, improvements in one opportunity necessarily entail declines in another. This should be explicitly noted where relevant, and ancillary data should track the rationales for actions taken. Similarly, direct regulatory actions taken to improve (or preserve) natural conditions will be defined as confining, and rationales should be noted in the ancillary data.

The value only captures three levels of extent (no regulation, sub-area, and total wilderness). Computing a more precise measure of spatial extent was deferred until some possible future revision in an effort to reduce the burden of reporting such new data.

Regulations imposed outside wilderness may differ in the way they affect the wilderness experience from regulations that govern behavior once a person enters a wilderness. This measure does not take into account whether regulations affect a person before the trip (e.g., use limits) or after they are inside a wilderness (e.g., campfire prohibitions).

Data Source

BLM Monument/Fire/Recreation specialist at field office. BLM Wilderness Site Page

To go to the fillable report form for this measure, click here.

OTHER FEATURES OF VALUE

Unique Measure 5-1. *Severity of disturbances to cultural resources*

Technique

Each monitored cultural resource is classified as to its status, with scores assigned by category. Scores for each resource are summed to generate a total score reported for this measure.

For each monitored cultural resource, if the status is:	Score
good	1
fair	2
poor	5
No Longer Eligible (NLE)	10

Definitions

Cultural Resources: for the purpose of this specific monitoring**,** may include *in situ* objects, structures, landscapes, and other ethnographic resources.

Monitored Cultural Resource: *Determination of which resources to include will be made by BLM cultural resource specialists in consultation with the State Historic Preservation Officer*. It is expected that the most significant resources (not all cultural resources) will be monitored for this protocol. It is expected that any resource(s) chosen would be either eligible for or listed on the National Register of Historic Places. A wilderness may not have any cultural resources that rise to this level of significance, in which case this measure might not be reported.

Good: the following conditions are all met:

a) The object(s), site, or area has been primarily affected only by natural forces over time; or, at the least, there is no evidence of modern human disturbance resulting in any loss of information potential. (Any past excavations must have been carried out in such a way that on-site integrity has been maintained, and any removal to off-site locations has been properly curated.)

b) Natural disturbance is acceptable and within the parameters of the appropriate wilderness or cultural resources plan. (For all status determinations, it is important to take into account that the criteria for preservation in wilderness are different than for non-wilderness settings. Listed properties must be adequately documented, but in general, there will be no interference with the weathering of cultural resources. Decisions to actively preserve them are based on a determination that the cultural resources are an extraordinary feature, and that decision is made in the context of individual wilderness plans, agency policy, the requirements of the Wilderness Act as well as the National Historic Preservation Act, and recent court decisions.)

c) Additional wilderness-specific conditions used to describe "good" conditions are met. These conditions should be agreed upon in consultation between Field Office and State Office cultural and wilderness program leads.

Fair: any one of the following conditions is present:

a) There appears to be minor disturbance by modern human activity (e.g., persistent re-arranging of potshards, visitor-created trails to the top of a culturally significant mountain, etc.).

b) Though not apparent to the untrained eye, some material may be missing from undocumented or poorly curated past removals, leading to some loss of information potential.

c) Greater-than-acceptable natural deterioration is threatened but has not occurred.

d) Human-caused deterioration from off-site impacts (e.g., air quality issues threatening rock art, erosion from nearby road cuts, impacts from grazing livestock) is threatened, but has not occurred.

e) Additional wilderness-specific conditions used to describe "fair" conditions are met.

Poor: any one of the following conditions is present:

a) There is clear evidence of major disturbance by modern human activity (e.g., pot hunting, graffiti, arson).

b) The site has clearly lost much of its information potential.

c) Unacceptable, irreversible natural deterioration has occurred.

d) Human-caused deterioration from off-site impacts has occurred.

e) Additional wilderness-specific conditions used to describe "poor" conditions are met.

NLE: the cultural resource has so deteriorated from human-caused effects that it is deemed no longer eligible for the National Register of Historic places.

Example

Resource i.d.	score	comments
LM 703345	1	
Three Door Ruin	2	digging in midden reported 8/2010; monitoring schedule adjusted
First Man Mesa	1	
report this value →	**4**	

Sideboards & Notes

Data for this report will be gathered every five years, though proper stewardship will require far more frequent monitoring. Over time, an increase in this value is a decrease in this indicator of wilderness character.

Note that there are important differences in what might be an acceptable level of natural degradation of cultural resources between those in wilderness and elsewhere. See discussion in the definition of "**good**," above.

This measure is subjective. Status classification should be documented as completely as possible to ensure adequate comparisons over time with changing staff.

Changes in this reported value must be interpreted carefully. An increase in the value reported for this measure may be the result of adding an additional "significant" site rather than the deterioration of existing sites. It might be necessary that two scores be reported for this measure: the value (and change, if any) from the previous report in only the sites included in the baseline report, and a second value of *all* currently monitored cultural resources. In essence, a new "baseline" might be produced.

Be careful in the selection of resources to be monitored in this measure. This is an *indicator* of overall condition, rather than a report on the condition of every cultural site within the wilderness.

Data Source

BLM Field Office cultural resource specialists/archeologists.

To go to the fillable report form for this measure, click here.

Unique Measure 5-2. *Severity of disturbances to other features of value*

Technique

Each monitored feature is classified as to its status, with scores assigned by category. Scores for each resource are summed to generate a total score reported for this measure.

For each monitored feature, if the status is:	Score
good	1
fair	2
poor	5
lost	10

Definitions

Other Features: Other Features of Value may include "ecological, geological, or other features of scientific, educational, scenic, or historical value" (Wilderness Act, Section 2(c)). This quality focuses on tangible features integral to the particular wilderness. Consider features identified in the area's designation legislation, nationally recognized features, and features that define how people think/value wilderness. Example: cave formations, dinosaur tracks, lava beds.

Integral: necessary to make a whole complete; essential or fundamental. A value that is unique and essential to wilderness character.

Good: the following conditions are both met:

a) The feature has been primarily affected only by natural forces over time; or, at the least, there is no evidence of modern human disturbance resulting in any loss of scientific, educational, or historical value.

b) Additional wilderness-specific conditions used to describe "good" conditions are met.

Fair: any one of the following conditions is present:

a) There appears to be minor disturbance by modern human activity (e.g., broken cave formations, modern graffiti in caves, visitor-created social trails impacting the feature, etc.).

b) Though not apparent to the untrained eye, some material may be missing, leading to some loss of scientific, educational, or historical value.

c) Human-caused deterioration from off-site impacts (e.g., erosion from nearby road cuts, impacts from grazing livestock) is threatened, but has not occurred.

d) Additional wilderness-specific conditions used to describe "fair" conditions are met.

Poor: any one of the following conditions is present:

a) There is clear evidence of major disturbance by modern human activity (e.g., graffiti, theft of resources).

b) The site has clearly lost much of its scientific, educational, or historical value.

c) Human-caused deterioration from off-site impacts has occurred.

d) Additional wilderness-specific conditions used to describe "poor" conditions are met.

Lost: the resource has so deteriorated from human-caused effects, or has been removed in its entirety, that it is considered lost.

Example

Resource i.d.	score	comments
Dark Hole Cave	2	little modern graffiti, few broken formations
report this value →	**2**	

Sideboards & Notes

This measure is only required if relevant. **Carefully consider whether a feature truly defines the wilderness character for a wilderness, and whether the quality of the data about this feature is sufficient to support using it as a measure.**

Determining which, if any, resources to include will be made by wilderness specialists in consultation with BLM resource specialists. It is expected that only the most significant resources (as opposed to all important site-specific geological or other features) will be monitored for this protocol.

Data for this report will be gathered every five years, though proper stewardship will require far more frequent monitoring. Over time, an increase in this value is a decrease in this indicator of wilderness character.

This measure is subjective. Status classification should be documented as completely as possible to ensure adequate comparisons over time with changing staff.

Focus monitoring on the physical condition of select features, not the scientific, educational, or scenic value derived from these features.

Other types of features with unique ecological, scientific, educational, and scenic value are often more appropriately included in one of the other four qualities. New measures of this quality would only be used to capture those values not already addressed elsewhere (e.g., scenic values under the Natural or Undeveloped qualities, wildlife/botanical values under the Natural quality, etc.).

It is worth noting in the comments if the actions that damage or disturb integral geological, paleontological, or other features are authorized or unauthorized actions.

Data Source

BLM State and District Office botanists, and paleontologists.

To go to the fillable report form for this measure, click here.

NATIONAL CONSERVATION LANDS

TREND ANALYSIS/ DATA MANAGEMENT

TREND ANALYSIS / DATA MANAGEMENT

Trend Analysis

Trend analysis is currently taking place at the wilderness level at this time. Consistent Wilderness Character Monitoring needs to occur before an agency-wide trend report is developed. Wilderness level staff are encouraged to consider reporting WCM trends at the wilderness-level as they gather multiple years of data.

Wilderness level experience will help inform future trend analysis at the state and/or national level. It is recommended that staff consider any change in the calculation of a measure over time. Each change should be evaluated on a case-by-case basis to guide management decisions.

Data Analysis, Storage, and Reporting

The Wilderness Character Monitoring Database is an online, interagency resource for wilderness character monitoring data entry, data storage, data analysis, and reporting. An office's annual and 5-year measure data should be inputted into this system. The database is intended to be used as the source of local, regional, national, and interagency trend reports for wilderness character monitoring.

The Wilderness Character Monitoring Database is currently hosted by the University of Montana. Access to the database can be granted by the BLM agency representatives (National Wilderness Program Lead and HQ Society for Wilderness Stewardship Dayen). BLM employees responsible for managing a specific wilderness area are responsible for keeping up with data entry.

Changing the Wilderness Character monitoring guide

A process is needed to ensure that this protocol reflects contemporary thinking about wilderness character, that lessons learned during implementation can be used to improve the protocol, and that the protocol uses the best available data.

To that end, updates to this guide could be made each year. Modification of existing indicators and measures could be made based on:

- Experience gained during the practical implementation of the monitoring protocol.
- Availability of new data sources for existing indicators and measures.
- New research or perspectives about wilderness character monitoring

Changes to the Wilderness Character reporting or data storage could be made based on new technology or BLM data management requirements.

Requests to change this guide can be submitted to State/National Wilderness Program Leads at any time. Requests can be submitted by any BLM employee, wilderness researchers, or the public. The National Wilderness Program will consider all change requests and provide feedback and assistance on each case. Any proposed changes to the protocol would be vetted through a review process that involves field, district, and state office personnel.

APPENDIX

WCM Templates

Includes:

- **Baseline/Annual/5-year report template**
- **Travel routes flow chart.**

Baseline

- Includes **all measures**.
- Add table of contents after title page.
- If possible, provide an introduction section.
- Update footer.

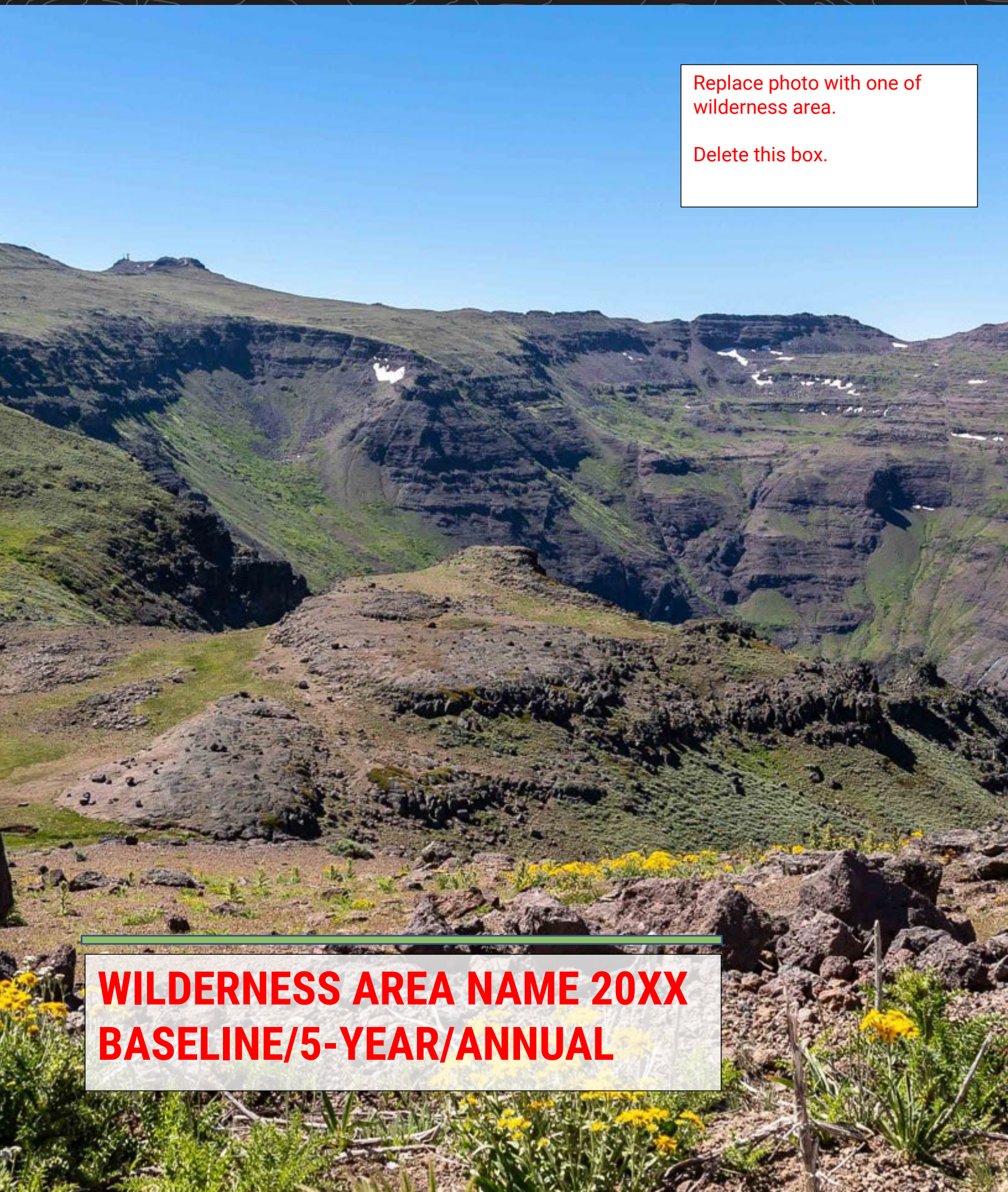
Annual Report

- Includes measures: **1-1, 1-2, 1-3, 2-4, 3-3, 3-4, 3-5, 4-1, and 4-6.**
- Delete 5-year measures from data table and remove those measure pages.
- Add table of contents after title page.
- Introduction section is not necessary.
- Update footer.

5-Year Report

- Includes **all measures**.
- Add table of contents after title page.
- If including introduction, highlight last 5-years of monitoring efforts.
- Update footer.

NATIONAL CONSERVATION LANDS



Replace photo with one of wilderness area.

Delete this box.

WILDERNESS AREA NAME 20XX BASELINE/5-YEAR/ANNUAL

INTRODUCTION

This is an optional section where the author(s) of the **baseline/five-year** (not necessary for annual) report can provide:

- Insight on the data collection process
- Relevant background/historical information on the area
- People/groups who provided assistance
- Popular uses of the area
- Visitation information
- Which implementation guide was used
- If 5-year report include insight on the 5-years of WCM efforts

WILDERNESS CHARACTER BASELINE/ ANNUAL/5-YEAR DATA REPORT YEAR

Wilderness Name

	Measure	Value
1-1	Number of authorized actions and persistent structures designed to manipulate plants, animals, pathogens, soil, and water	
1-2	Percent of natural fire starts that are manipulated within the boundaries of the wilderness	
1-3	Number of unauthorized actions by agencies, citizen groups, or individuals that manipulate plants, animals, pathogens, soil, water, or fire	
2-1	Natural Measure 2-1. Departure from historical vegetation using Vegetation Condition Class (VCC) [pilot testing]	
2-2	Abundance and distribution of non-native plant species	
2-3	Distribution and impact of non-native animal species	
2-4	AUMs of livestock use inside wilderness	
3-1	Index of physical development for authorized or pre-designation structures and developments	
3-2	Area and existing or potential impact of inholdings	
3-3	Type and amount of administrative use (but not law enforcement or emergency use) of motor vehicles, motorized equipment, and mechanical transport	
3-4	Proportional use of motor vehicles, motorized equipment, and mechanical transport in in law enforcement or emergency responses	
3-5	Type and amount of use of motor vehicles, motorized equipment, and mechanical transport not authorized by the federal land manager	
4-1	Amount of visitor use	
4-2	Remoteness inside the wilderness affected by travel routes	
4-3	Area of wilderness affected by developments near the wilderness	
4-4	Severity of the effect of developments near the wilderness	
4-5	Type and number of agency-provided recreation facilities	
4-6	Type and number of user-created recreation facilities	
4-7	Type and extent of management restrictions	
5-1	Severity of disturbances to cultural resources	
5-2	Severity of disturbances to other features of value *(if applicable)*	

Untrammeled Measure 1-1. *Number of authorized actions and persistent structures designed to manipulate plants, animals, pathogens, soil, and water*

unique i.d. name or number	count	type	reason
	0		
	0		
	0		
	0		
	0		
	0	← report this value	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Fill out form as each new project is implemented. Double-click on table above to fill out form in Excel. Include one entry for each persistent structure that is in operation at any time during the fiscal year. Insert new rows as necessary.
    a. Make sure each project has a unique identifier (e.g., "Three-Spring Guzzler"; "2010.001"). For structures, GPS coordinates are preferable.
    b. Briefly describe type of action or structure (e.g., "old guzzler"; "weed-herbicide"; "weed-mechanical")
    c. Briefly describe reason for action or structure (e.g., "support T&E species"; "improve Natural quality")
    d. Reference appropriate specific authorization (e.g., "EA NM-019-90-68")
2. COUNT should automatically calculate in Excel
3. *If you are not using an active form (with embedded Excel spreadsheet):*
    a. Enter data as described above
    b. COUNT the number of actions or structures listed. Enter this result in the Black Box.
4. **Black box**: the total number of actions or persistent structures. Enter this amount as the "Value" for Measure 1-1 on the Wilderness Character Data Report form.

Untrammeled Measure 1-2. *Percent of natural fire starts that are manipulated within the boundaries of the wilderness*

	unique i.d. name or number	type / reason for manipulation / comments	manipulation
0	COUNT		0
		PERCENT (report this value →)	**0**

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table to fill out form in Excel. Insert new rows as necessary.
    a. Make sure each natural fire start has a unique identifier (e.g., "Big Sage Flat Fire")
    b. If the fire is manipulated within the boundaries of the wilderness, put a "1" in the "manipulation" column; if the fire was not manipulated, enter a "0"
2. Count, Sum, and Percent should all automatically calculate in Excel.
3. *If you are not using an active form (with embedded Excel spreadsheet):*
    a. Enter data as described above
    b. SUM the entries in the "manipulation" column
    c. Divide the SUM by the number of fires listed, multiply by 100, and round to the nearest whole number. Enter this result in the Black Box.
4. **Black box**: the percent of natural fire starts that are manipulated within the boundaries of the wilderness. Enter this number (do not use the percent sign) as the "Value" for Measure 1-2 on the Wilderness Character Data Report form.

Untrammeled Measure 1-3. *Number of unauthorized actions by agencies, citizen groups, or individuals that manipulate plants, animals, pathogens, soil, water, or fire*

unique i.d. name or number	type	agency/group/person responsible	BLM response
0	← report this value		

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Fill out form as each new action is discovered. Double-click on table above to fill out form in Excel. Insert new rows as necessary.
    a. Make sure each project has a unique identifier (e.g., "T12N, R3W, Sec.5 Chukar Guzzler")
    b. Briefly describe type of action or structure (e.g., "new guzzler"; "fish stocking")
    c. List agency/group/person responsible (e.g., "unknown"; "DOW")
    d. Briefly describe BLM response to each action (e.g., "removed guzzler"; "none")
2. COUNT should automatically calculate in Excel
3. *If you are not using an active form (with embedded Excel spreadsheet):*
    a. Enter data as described above
    b. COUNT the number of actions or structures listed. Enter this result in the Black Box.
4. **Black box**: the total number of unauthorized actions. Enter this amount as the "Value" for Measure 1-3 on the Wilderness Character Data Report form.

Natural Measure 2-1. *Departure from historical vegetation using Vegetation Condition Class (VCC) [pilot testing]*

Vegetation Condition Class	Percentage	VCC Multiplier	score	comments
Class I.A		1	0	
Class I.B		1.5	0	
Class II.A		2	0	
Class II.B		2.5	0	
Class III.A		3	0	
Class III.B		3.5	0	
		report this value →	0	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel: insert new rows as necessary.
    a. Input the percentage of your wilderness that is each vegetation condition class.
    b. Provide comments from vegetation and fire specialists on reliability and impact
2. SCORE should automatically calculate in Excel
3. If you are not using an active form (with embedded Excel spreadsheet):
    a. Enter data as described above
4. **Black box**: the score of Vegetation Condition Class. Enter this amount as the "Value" for Measure 1-3 on the Wilderness Character Data Report form

Natural Measure 2-2. *Abundance and distribution of non-native plant species*

Plant Species	estimated percent score	density score	total score	comments
			0	
			0	
			0	
			0	
		report this value →	**0**	

Visual Representations

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel. For each species, enter the areal extent score and the density score as explained in the Implementation Guide. Insert new rows as necessary. Make sure the formatting from the "total" column is copied as well.
2. Comments could explain the rationales of the ratings or give locations.
3. The "totals" and SUM should automatically calculate in Excel.
4. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter data as described above
   b. Multiply the areal extent score by the density score for each species and enter each result in the corresponding "total" column.
   c. SUM the "total" column. Enter this result in the Black Box.
5. **Black box**: Abundance and distribution of non-native species. Enter this number as the "Value" for Measure 2-2 on the Wilderness Character Data Report form.

Natural Measure 2-3. *Abundance and impact of non-native animal species*

Animal Species	estimated percent score	impact score	total score	comments
			0	
			0	
			0	
			0	
		report this value →	**0**	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel. For each species, enter the areal extent score and the density score as explained in the Implementation Guide. Insert new rows as necessary. Make sure the formatting from the "total" column is copied as well.
2. Comments could explain the rationales of the ratings or give locations.
3. The "totals" and SUM should automatically calculate in Excel.
4. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter data as described above
   b. Multiply the areal extent score by the density score for each species and enter each result in the corresponding "total" column.
   c. SUM the "total" column. Enter this result in the Black Box.
5. **Black box**: Abundance and impact of non-native species. Enter this number as the "Value" for Measure 2-3 on the Wilderness Character Data Report form.

Natural Measure 2-4. *AUMs of livestock use inside wilderness*

allotment or pasture	AUMs used	% w/in Wilderness	score	comments
			0	
			0	
			0	
			0	
			0	
		report this value →	0	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel. For each allotment or pasture, enter the AUMs of *actual* use (not *permitted* use, which may be higher). Enter the percent of the allotment or pasture which is within the wilderness (e.g., if ¾ of the allotment is inside the wilderness, enter "75," not ".75." Every allotment should have a unique identifier. Insert new rows as necessary. Make sure the formatting from the "score" column is copied as well.
2. If less than 100% of the allotment or pasture is within wilderness, use the "comments" column to describe how the estimated percentage was calculated.
3. Score and Sum should automatically calculate in Excel.
4. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter data as described above.
   b. Multiply each "AUMs used" by the "% within wilderness," divide by 100, and enter the result in the "score" column.
   b. Add the "scores" together. Enter this result in the Black Box.

Undeveloped Measure 3-1. *Index of physical development for structures or installations*

reference map:			
Buildings	value		score
			0
			0
			0
Fences	value	length (nearest .1 mile)	score
			0.0
			0.0
			0.0
Dams	value		score
			0
			0
			0
ROWs (etc.)	value	length (nearest .1 mile)	score
			0.0
			0.0
			0.0
Non-linear infrastructure or site	value		score
			0
			0
			0
Mines	value	size (nearest acre)	score
			0
			0
			0
		report this value →	**0.0**

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel. Insert new rows as necessary. Make sure the formatting from the "score" column is copied as well.

a. Make sure each piece of infrastructure has a unique identifier (e.g., "Big Sage Patrol Cabin"; "corral at T12N R3W, Sec. 34, NENE"). GPS coordinates are preferable.
b. Enter the value of the structure or development from the Implementation Guide in the "value" column.

c. For fences and ROWs, enter the length to the nearest tenth of a mile in the length column (e.g., for a fence 2¼ miles long, enter "2.3"
d. For mines, enter the size to the nearest acre. Round up (e.g., for a mine 1.3 acres enter "2" in the size column). For mines under 1 acre, enter "1"
2. "Scores" and SUM should automatically calculate in Excel.

3. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter Value and Length or Size (if applicable) for each structure or development as described above
   b. For Buildings and Non-linear infrastructure entries, copy Value amount into Score column
   d. For Fences and ROWs entries, multiply the Value by the Length, and that product by 10. Enter the result in the Score column
   e. For Mines, multiply the Value by the size. Enter the result in the Score column
   c. SUM the Score column. Enter this result in the Black Box.
4. **Black box**: the Index of Physical Development. Enter this number as the "Value" for Measure 3-1 on the Wilderness Character Data Report form.

Undeveloped Measure 3-2. *Area and existing or potential impact of inholdings*

Inholding location	Acres	Development rating	score
			0
			0
			0
			0
		report this value →	0

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel. Insert new rows as necessary. Make sure the formatting from the "score" column is copied as well.
    a. Make sure each inholding includes the legal location
    b. Enter the acreage of the inholding in the "Acres" column
    c. Enter the development potential rating from the Implementation Guide in the "Development rating" column.
    2. "Scores" and SUM should automatically calculate in Excel.
3. *If you are not using an active form (with embedded Excel spreadsheet):*
    a. Enter Acres and Development rating for each inholding as described above
    b. Multiply the Acres by the Development rating. Enter the result in the "score" column.
    c. SUM the "score" column. Enter this result in the Black Box.
4. **Black box**: the Inholding Index. Enter this number as the "Value" for Measure 3-2 on the Wilderness Character Data Report form.

Undeveloped Measure 3-3. *Type and amount of administrative use (but not law enforcement or emergency use) of motor vehicles, motorized equipment, and mechanical transport*

Action or Project	# motor vehicles	days per motor vehicle	# non-motor mech. trans.	days per mech. Trans.	# motor equip.	days per motor equip.	score	agency	Minimum Requirements Analysis & Other Comments
							0		
							0		
							0		
							0		
						report this value →	0		

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel. Insert new rows as necessary. Make sure the formatting from the "score" column is copied as well.
    a. Each action or project should have a unique name
    b. Enter the number of motor vehicles, pieces of mechanical transport and items of motorized equipment, as well as the number of days each is authorized, in the corresponding columns.
    c. Enter the identifier of the Minimum Requirements Analysis used to authorize these uses, as well as the agency using the equipment (e.g., "BLM"; "DOW")
2. "Scores" and SUM should automatically calculate in Excel.
3. *If you are not using an active form (with embedded Excel spreadsheet):*
    a. Enter data as described above
    b. Multiply the # of motor vehicles by the number of days these are authorized, and multiply that product by 2; multiply the # of pieces of mechanical transport by the number of days these are authorized; multiply the # of pieces of motorized equipment by the number of days these are authorized. Add the three multiplicands together and enter the result in the "score" column.
    c. SUM the "score" column. Enter this result in the Black Box.

4. **Black box**: the Index of administrative and non-emergency use of prohibited equipment. Enter this number as the "Value" for Measure 3-3 on the Wilderness Character Data Report form.

Undeveloped Measure 3-4. *Proportional use of motor vehicles, motorized equipment, and mechanical transport in law enforcement or emergency responses*

Law Enforcement Action or Emergency	# motor vehicles	days per motor vehicle	# non-motor mech. trans.	days per mech. trans.	# motor equip.	days per motor equip.	score	prohib. uses per emergency **report this value ↓**
							0	
							0	
							0	
							0	
0 COUNT						SUM	0	**0**

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table to fill out form in Excel. Insert new rows as necessary. Make sure the formatting from the "score" column is copied as well.
    a. Each emergency should have a unique name, including the lead agency
    b. Enter the number of motor vehicles, pieces of mechanical transport and items of motorized equipment, as well as the number of days each is authorized, in the corresponding columns.
    2. "Scores," COUNT, SUM, and Black Box should automatically calculate in Excel.
3. *If you are not using an active form (with embedded Excel spreadsheet):*
    a. Enter data as described above
    b. Multiply the # of motor vehicles by the number of days these are authorized, and multiply that product by 2; multiply the # of pieces of mechanical transport by the number of days these are authorized; multiply the # of pieces of motorized equipment by the number of days these are authorized. Add the three multiplicands together and enter the result in the "score" column.
    c. SUM the "score" column.
    d. COUNT the number of emergencies.
    e. Divide the SUM by the COUNT. Enter this result in the Black Box.

4. **Black box**: the proportional use of prohibited equipment in emergencies. Enter this number as the “Value” for Measure 3-4 on the Wilderness Character Data Report form.

Undeveloped Measure 3-5. *Type and amount of use of motor vehicles, motorized equipment, and mechanical transport not authorized by the federal land manager*

Category	frequency scale	frequency score	extent scale	extent score	total	comments
Public					0	
Permittees					0	
Agencies					0	
				report this value →	0	

Visual Representation

Attach any relevant Figures/tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table above to fill out form in Excel. For each category of user, enter the frequency of unauthorized use score and the extent of unauthorized use score as explained in the Implementation Guide. Insert new rows as necessary. Make sure the formatting from the "total" column is copied as well.
2. Comments could include responsible parties (if known) and BLM actions taken.
3. "Totals" and SUM should automatically calculate in Excel.
4. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter data as described above
   b. Multiply the frequency score by the extent score for each category and enter each result in the corresponding "total" column.
   c. SUM the "total" column. Enter this result in the Black Box.
5. **Black box**: Index of the unauthorized use of prohibited equipment. Enter this number as the "Value" for Measure 3-5 on the Wilderness Character Data Report form.

Recreation Measure 4-1. *Amount of visitor use*

Number	comments
[redacted]	

Visual Representation

Attach any relevant Figures/tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Enter the number used to approximate visitor use. In the "comments" section, detail the procedure used to derive this number.
2. **Black box**: Estimated amount of visitor use. Enter this number as the "Value" for Measure 4-1 on the Wilderness Character Data Report form.

Recreation Measure 4-2. *Remoteness inside the wilderness affected by travel routes*

Number of Acres	Remoteness Zone Factor	Remoteness Score	Reference
		0	
		0	
		0	
report this value →		**0**	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Required.

Comments

Provide any background details or perspectives to elaborate data. Delete if none

Directions

1. Enter the "Number of Acres" and "Remoteness Zone Factor" as calculated according to the Implementation Guide. The "reference" section should either link to or name the GIS map used to generate this data.
2. **Black box**: Remoteness Score for the Wilderness. Enter these numbers as the "Value" for Measure 4-2 on the Wilderness Character Data Report form.

Recreation Measure 4-3. *Area of wilderness affected by developments that are near the wilderness*

Area	reference
[redacted]	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Required.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Enter the "Area" as calculated according to the Implementation Guide. The "reference" section should either link to or name the GIS map used to generate this data.
2. **Black box**: Area of the wilderness affected. Enter this number as the corresponding "Values" for Measure 4-3 on the Wilderness Character Data Report form.

Recreation Measure 4-4. *Severity of the effect of developments that are near the wilderness*

Severity	reference

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Required.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Enter the "Severity" as calculated according to the Implementation Guide. The "reference" section should either link to or name the GIS map used to generate this data.
2. **Black box**: Severity of the effect of nearby developments to the wilderness. Enter this number as the corresponding "Values" for Measure 4-4 on the Wilderness Character Data Report form.

Recreation Measure 4-5. *Type and number of agency-provided recreation facilities*

reference map:					
Trail segment	length (nearest .1 mile)	devel. score	signs score	total	comments
				0	
				0	
				0	
				0	
Major trail feature		value	number	total	
				0	
				0	
				0	
Campsite development		value	number	total	
				0	
				0	
				0	
Amenity		value	number	total	
				0	
				0	
				0	
			report this value →	**0.0**	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table to fill out form in Excel. Insert new rows as necessary. Make sure the formatting from the "total" column is copied as well.
   a. Make sure each trail segment has a unique identifier (e.g., "Piñon Trail, trailhead to mile 2.3"; "Piñon Trail, AA to AB"). Major trail features, campsite developments, and campsite amenities should have unique identifiers unless there are several grouped together (e.g., 2 ladders on Angel Arch Trail). GPS coordinates are preferable.
   b. For each trail segment, enter the length to the nearest tenth of a mile in the length column (e.g., for a trail segment 2¼ miles long, enter "2.3")
   c. For each trail segment, enter the development score and the signs score from the Implementation Guide in their respective columns.

d. For major trail features, campsite developments, and campsite amenities, enter the value of each as determined in the Implementation Guide. Enter "1" as the number unless you have grouped similar developments together as described above.
e. Comment section should be used to link or reference map or other GIS data to track locations of each specific facility.
2. "Totals" and SUM should automatically calculate in Excel.

3. *If you are not using an active form (with embedded Excel spreadsheet):*
a. Enter length, development score, and signs score for each trail segment using the Implementation Guide as described above. Multiply these values together for each trail segment's "total."
b. For major trail features, campsite developments, and campsite amenities, enter the value of each as detailed in the Implementation Guide. If you are grouping like developments together, multiply that value accordingly. Enter the value (or the value multiplied by the number of like developments) in each respective cell in the "total" column.
c. SUM the "total" column. Enter this result in the Black Box.

4. **Black box**: Index of agency-provided recreation facilities. Enter this number as the "Value" for Measure 4-5 on the Wilderness Character Data Report form.

Recreation Measure 4-6. *Type and number of user-created recreation facilities*

reference map:					
User-created trail segment	length (nearest .1 mile)	devel. score	signs score	total	comments
				0.0	
				0.0	
				0.0	
				0.0	
User-degraded trail segment	length (nearest .1 mile)			total	
				0.0	
				0.0	
				0.0	
User-developed major trail feature		value	number	total	
				0	
				0	
				0	
User-developed campsite		value	number	total	
				0	
				0	
				0	
User-developed amenity		value	number	total	
				0	
				0	
User-developed rec site (non-camping)		value	number	total	
				0	
				0	
				0	
			report this value →	0.0	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table to fill out form in Excel. Insert new rows as necessary. Make sure the formatting from the "total" column is copied as well.
    a. Make sure each trail segment has a unique identifier (e.g., "old road to windmill," "trailhead to stock pond," "Trail 101, segment AA") User-degraded trail segments, major trail features, campsite developments, campsite amenities, and non-camping recreation sites should have unique identifiers unless there are several

grouped together (e.g., "2 campsites at Ladder Canyon Overlook"). GPS coordinates are preferable.

b. For each "trail segment" or "degraded trail segment," enter the length to the nearest tenth of a mile in the length column (e.g., for a trail segment 2¼ miles long, enter "2.3")

c. For each trail segment, enter the development score and the signs score from the Implementation Guide in their respective columns.

d. For major trail features, campsite developments, campsite amenities, and non-camping recreation sites, enter the value of each as determined in the Implementation Guide. Enter "1" as the number unless you have grouped similar developments together as described above.

e. Comment section should be used to link or reference map or other GIS data to track locations of each specific facility.

2. "Totals" and SUM should automatically calculate in Excel.

3. *If you are not using an active form (with embedded Excel spreadsheet):*

a. Enter length, development score, and signs score for each trail segment using the Implementation Guide as described above. Multiply these values together for each trail segment's "total."

b. For each degraded trail segment, enter the length (to the nearest 0.1 mile). Double that amount and enter the result in that segment's "total" cell.

b. For major trail features, campsite developments, amenities, and non-camping recreation sites, enter the value of each as detailed in the Implementation Guide. If you are grouping like developments together, multiply that value accordingly. Enter the value (or the value multiplied by the number of like developments) in each respective cell in the "total" column.

c. SUM the "total" column. Enter this result in the Black Box.

4. **Black box**: Index of user-created recreation facilities. Enter this number as the "Value" for Measure 4-6 on the Wilderness Character Data Report form.

Recreation Measure 4-7. *Type and extent of management restrictions*

Category	restriction score	weight	total score	description of restriction
Campfires			0	
Camping			0	
Group size limits			0	
Area closure			0	
Fees			0	
Permits			0	
Human waste			0	
Length of stay			0	
Stock use			0	
Other activity-specific regulations			0	
Other activity-specific regulations			0	
Other activity-specific regulations			0	
		report this value →	**0**	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. Double-click on table to fill out form in Excel. For each category of restriction, enter the "restriction score" and "weight" as explained in the Implementation Guide. Insert new "*other activity-specific regulations*" rows as necessary. Make sure the formatting from the "total" column is copied as well.
2. "Totals" and SUM should automatically calculate in Excel.
3. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter data as described above
   b. Multiply the restriction score by the weight for each category and enter each result in the corresponding "total" column.
   c. SUM the "total" column. Enter this result in the Black Box.
5. **Black box**: Index of management restrictions. Enter this number as the "Value" for Measure 4-7 on the Wilderness Character Data Report form.

Unique Measure 5-1. *Severity of disturbances to cultural resources*

Resource i.d.	score	comments
report this value →	0	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. For each cultural resource, enter the condition score as explained in the Implementation Guide. Every cultural resource should have a unique identifier. Insert new rows as necessary. Make sure the formatting from the "score" column is copied as well.
2. Comments could include details on the status or trends of each resource.
3. SUM should automatically calculate in Excel.
4. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter data as described above
   b. Add the individual condition scores together. Enter this result in the Black Box.
5. **Black box**: Index of severity of human-caused disturbances to cultural resources. Enter this number as the "Value" for Measure 5-1 on the Wilderness Character Data Report form.

Unique Measure 5-2. *Severity of disturbances to other features of value (optional)*

Other Feature of Value	score	comments
report this value →	0	

Visual Representation

Attach any relevant Figures/Tables/Maps/Photos etc. Delete if none.

Comments

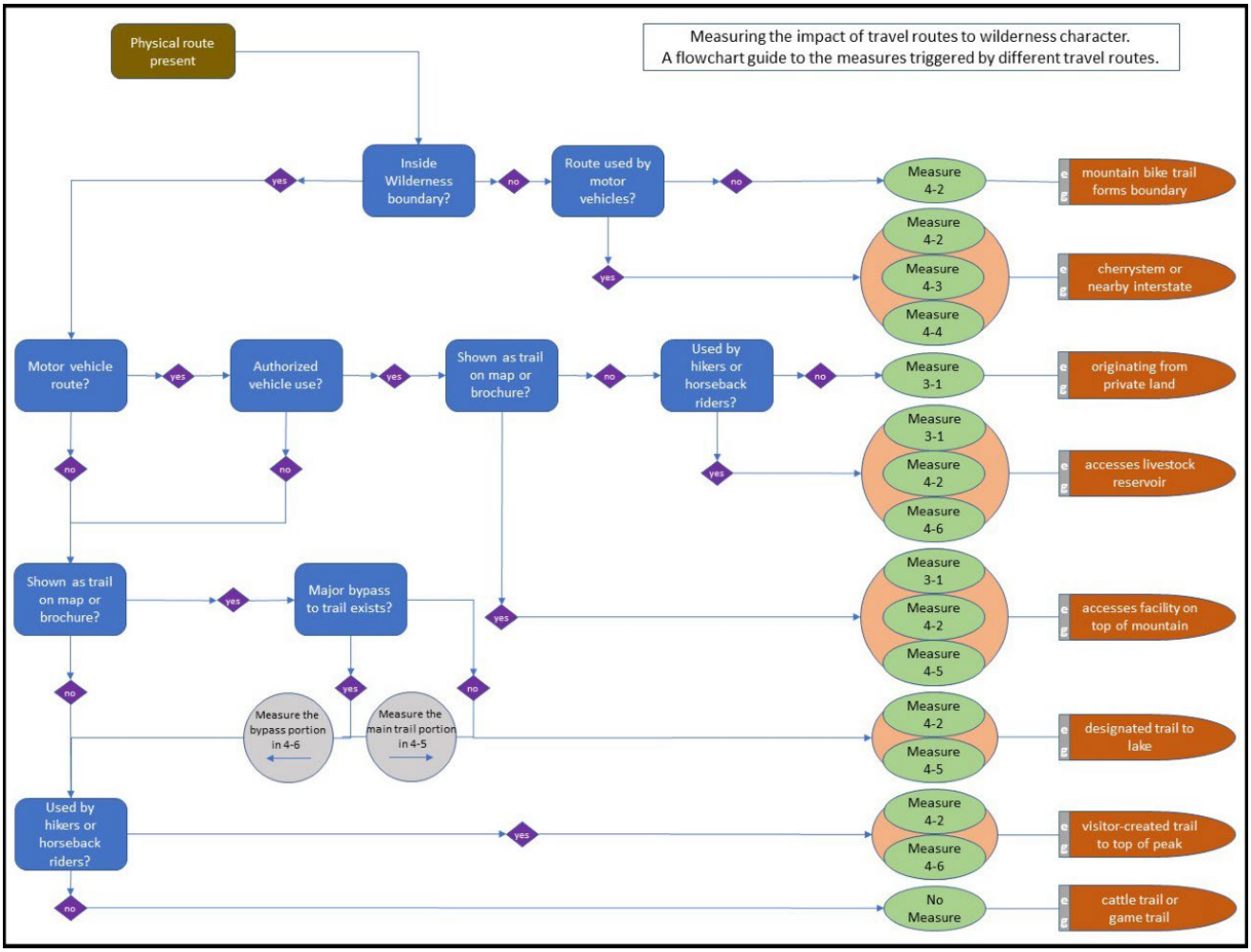
Provide any background details or perspectives to elaborate data. Delete if none.

Directions

1. For each feature, enter the status score as explained in the Implementation Guide. Insert new rows as necessary. Make sure the formatting from the "total" column is copied as well.
2. Comments could explain the rationales of the ratings.
3. The "totals" and SUM should automatically calculate in Excel.
4. *If you are not using an active form (with embedded Excel spreadsheet):*
   a. Enter data as described above
   b. SUM the "total" column. Enter this result in the Black Box.
5. **Black box**: Severity of disturbances to other features of value. Enter this number as the "Value" for Measure 5-2 on the Wilderness Character Data Report form.

Accounting for Travel Routes in Wilderness

The following is a flowchart to aid in identifying the measures under which travel routes used for various purposes are recorded.



Notes:

- Flowchart to aid in identifying whether travel routes are recorded in Measures 3-1, 4-2, 4-3, 4-4, 4-5, 4-6, or a combination of these measures.
- The route types provided above may not be the only examples that fit the group of measures specified.
- Review each measure's specific instructions to ensure how the route should be recorded in the measure indicated by the flowchart. For example, an interstate freeway would only be recorded in Measure 4-4 if it is within 5 miles of the wilderness boundary.