

Wilderness Stewardship Division
Wilderness Stewardship Program

National Park Service
U.S. Department of the Interior



Wilderness Stewardship Plan Handbook

PLANNING TO PRESERVE WILDERNESS CHARACTER

January 2014



“Something will have gone out of us as a people if we ever let the remaining wilderness be destroyed; if we permit the last virgin forests to be turned into comic books and plastic cases; if we drive the few remaining members of the wild species into zoos or to extinction; if we pollute the last clear air and dirty the last clean streams and push our paved roads through the last of the silence, so that never again will Americans be free in their own country from the noise, the exhausts, stinks of human and automotive waste. And so that never again can we have the chance to see ourselves single, separate, vertical and individual in the world, part of the environment of trees and rocks and soil, brother to the other animals, part of the natural world and competent to belong in it. Without any remaining wilderness we are committed wholly, without chance for even momentary reflection and rest, to a headlong drive into our technology termite-life, the Brave New World of a completely man-controlled environment. We need wilderness preserved—as much of it as is still left, and as many kinds—because it was the challenge against which our character as a people was formed. The reminder and the reassurance that it is still there is good for our spiritual health even if we never once in ten years set foot in it. It is good for us when we are young, because of the incomparable sanity it can bring briefly, as vacation and rest, into our insane lives. It is important to us when we are old simply because it is there—important, that is, simply as an idea....These are some of the things wilderness can do for us. That is the reason we need to put into effect, for its preservation, some other principle than the principles of exploitation or ‘usefulness’ or even recreation. We simply need that wild country available to us, even if we never do more than drive to its edge and look in. For it can be a means of reassuring ourselves of our sanity as creatures, part of the geography of hope.”

Wallace Stegner
Coda: Wilderness Letter (1960)

WILDERNESS STEWARDSHIP PLAN HANDBOOK

PLANNING TO PRESERVE WILDERNESS CHARACTER

**Developed by the
NPS Wilderness Character Integration Team with funding and support from the
NPS Office of Park Planning and Special Studies and the
Wilderness Stewardship Division**

**A Companion Document to the 2014
*Keeping It Wild in the National Park Service:
A User Guide to Integrating Wilderness Character into
Park Planning, Management, and Monitoring***

This handbook is an update to the original *Wilderness Stewardship Plan Handbook 2004*. The purpose of the *Wilderness Stewardship Plan Handbook 2014* is to provide direction for creating wilderness stewardship plans, driven by the concept of preserving wilderness character. The *Handbook* focuses on how to incorporate wilderness policy and wilderness character into a wilderness stewardship plan and also offers a general overview of planning and compliance to be useful for those with and without a professional background in planning.

I. Wilderness Stewardship Planning Process

Internal scoping involves compiling basic wilderness information and developing a wilderness character narrative that describes the wilderness. Anticipated issues and opportunities are identified, as well as who should be included in the process: National Park Service (NPS) staff, tribes, agencies, and the public. Should the wilderness stewardship plan be combined with another type of plan? What other data or expertise are needed? An environmental screening form needs to be completed and a project agreement developed with all parties to be involved.

External scoping opens the process to tribes, agencies, and the public to identify issues and opportunities and set goals and objectives for the wilderness stewardship plan.

Gathering and analyzing data are integral to the planning effort. Data are used to improve understanding of existing wilderness character conditions and issues to be addressed in planning, and provide a sound basis for decision making.

Develop the plan is the next step, which at its heart identifies desired conditions, indicators, measures, standards, and management actions in a framework for making decisions. The measures need to fit with the wilderness character framework, *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System*. Management zone types are developed with desired conditions. A range of alternatives that meet goals and objectives are identified, including a no-action alternative and a preferred alternative and impacts for each, and shared with the public, tribes, and other agencies.

The draft plan includes the appropriate level of compliance (an environmental assessment or environmental impact statement), and depending on the compliance document and results of public involvement, either a Finding of No Significant Impact or a Final Plan and Record of Decision is prepared.

Implementation includes monitoring the selected wilderness character measures, comparing them with standards, and implementing the identified actions to bring conditions within standard, in an ongoing cycle.

II. Wilderness Stewardship Plan Content

The content of a wilderness stewardship plan is not unlike other planning documents. This part of the *Handbook* offers wilderness-specific advice on developing the sections of the plan.

- Summary and Table of Contents
- Chapter 1: Purpose and Need
- Chapter 2: Alternatives
- Chapter 3: Affected Environment
- Chapter 4: Environmental Consequences
- Chapter 5: Consultation and Coordination
- Appendixes to Plan

Appendixes to Wilderness Stewardship Plan Handbook

Appendix 1—Wilderness Stewardship Plan Checklist—a concise checklist for quality and completeness, adequacy of consultation and coordination, a check on content, and assurance of appropriate compliance.

Appendix 2.1—Where to Go for More Information: References and Examples—lists topics and sources, links, key planning references, and where to find training.

Appendix 2.2—Examples of Wilderness Stewardship Planning—lists current wilderness stewardship plans, some combined with other types of plans, and offers comments on notable parts of the plan.

Appendix 3—Emerging Ideas in Analysis: Tools for Teams—includes a description of a wilderness character mapping tool, ideas on combining multiple planning tasks in team workshops, and an arrow exercise for group discussion of wilderness character qualities.

Appendix 4—Action Topics to Consider in Developing a Wilderness Stewardship Plan—offers a wealth of information about very specific topics that are commonly found in wilderness stewardship plans. For each action topic there is a suggested list of specific wilderness issues for that topic, their relationship to wilderness character, and a relevant section in the wilderness stewardship plan where the topic could be included.

Appendix 5—Indicators, Measures, and NPS Data Sources for the Qualities of Wilderness Character—a summary from *Keeping It Wild* of wilderness character qualities, monitoring questions, indicators, and possible measures. In addition, a list of likely data sources for each of the measures is provided.

Relationship to *Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring*

The *User Guide* offers practical strategies and tools to integrate wilderness character into park planning, management, and monitoring. The *User Guide* is not prescriptive but instead offers a wide range of tools and guidance that may be used by park staff in any order. The *User Guide* is a stand-alone document not included within the *Wilderness Stewardship Plan Handbook*, but directly associated with it.

The *User Guide* and *Handbook* were developed by the NPS Wilderness Character Integration Team, established in 2010 by the NPS Office of Park Planning and Special Studies and WASO Wilderness Stewardship Division. These documents are part of *NPS Reference Manual 41: Wilderness Stewardship*. It is intended that they will evolve over time as park and program area staff work with and improve them. They also create the structure for park-to-park sharing of experiences, ideas, and best practices to reach the goal as quickly and efficiently as possible.

ACKNOWLEDGMENTS

Development of the 2014 *Wilderness Stewardship Plan Handbook* would not have been possible without the vision, funding, and support of Patrick Gregerson, NPS Office of Park Planning and Special Studies, and Garry Oye, NPS Wilderness Stewardship Division.

Principal authors of the 2014 *Handbook* were Suzy Stutzman, former Intermountain Regional Wilderness Coordinator; Sandee Dingman, Biologist, Lake Mead National Recreation Area; and Ruth Scott, Wilderness Specialist, Olympic National Park. All worked on the *Handbook* as members of the NPS Wilderness Character Integration Team.

Other members of the Wilderness Character Integration Team provided invaluable direction, review, and support for the update of the *Handbook*: Michael Bilecki, Carol Cook, Sarah Craighead, Jeremy Curtis, Tim Devine, Michael Haynie, Chris Holbeck, Chip Jenkins, Peter Landres, Adrienne Lindholm, Melissa Memory, Christina Mills, Ray O'Neil, Miki Steube, Karen Trevino, Frank Turina, and Wade Vagias.

Many National Park Service employees reviewed drafts of the *Handbook* and provided insightful comments, improving its substance and clarity: Judy Alderson, Kerri Cahill, Dale Coker, Kayci Cook Collins, Jill Cowley, Gregg Fauth, Ericka Pilcher, Larissa Reed, Michael Rees, Ken Stahlnecker, Dave Trevino, Teri Tucker, and the Intermountain Region's Wilderness Executive Committee. The final production of the document was a result of the outstanding work of Erin Drake and Ángel López.

The 2014 *Handbook* is an update of the original *Wilderness Stewardship Plan Handbook 2004* developed by a National Wilderness Steering Committee task group with the ongoing funding and support of Wes Henry, former NPS National Wilderness Program Manager. Principal authors of the 2004 edition were Judy Alderson, former Alaska Regional Wilderness Coordinator; Ruth Scott, Wilderness Specialist, Olympic National Park; Steve Ulvi, former Management Assistant, Gates of the Arctic National Park and Preserve; and Jim Walters, former Deputy National Wilderness Program Manager. Without their foundational work the current 2014 *Handbook* would not have been possible.

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INTRODUCTION



I am glad I shall never be young
without wild country to be
young in. Of what avail are forty
freedoms without a blank spot
on the map?
—Aldo Leopold

Photo: NPS/William Baccus,
Olympic Wilderness,
Olympic National Park





Photo: NPS, Olympic Wilderness,
Olympic National Park

INTRODUCTION

Planning is essential to ensure sound wilderness stewardship and the preservation of wilderness character through the process of setting goals, developing strategies, and determining a course of action. Planning is a collaboration process: it brings together a variety of expertise; is based on the best available information; engages the public; and involves consultation with tribes and other stakeholders to develop a dynamic framework for decision making and adaptive management. This process makes wilderness stewardship more effective and accountable, and the planning product provides a solid foundation for future management and preservation efforts. Planning also fulfills National Park Service (NPS) *Management Policies 2006*, chapter 6, “Wilderness Preservation and Management” (see below), directing each park superintendent in charge of wilderness resources to develop and maintain a wilderness management (stewardship) plan to guide the preservation, management, and use of those resources.

A Wilderness Stewardship Plan for Every NPS Wilderness

NPS Management Policies 2006:

6.3.4.2 Wilderness Management Planning

The superintendent of each park containing wilderness resources will develop and maintain a wilderness management plan or equivalent planning document to guide the preservation, management, and use of these resources. The wilderness management plan will identify desired future conditions, as well as establish indicators, standards, conditions, and thresholds beyond which management actions will be taken to reduce human impacts on wilderness resources.

The park’s wilderness management plan may be developed as a separate document or as an action component of another planning document. Whether prepared as a stand-alone plan or as part of another planning document, all wilderness management plans must meet the same standards for process and content as specified in this [Section 6.3.4](#). Wilderness management plans will be supported by appropriate documentation of compliance with the [National Environmental Policy Act](#) and the [National Historic Preservation Act](#). The plan will be developed with public involvement and will contain specific, measurable management objectives that address the preservation and management of natural and cultural resources within wilderness as appropriate to achieve the purposes of the [Wilderness Act](#) and other legislative requirements.

The purpose of the *Wilderness Stewardship Plan Handbook 2014 (Handbook)* is to provide direction for creating wilderness stewardship plans, driven by the concept of preserving wilderness character. The *Handbook* is organized into two main sections:

- Part I: Wilderness Stewardship Planning Process – HOW to go about developing a plan
- Part II: Wilderness Stewardship Plan Content – WHAT is contained in a plan

The intended audience is NPS staff involved in wilderness stewardship planning, including personnel in parks, regions, Denver Service Center, as well as contractors, cooperators, and partners. Those involved may or may not have a professional background in planning and compliance processes. The *Handbook* focuses primarily on how to incorporate wilderness management policies and wilderness character into a wilderness stewardship plan (WSP), but also provides a general overview of planning and compliance. Details on the authority of the *Handbook* and its relationship to other NPS policy and guidance are provided in table 1.

Table 1. Relationship of *Handbook 2014* to NPS policy and guidance.

NPS Policy and Guidance	NPS Wilderness Stewardship Plan Handbook 2014
NPS <i>Management Policies 2006</i> , chapter 6, “Wilderness Preservation and Management,” section 6.3.4.2, “Wilderness Management Planning”	<i>Handbook</i> provides supplemental guidance to <i>Management Policies 2006</i> , chapter 6, about wilderness management (stewardship) planning, and also provides guidance for incorporating wilderness management policies into the plan.
Director’s Order 41: <i>Wilderness Stewardship</i>	<i>Handbook</i> provides supplemental guidance to Director’s Order 41 about wilderness management (stewardship) planning, and also provides guidance for incorporating other parts of the director’s order into the wilderness stewardship plan.
<i>Reference Manual 41: Wilderness Stewardship</i>	<i>Handbook</i> replaces previous RM-41, section IV.C.1. “Wilderness Management Plan Requirements.”
<i>Wilderness Stewardship Plan Handbook 2004</i> , prepared by the National Wilderness Steering Committee	2014 <i>Handbook</i> updates and replaces the 2004 <i>Handbook</i> . The update was triggered by the NPS commitment to adopt the wilderness character framework in <i>Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System</i> (Landres and others 2008) and to integrate wilderness character into planning, monitoring, and management.

The *Handbook* uses the term “wilderness” for designated and all other categories of wilderness (eligible, proposed, recommended, and potential) in accordance with *NPS Management Policies 2006* (see below).

“Wilderness” Includes Designated and All Other Categories

NPS Management Policies 2006:

6.3.1 General Policy

For the purposes of applying these policies, the term “wilderness” will include the categories of eligible, study, proposed, recommended, and designated wilderness. Potential wilderness may be a subset of any of these five categories. The policies apply regardless of category except as otherwise provided herein.

Preserving Wilderness Character

Wilderness stewardship planning is ultimately focused on the preservation of wilderness character, the primary mandate of the 1964 Wilderness Act. Until recently however, wilderness character was not formally defined nor integrated into the park planning process. Two key documents have been developed that help clarify the meaning of wilderness character and provide guidance for wilderness character integration into agency wilderness stewardship: *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System* (Landres and others, 2008) (*Keeping It Wild*) and *Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring (User Guide)*.

The interagency publication *Keeping It Wild* defined wilderness character as “the combination of biophysical, experiential, and symbolic ideals that distinguishes wilderness from other lands.” Furthermore, this publication identified distinct and necessary “qualities” of wilderness character. These qualities are tangible, link conditions in the wilderness and its management directly to the statutory language of the Wilderness Act, and apply to every wilderness regardless of size, location, agency administration, or other attribute. Building on *Keeping It Wild* and several years of agency experience applying these ideas, the *User Guide* is based on the use of five qualities of wilderness character, all equally important in understanding and describing wilderness character and all based on the Wilderness Act’s section 2(c), “Definition of Wilderness”:

- *Natural*—Wilderness ecological systems are substantially free from the effects of modern civilization. This quality is preserved or improved, for example, by controlling or removing nonindigenous species or restoring ecological processes. This quality is degraded by the loss of indigenous species, occurrence of nonindigenous species, alteration of ecological processes such as water flow or fire regimes, effects of climate change, and many others.
- *Untrammelled*—Wilderness is essentially unhindered and free from the intentional actions of modern human control or manipulation. This quality is influenced by any activity or action that intentionally controls or manipulates the components or processes of ecological systems inside wilderness. It is supported or preserved when such management actions are not taken. It is degraded when such management actions are taken, even when these actions are intended to protect resources, such as spraying herbicides to eradicate or control nonindigenous species, or reducing fuels accumulated from decades of fire exclusion.
- *Solitude or a Primitive and Unconfined Type of Recreation*—Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation. This quality is primarily about the opportunity for people to experience wilderness, and is influenced by settings that affect these opportunities. This quality is preserved or improved by management actions that reduce visitor encounters, signs of modern civilization inside wilderness, agency-provided recreation facilities, and management restrictions on visitor behavior. In contrast, this quality is degraded by management actions that increase these.

Photo: NPS/Peter Landres,
Gates of the Arctic
Wilderness, Gates of the
Arctic National
Park & Preserve

- *Undeveloped*—Wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern human occupation. This quality is influenced by what are commonly called the “Section 4(c) prohibited uses” or “nonconforming” uses, which are the presence of modern structures, installations, habitations, and the use of motor vehicles, motorized equipment, or mechanical transport. This quality is preserved by the absence of structures and installations, and refraining from these prohibited uses. It is degraded by the presence of structures and by prohibited uses, whether by the agency for administrative purposes, by others authorized by the agency, or unauthorized uses. (Note that structures and installations related to visitor use and recreation are included in the Solitude Quality rather than the Undeveloped Quality.)
- *Other Features of Value*—Wilderness preserves other tangible features that are of scientific, educational, scenic, or historical value. This quality is based on the last clause of section 2(c) of the Wilderness Act which states that a wilderness “may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.” This quality captures important elements of the wilderness that may not be covered in the other four qualities, such as cultural or paleontological resources. This quality is preserved or improved when these resources are preserved and their loss or impacts to such features degrade this quality of wilderness character.



Together, these five qualities comprise the tangible or physical setting of the wilderness and its wilderness character. The first four qualities (natural, untrammeled, solitude or primitive and unconfined recreation, and undeveloped) are only summarized above and described in detail in the *Keeping It Wild* publication. The other features of value quality is different from the other four qualities in two ways. First, from the wording in the Wilderness Act this quality may or may not be present in a wilderness, whereas the other four qualities apply to every single wilderness. When present, this quality is of equal stature and importance to understanding wilderness character as all the other qualities. Second, from the wording in the Wilderness Act this quality focuses on “features” and features typically occur in specific locations, whereas the other four qualities apply throughout an entire wilderness. Such features could include cultural resources, paleontological resources, or any features not covered under the other four qualities that have scientific, educational, scenic, or historical value. In some cases it may be difficult to assign a feature to one quality or another. For example, National Natural Landmark sites may be assigned to either the natural quality or the other features of value quality and park staffs will need to determine which is most appropriate for the park. Features mentioned in park or wilderness enabling legislation, such as the historic sites in Death Valley Wilderness and the volcanoes in Katmai Wilderness, would be likely candidates for the other features of value quality. While many different types of features could be included, the intent is to include those that significantly contribute to the setting of the wilderness and understanding its wilderness character.

These five qualities interact in direct and subtle ways that may complement or conflict with the others. For example, allowing a natural fire ignition to burn preserves both the natural and untrammeled qualities of a wilderness. In contrast, suppressing a natural ignition degrades the untrammeled quality, the use of helicopters or other motorized equipment degrades the undeveloped and solitude qualities, and the long-term effects of suppression may degrade the natural quality. A decision to protect or improve one quality of wilderness character may directly degrade another quality. For example, designated campsites may be necessary to protect solitude or prevent vegetation trampling, but degrades other elements of the solitude quality by requiring visitors to camp only in designated sites. In all cases, using the framework of wilderness character does not drive a particular decision or management action—it is a tool to help staff be comprehensive, systematic, and consistent in evaluating potential benefits and impacts to make an informed and transparent decision.

Like a violin composed of separate pieces that interact to form something greater than the sum of its parts (music and the feeling this music evokes), these five qualities together form a complex set of relationships between the land, its stewardship, its users, and the values and benefits that society derives from wilderness. These five qualities form both the physical and stewardship setting of a wilderness. This setting in turn provides tangible scientific, cultural, educational, and economic values to society (Cordell, Bergstrom, and Bowker 2005). For example, this setting allows the scientific value of wilderness as a reference baseline to assess and understand the effects of climate change. The setting of cultural resources in a wilderness provides a connection to the place by the artifacts and relics that a visitor can “discover,” provides insight into the history of the area, and enhances connection to past generations and ancestors. Spiritual (Ashley 2007; Moore 2007), ethical (Cafaro 2001), and other intangible values and benefits to society also derive from this wilderness setting.

Indicators Associated with Each Quality of Wilderness Character

Each quality of wilderness character has associated indicators that describe different major elements or components of that quality. Indicators for the qualities that apply nationwide and throughout a wilderness are derived from *Keeping It Wild*; these indicators are intended to apply to every wilderness (table 1). In contrast, indicators for the other features of value quality must be identified locally because they are unique to each park, although an indicator for cultural resources is provided in this table because these occur in every NPS wilderness.

Table 2. The qualities of wilderness character and their associated indicators.

Quality	Indicator
Natural	Plant and animal species and communities
	Physical resources
	Biophysical properties
Untrammeled	Actions authorized by the federal land manager that manipulate the biophysical environment
	Actions not authorized by the federal land manager that manipulate the biophysical environment
Solitude or primitive and unconfined recreation	Remoteness from sights and sounds of people inside the wilderness
	Remoteness from occupied and modified areas outside the wilderness
	Facilities that decrease self-reliant recreation
	Management restrictions on visitor behavior
Undeveloped	Nonrecreational structures, installations, and developments
	Inholdings
	Use of motor vehicles, motorized equipment, or mechanical transport
Other features of value	Deterioration or loss of cultural or paleontological resources integral to wilderness character
	Other locally identified indicators



Photo: NPS/Lori Wilkinson, Recommended wilderness in Yellowstone National Park

Building Blocks for Integrating Wilderness Character

Building blocks provide the foundation for effectively integrating wilderness character into planning, management, and monitoring. They break down the components of outstanding wilderness stewardship into achievable and meaningful steps. Building blocks establish a shared understanding of what is most important about each wilderness area and articulate those values for inclusion in a wilderness character framework. Each park containing wilderness is probably at a different stage in developing wilderness-related plans, monitoring programs, and operational guidelines. This approach provides maximum flexibility for staff to begin building this foundation in the order that works best for them, resulting in greater efficiency and effectiveness in wilderness stewardship.

The first building block, “Wilderness Basics,” groups together three elements that serve both wilderness stewardship and development of a park foundation document: (1) background wilderness information, (2) wilderness character narrative, and (3) issue identification for future wilderness stewardship planning. This building block provides a good starting point by making sure basic wilderness data and maps are current, accurate, and available to staff and the public. This information can inform development of a wilderness character narrative that identifies what is special and significant about a particular wilderness. The second building block, “Wilderness Character Assessment,” involves selecting relevant measures, determining baseline conditions, entering baseline information into a wilderness character database, and regularly monitoring each measure at specified intervals to identify trends in wilderness character. The last building block, “Integrate Wilderness Character into Management and Operations,” establishes park guidance for using wilderness character in routine decisions and actions. The building blocks would probably not propose any management actions that would be subject to National Environmental Policy Act (NEPA) or National Historical Preservation Act (NHPA) compliance; however, management actions proposed within the wilderness stewardship plan probably would.

Building Blocks for Wilderness Stewardship

- Are key elements of the wilderness stewardship plan.
- Give parks the flexibility to start building the foundation where it makes the most sense to them.

Table 3. Building blocks for integrating wilderness character into wilderness stewardship.

Achievable Steps Toward Wilderness Stewardship
<p>Wilderness Basics</p> <ul style="list-style-type: none"> • Gather background wilderness information. <ul style="list-style-type: none"> <input type="checkbox"/> Park-specific wilderness legislation and legislative history, or if not designated, the history of wilderness study and current status. <input type="checkbox"/> An accurate geographic information system (GIS) map of the wilderness. <input type="checkbox"/> Park purpose, significance, and fundamental resources and values should embrace the wilderness character of this wilderness in the park foundation document. <input type="checkbox"/> The relationship of wilderness planning to other park plans, or general management plan. • Develop a wilderness character narrative. <ul style="list-style-type: none"> <input type="checkbox"/> A qualitative description of what is unique and special about the wilderness using the five qualities of wilderness character. • Identify issues for future wilderness stewardship planning. <ul style="list-style-type: none"> <input type="checkbox"/> Identify preliminary wilderness issues to inform the scope of additional data and planning needs. <p>If a park is developing a park foundation document, the wilderness elements in this building block should be developed concurrently, resulting in efficiency and better products.</p>
<p>Wilderness Character Assessment</p> <ul style="list-style-type: none"> • Select measures. <ul style="list-style-type: none"> <input type="checkbox"/> Select a suite of measures, at least one for each of the 13 indicators, to describe the current condition of wilderness character. These measures are largely based on information that has already been collected. Measures may be revisited during a planning effort. • Collect baseline data. <ul style="list-style-type: none"> <input type="checkbox"/> Collect baseline data and enter into a national database, which will allow park managers to track trends in wilderness character over time. • Monitor on an ongoing basis. <ul style="list-style-type: none"> <input type="checkbox"/> Collect data at an interval of at least every five years and report at park, region, and national levels.
<p>Integrate Wilderness Character into Management and Operations</p> <ul style="list-style-type: none"> • Use minimum requirements analysis (MRA). <ul style="list-style-type: none"> <input type="checkbox"/> Establish how the park incorporates the MRA process into decision making. • Consider wilderness character in operations. <ul style="list-style-type: none"> <input type="checkbox"/> Focus on developing the internal guidance and processes to direct routine park staff decisions and actions based on wilderness character. <input type="checkbox"/> Additional management guidance could include a framework based on wilderness character for evaluating scientific activities, evaluating commercial services (e.g. extent necessary determination) and special park use permit requests, developing standard operating procedures for activities in wilderness, establishing an interdisciplinary wilderness committee, and other actions specific to the park.

For more information about developing the content of these building blocks, see chapter 2 of the *User Guide*. For more information about developing wilderness basics in tandem with a park foundation document, see chapter 3 of the *User Guide*.

Wilderness Stewardship Plan

Completion of the building blocks can provide interim guidance for managing wilderness areas and tracking trends in wilderness conditions, but this foundation is not a substitute for a complete wilderness stewardship plan. A wilderness stewardship plan is a decision-making document completed with an appropriate level of NEPA and NHPA compliance, and includes participation from the public, other agencies, and associated tribes. A wilderness stewardship plan sets long term goals and objectives, identifies issues and opportunities, and provides a decision-making framework and appropriate actions to preserve and, if necessary, improve wilderness character now and into the future. A wilderness stewardship plan identifies desired future conditions, and establishes measures and standards to guide wilderness character preservation.

For a wilderness stewardship plan to be relevant and useful upon release the planning process should incorporate an adaptive management approach, reinforcing the connection between the monitoring of wilderness character and the strategy for adapting management actions to preserve wilderness character in the face of rapid environmental and social change. The process begins by setting goals, selecting indicators and measures, setting standards, and identifying a range of management actions. Conditions are monitored, and if conditions or trends are unacceptable, appropriate management actions are implemented. Conditions are then monitored in the future to determine if the actions were effective in restoring acceptable conditions. This cycle of implementing management actions and monitoring continues in order to achieve desired outcomes. Monitoring may show that in some situations the measures may need to be adjusted. The process for developing the plan through an adaptive management approach, also known as the wilderness stewardship planning framework, is illustrated in figure 1.

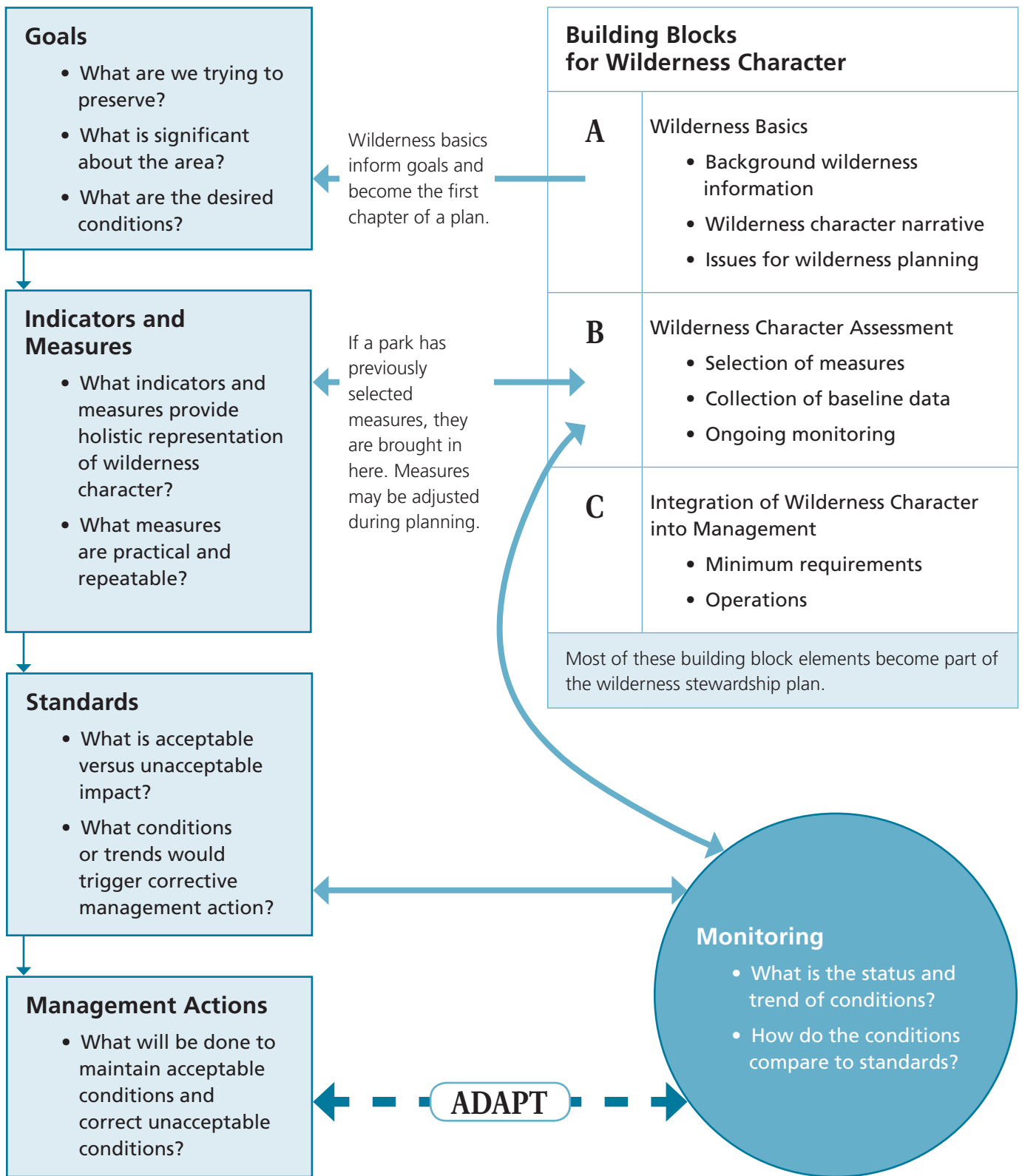


Photo: NPS/Todd Esque,
Joshua Tree Wilderness,
Joshua Tree National Park

A wilderness stewardship plan must contain the following major components:

- *Purpose and need*—Basic information about the wilderness, including goals, objectives, issues, and opportunities.
- *Alternatives, including a proposed action*—A range of alternatives that address different ways to achieve goals and objectives, address identified issues and opportunities, and that ultimately preserve wilderness character. This range of alternatives must include a “no action” alternative. The preferred alternative must identify desired conditions along with appropriate measures, standards, and strategies to successfully attain these goals. If warranted, geographic zones within the wilderness may be identified for the purpose of establishing zone-specific desired conditions, measures, standards, and actions that preserve wilderness character to the highest degree across a varied and complex wilderness.
- *Appropriate environmental compliance*—An environmental assessment (EA) or environmental impact statement (EIS) will include a description of the “affected environment” for each of the impact topics that are identified and retained. The plan will also contain a section on environmental consequences that meets the requirements of Director’s Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* and *DO-12 Handbook* and other current guidance.
- *Consultation and coordination*—A valid planning process must meaningfully engage the public and include consultation with other relevant agencies and traditionally associated American Indian tribes. Public involvement should be documented in the plan.
- *Administrative guidance*—Guidance for applying the minimum requirements concept should always be included. Guidance for evaluation of scientific activities, commercial services (e.g. extent necessary determination), and special park uses should also be included if appropriate, as well as for facilities management and other park operations.

FIGURE 1. WILDERNESS STEWARDSHIP PLANNING FRAMEWORK.



Adaptive Management

- Measures are monitored and compared to standards.
- If conditions or trends are unacceptable, appropriate management actions identified in the plan are implemented.
- This cycle of monitoring and adjustment continues in order to achieve desired outcomes.
- Measures may be adjusted.

Table 4 identifies links between the building blocks and a wilderness stewardship plan. Part II of the *Handbook* provides more detail on wilderness stewardship plan contents, and appendix 1 contains a complete checklist for a wilderness stewardship plan while appendix 4 provides ideas for what might be covered in the plan related to a breadth of action topics. Appendix 2.1 contains additional references for more information about *Handbook* topics, and appendix 2.2 includes a list of wilderness stewardship plans that provide helpful examples of plan components.

Table 4. Relationship between building blocks and a wilderness stewardship plan.

Building Blocks for Wilderness Character	Wilderness Stewardship Plan
Wilderness Basics—Gather background wilderness information	<ul style="list-style-type: none"> Basic information can be incorporated into the first chapter of the plan.
Wilderness Basics—Develop a wilderness character narrative	<ul style="list-style-type: none"> Incorporate wilderness character narrative into the first chapter of the plan. Incorporate wilderness character narrative into the “Affected Environment” section of the plan.
Wilderness Basics—Identify issues for future wilderness stewardship planning efforts	<ul style="list-style-type: none"> Conduct initial internal scoping for the plan. Focus the plan on the most important wilderness stewardship needs. Identify data to be gathered before planning begins. Gather information needed for securing funds and staff to undertake the plan.
Wilderness Character Assessment	<ul style="list-style-type: none"> Use measures selected for the baseline in establishing a wilderness stewardship planning framework. Adjust measures if necessary to fit goals and actions in the plan. Identify standards for the measures and management actions that will be taken if standards are exceeded.
Integrate Wilderness Character into Management and Operations	<ul style="list-style-type: none"> Adopt minimum requirements analysis (MRA) procedures and other management/operational guidance into the plan.

How to Use the Handbook

The *Handbook* provides a wide range of tools and guidance for incorporating wilderness character into wilderness stewardship planning. It is a companion document to *Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring*. The *Handbook* is intended to be a dynamic document that is refined over time as experience is gained in incorporating wilderness character into planning. Many of the documents, worksheets, and examples referenced in this *Handbook* can be found on the “Wilderness Character” tab of the NPS Wilderness Stewardship Program SharePoint site at <http://share.inside.nps.gov/sites/WASO/WSD/WC>.

PART I

Wilderness Stewardship Planning Process

There is just one hope of repulsing the tyrannical ambition of civilization to conquer every inch on the whole earth. That hope is the organization of spirited people who will fight for the freedom and preservation of wilderness.

—Bob Marshall

Photo: NPS/Liz Gordon,
Haleakala Wilderness,
Haleakala National Park





Photo: NPS/Liz Gordon,
Haleakala Wilderness, Haleakala National Park

PART I—WILDERNESS STEWARDSHIP PLANNING PROCESS

Part I of the *Handbook* provides guidance for developing a wilderness stewardship plan that integrates the concept of wilderness character into the planning process. Wilderness stewardship planning is not a unique planning process, and guidance used for other planning efforts can also be helpful and applicable. Table 5 depicts the flow of the planning process for completing a wilderness stewardship plan.

Table 5. Typical wilderness stewardship planning process.

Planning Process	Relevant Section in This Handbook
<p>Internal Scoping NPS staff defines the project</p> <ul style="list-style-type: none"> • Compile basic wilderness information and develop a wilderness character narrative • Identify anticipated issues and opportunities • Identify public / agencies / tribes to be included in the process • Combine with other plans? • Complete an environmental screening form to determine if environmental assessment or environmental impact statement is appropriate; determine NHPA requirements • Identify data and expertise needs • Identify preliminary purpose and need for planning, goals, and objectives (may be adjusted after public involvement) • Establish who, what, when, where, why, how (project agreement) 	<p>Building Blocks</p> <p>Internal Scoping</p> <p>Internal Scoping; Civic Engagement</p> <p>Combining with Other Plans</p> <p>Internal Scoping</p> <p>Internal Scoping; Data Gathering</p> <p>Internal Scoping</p> <p>Internal Scoping</p>
<p>External Scoping Identify issues and opportunities with public / agencies / tribes; set goals and objectives</p> <ul style="list-style-type: none"> • Appropriate meetings, newsletters, or other communication • <i>Federal Register</i> notice if environmental impact statement 	<p>Civic Engagement and Consultation</p>
<p>Data Gathering and Analysis</p> <ul style="list-style-type: none"> • Gather relevant data (e.g., visitor use statistics, resource conditions, number and status of facilities, administrative actions in wilderness) • Analyze data to improve understanding of existing wilderness character conditions and issues to be addressed in planning 	<p>Data Gathering and Analysis</p>
<p>Alternatives</p> <ul style="list-style-type: none"> • Develop measures, standards, and management actions framework • Develop zone types, descriptions, and allocations if appropriate • Identify desired conditions in alternatives and zones • Develop a range of alternatives that meets park purpose, goals, and objectives; include a “no action” alternative • Share conceptual alternatives with the public, if appropriate • Identify impacts (environmental assessment and environmental impact statement) • Identify a preferred alternative that best meets goals and objectives 	<p>Management Framework</p> <p>Alternatives</p> <p>Alternatives</p> <p>Alternatives</p> <p>Civic Engagement and Consultation</p> <p>Environmental Analysis</p> <p>Environmental Analysis</p>
<p>Draft Plan</p> <ul style="list-style-type: none"> • Write draft plan • Share draft with public / agencies / tribes • Analyze and summarize comments • <i>Federal Register</i> notice if environmental impact statement 	<p>Part II</p>
<p>Finalize Plan</p> <ul style="list-style-type: none"> • If environmental assessment, prepare a Finding of No Significant Impact • If environmental impact statement, prepare a final plan, conduct public review, and prepare a Record of Decision (ROD); <i>Federal Register</i> notices for final plan and Record of Decision 	<p>Administration and Implementation</p>
<p>Implementation</p> <ul style="list-style-type: none"> • Monitor, compare conditions with standards, implement actions, continue monitor-implementation cycle, adapt 	<p>Administration and Implementation</p>

Internal Scoping

The success of any planning process depends on the strong commitment and combined effort of an interdisciplinary team throughout the entire project. Producing a wilderness stewardship plan is more than a writing exercise; it is a journey that involves diverse expertise, civic engagement, consultation, and opportunities for honest and informed discussion and that results in decisions and guidance for future wilderness stewardship. The written plan is the product of this journey. Internal scoping should begin by assembling a strong interdisciplinary team (IDT) composed of park staff and other relevant partners, including region staff, Denver Service Center staff, contractors, cooperating agencies, or other land managers. A park superintendent's commitment to empower the team throughout the planning process is essential. Success depends on a strong understanding of wilderness character, good communication among the IDT members, and a willingness to listen to others and share diverse perspectives.

If the wilderness basics building block (see "Introduction") has been prepared for the park, internal scoping may have already begun as part of that process. Otherwise, the IDT should gather and compile basic wilderness information to better understand the extent, status, and context of wilderness resources, and develop a wilderness character narrative that articulates the four qualities of wilderness character, and the other features of value quality, if applicable. Internal scoping results in an initial assessment of significant wilderness issues and opportunities that the wilderness stewardship plan should address. A list of possible issues and action topics can be found in appendix 4. The team should determine whether or not to combine a wilderness stewardship plan with other types of plans, such as a backcountry management plan, commercial services plan, or general management plan (GMP). A section on combining wilderness stewardship planning with backcountry management plans and other types of plans is included below.

During internal scoping, the IDT should identify and contact potentially interested stakeholders, and identify possible participatory mechanisms for them. More information about public involvement and consultation can be found in part I of the *Handbook* under the "Civic Engagement and Consultation" section. The IDT should also discuss and complete an environmental screening form to make a preliminary decision on the level of compliance and whether an environmental assessment or an environmental impact statement is appropriate. Many wilderness stewardship plans can be developed using an EA process; however, plans such as those amending a general management plan or potentially controversial plans have been developed using an EIS process. A project site should be established in the NPS Planning, Environment, and Public Comment website (PEPC) to identify the IDT, complete the environmental screening form, and document the planning process.

Once these preliminary steps have been completed, staff can make an assessment of the data requirements necessary to begin the decision making process. Data may already be available, but if there are significant gaps the team must make a judgment about whether or not collecting additional data is essential to completing a successful and effective plan. Wilderness stewardship planning must be based on sound science and data; however, staff can never have enough data to completely answer every question for decision making. Avoid analysis paralysis.

When identifying data needs, also identify any special expertise that may be needed in addition to that found within the interdisciplinary team (e.g., facilitation, impact analysis, selecting measures, wilderness character, visitor use, commercial services, soundscapes, night skies, external stresses and threats). Sources of outside expertise include personnel in regional offices, the Denver Service Center, the Natural Resource Stewardship and Science Directorate, universities, and other agencies, as well as former park staff. Also consider the use of peer reviewers—experienced staff and managers from parks with similar wilderness resources, to contribute in the planning process. Contractors are another source of expertise and can also assist with writing the plan and environmental document.

To strengthen commitment from all parties involved, a project agreement or project charter should be developed. Whether required or not, it is a good idea to have an agreement in writing about who will be involved, what the product will be, when it will be completed, where the work will take place, why the product is needed, and how it will be accomplished. Typically, a project agreement includes:

- Cover page with project title, PEPC and Project Management Information System (PMIS) numbers, and signature approval lines
- Purpose of agreement
- Background
- Project scope
- Data needs and availability
- Strategies for public involvement
- Deliverables
- Roles and responsibilities
- Schedule
- Budget

More information on project agreements can be found in the National Park Service *General Management Planning Dynamic Sourcebook*. Regional offices and the Denver Service Center may have specific requirements, so check with appropriate entities.



Combining Wilderness Stewardship and Backcountry Management Plans

Wilderness and backcountry may appear to be similarly wild and natural landscapes; however, there are important distinctions in how these lands are managed. The term “backcountry” is a generic descriptor for primitive, undeveloped portions of a park unit, as distinct from highly developed frontcountry areas. Lands designated by Congress as “wilderness” represent the highest standard for wild lands management. In addition to other laws and policies affecting park resources, wilderness has supplemental and permanent protection under the Wilderness Act beyond that which is normally afforded to park backcountry resources. Wilderness and backcountry may require different administrative practices because the Wilderness Act imposes additional conditions and constraints.

Photo: NPS/Margaret Tyler, Cumberland Island Wilderness, Cumberland Island National Seashore

Distinctions between Wilderness and Backcountry

BACKCOUNTRY. The National Park Service uses the term backcountry to refer to primitive, more natural and relatively undeveloped portions of parks. Lands that are NOT highly developed with roads, parking lots, overlooks, vehicle campgrounds, and visitor centers are considered the backcountry. The backcountry is managed under the NPS Organic Act to provide for the use and enjoyment of people while preserving resources unimpaired, and managed to achieve NPS policies and the intent of a park's general management plan. While there are similarities between backcountry and wilderness, backcountry has more management discretion than the unparalleled level of legal protection of wilderness. For example, on backcountry lands without wilderness designation, decisions could be made in the future to construct roads or build lodges or other facilities within these areas.

WILDERNESS. Key excerpts from The Wilderness Act:

Wilderness System Established Statement of Policy

Sec. 2(a) " ... For this purpose there is hereby established a National Wilderness Preservation System...for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, [and] the preservation of their wilderness character..."

Definition of Wilderness

Sec. 2(c) "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which

- (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable;
- (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation;
- (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and
- (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value."

Prohibition of Certain Uses

Sec. 4(c) "Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area."

Additional information about the distinctions between wilderness and backcountry may be found in *Guidance Paper #4, Embracing the Distinction between Wilderness and Backcountry in the National Park System*, issued in 2005 by the National Wilderness Steering Committee.

When initiating development of a wilderness stewardship plan, a decision needs to be made during initial project scoping about whether or not to combine the plan with a backcountry management plan. If wilderness and backcountry stewardship planning are combined it is extremely important that wilderness standards are in no way diluted in the wilderness area. Backcountry could be managed to the high standard of wilderness, but not the other way around. Wilderness areas within the National Park Service have the protection of *both* the Organic Act and the Wilderness Act. The Wilderness Act charges agencies managing wilderness—in this case the National Park Service—to preserve wilderness character. Further, section 4(c) of the Wilderness Act explicitly prohibits certain uses and significantly constrains many administrative activities that would otherwise be considered appropriate for park backcountry areas. It is important to clearly communicate the differences between wilderness and backcountry with the public during the planning process and in the written plan. Zoning is a planning tool that can be used to make distinctions in desired conditions and management actions between wilderness and backcountry areas. More information about zoning can be found in Part I of this *Handbook* under the “Alternatives” section.

Possible reasons to combine wilderness and backcountry stewardship planning include:

- *Economies of scale*—Adding backcountry to a wilderness stewardship plan may not cost significantly more in time or dollars and will probably be significantly less expensive than two separate plans. This is particularly true if undeveloped lands in the park are predominantly wilderness and nonwilderness backcountry areas are relatively small and scattered, or if the backcountry and wilderness lands are geographically interwoven. In addition, *NPS Management Policies 2006*, section 8.2.2.4, requires that “backcountry use will be managed in accordance with a backcountry management plan (or other plan addressing backcountry uses),” therefore combining the two plans will fulfill both mandates.
- *Address a range of visitor activities*—A combined plan would allow planning for a wide range of visitor activities. Activities that may not be appropriate in wilderness could be redirected to nonwilderness areas. This can serve as a valuable tool in resolving conflicts between adjacent uses and promoting cohesive and compatible visitor opportunities.
- *Respond to a broad spectrum of public concerns*—With the opportunity to plan for a wider spectrum of visitor activities, a greater number of public concerns could be addressed. For example, if only planning for wilderness, people interested in bicycle opportunities (prohibited in wilderness) would not see their concerns addressed. Also, members of the public may request to address both wilderness and backcountry issues during scoping.
- *Holistic management*—Planning for both wilderness and backcountry can result in clear management direction for all undeveloped land. Zoning can be developed to articulate distinctions and guide management actions. Complete planning for undeveloped lands can also complement frontcountry planning and may be a valuable planning piece that updates and fulfills general management planning requirements for a park. Wilderness boundaries may be legislatively-designated specified distances from developed areas (i.e., roads, parking lots), making the distinction between backcountry and wilderness unclear and separate management planning difficult (for example, trails may begin in backcountry and cross the wilderness boundary some distance in with little change in management objectives).



Photo: NPS/Yasunori Matsui,
Eligible wilderness in
Yukon-Charley Rivers
National Preserve

Possible reasons not to combine wilderness and backcountry stewardship planning:

- *Already covered*—Backcountry land may be adequately addressed in other planning, such as a general management plan with current and relevant zoning. (However, if quantitative standards for backcountry conditions were not established in the other plans, combining wilderness and backcountry planning could provide this opportunity if appropriate).
- *Scope and level of controversy*—The scope of backcountry planning may make a combined plan too broad in scope, or make the level of controversy too high to address issues in a timely and efficient manner. A combined plan may also trigger a higher level of compliance (scoped through an environmental screening form) that the park is not ready to undertake.
- *Mandate*—Specific legislation or a court decision may direct wilderness planning to occur independent of other planning efforts.
- *Limited resources*—Available funding may not be sufficient to cover the cost of simultaneously developing both wilderness and backcountry management plans.
- *Public focus*—Public scoping may influence a decision to focus only on wilderness.

Combining Wilderness Stewardship with Other Plans

Other types of plans may also be combined with wilderness stewardship plans. These plans include but are not limited to general management plans and amendments, commercial services plans, climbing management plans, wild and scenic river plans, and soundscape preservation and noise management plans. Combining with these plans requires many of the same considerations for backcountry plans: economies of scale, interrelationship of resources, public interest and clarity, holistic management, and managing controversy.

Incorporating a wilderness stewardship plan into a general management plan can be done, but requires some additional considerations:

- The level of detail in a general management plan and a wilderness stewardship plan is usually very different. A general management plan provides broad zoning and overarching direction, while a wilderness stewardship plan has some very specific requirements at a level of detail not usually included and analyzed in a general management plan and environmental document. As long as expectations about the level of detail are identified and agreed upon at the beginning of the project, the combination can work.
- Management zones developed to serve both a general management plan and a wilderness stewardship plan should be compatible.
- A wilderness stewardship plan could be undertaken as a general management plan amendment if guidance for wilderness and backcountry is one of the primary needs for amending a general management plan.

Examples of plans with wilderness and backcountry management combined, and with wilderness management combined with other types of plans, can be found in appendix 2.2.

Civic Engagement and Consultation

Public Involvement

Public involvement is essential to the planning process, particularly during external scoping and review of the public review document. During external scoping the National Park Service is seeking to learn the public's ideas and concerns, and also to identify public goals and objectives for the future, which may differ from those identified by internal staff. During the review of the plan, which includes a proposed action, encourage and solicit public comments to inform the final plan or EA.

All public input is important, whether from small local communities and sparse populations near wilderness areas, people who may not be familiar with or frequently visit wilderness, or national constituents who have a stake in the National Wilderness Preservation System. International audiences may be interested in those wilderness lands that also have worldwide designations such as a World Heritage Site or International Biosphere Reserve. It is essential to fully identify the range of interested stakeholders and plan appropriate methods of engagement, which may include newsletters, meetings, forums, field trips, websites, and creative incorporation of social media.

Consider the use of social media to invite participation from a broader audience than is typically reached with park press releases and legal notices in the newspaper of record. Wilderness.net offers a "blogging" option for each designated wilderness area that can be used to post information about how to get involved in the planning effort. These technology-based tools are especially useful in reaching interested publics from outside the local area, such as international visitors. Post messages to direct people to the PEPC site to read planning newsletters, conceptual draft alternatives, or public review document, in addition to providing information via the normal channels. Similarly, it can be informative to monitor locally relevant internet chatrooms to see how the park's planning outreach messages are being received and to determine the level of success in communicating the proper information. In the case of obvious misunderstanding, consider posting clarifying information in PEPC and other venues.

Civic engagement may also be improved through interactive mapping technology. There are several interactive mapping platforms available and the technology is evolving rapidly. However, most software programs allow users to interact with an online map using simple tools to zoom in on areas of interest, and to access ancillary information via pop-up text boxes and tables. These programs provide for much more geospatially relevant content than can be provided in static maps (examples can be found in PEPC for Black Canyon of the Gunnison [PEPC# 16726] and Death Valley [PEPC# 23311] national parks). Early in the planning process, consult local and/or regional GIS staff to investigate the possible value of publishing interactive maps via links on the PEPC site. Assess whether the organizational capacity exists to produce and host such maps in-house, or whether this approach will require contracted assistance. More information on civic engagement can be found in Director's Order 75A: *Civic Engagement and Public Involvement*.

Agency Consultation

Consulting with neighboring and relevant local, state, and federal agencies is an important part of any planning process. As part of the environmental compliance process, consultation may be required to comply with section 7 of the Endangered Species Act, or section 106 of the National Historic Preservation Act. Relevant agencies should be identified during internal scoping, consulted during external scoping, and involved throughout the process to the extent agreed upon in scoping.

If the NPS wilderness area adjoins a wilderness area managed by another agency, or a single wilderness is split between managing agencies, building a strong relationship with the other agency is critical for successful wilderness stewardship planning. In these cases, it may be appropriate to consider a more substantial and formalized working relationship. Options include:

- Establish a cooperating agency agreement with an NPS lead and the neighboring agency formally involved in an agreed-upon role (see *DO-12 Handbook*).
- Prepare a joint wilderness stewardship plan for a wilderness area managed by multiple agencies; a cooperating agency agreement with one agency as the lead, or joint leads, will probably be necessary.

The joint wilderness management plan / environmental impact statement for eight wilderness units in Clark County, Nevada, within and adjacent to Lake Mead National Recreation Area, serves as an example. Three of the areas have portions located on public lands administered by the Bureau of Land Management. The National Park Service took the lead in the collaborative planning process as the majority of the wilderness areas are located within Lake Mead National Recreation Area.

Tribal Consultation

Many areas identified as wilderness have been, and continue to be, important to the traditional beliefs and lifeways of American Indian tribes, serving as plant gathering areas, hunting areas, and places associated with ceremony and spiritual sustenance. The definition of wilderness from the Wilderness Act as a place “where the earth and its community of life are untrammelled by man” may be viewed by some as denying the human history of American Indians. In reality, wilderness has been shaped by thousands of years of active resource management by indigenous people. Wilderness areas are often ethnographic landscapes with long and rich human histories. Denying traditional meanings and uses of wilderness may reinforce dispossession of tribal lands; this can be exacerbated by a lack of tribal involvement in wilderness planning and management decisions.

Photo: NPS, Organ Pipe Cactus Wilderness, Organ Pipe Cactus National Monument



The role of current wilderness areas in tribal traditions is, however, becoming more known and appreciated. The 8th World Wilderness Congress in 2005 heavily emphasized the role of native peoples in wilderness preservation. Many park staffs are aware that tribes have extensive knowledge of wilderness areas that has been gathered over hundreds and thousands of years, and that this knowledge can help parks better manage wilderness today. Park staffs can also learn from existing, sophisticated tribal wilderness programs (e.g., the Intertribal Sinkyone Wilderness Council, California).

The key to respecting and incorporating tribal perspectives in wilderness planning and management is consultation—communicating with tribes early and often, separately from and prior to stakeholder and public meetings if necessary, and throughout the duration of the planning process. It is important to recognize that government-to-government consultation is required with federally recognized tribes that are traditionally associated with parks. Tribal members who do not represent the tribe in official capacities can also be valuable members of stakeholder groups. However, consultation with tribal members does not fulfill the requirement for government-to-government consultation.

Through consultation, tribal representatives can share their knowledge and their concerns, which may include maintaining access to traditional cultural properties and reburials within wilderness, and the collection of specific plant and other materials within wilderness for cultural purposes. An example of this intimate relationship is the Timbisha Shoshone at Death Valley National Park where the Timbisha Shoshone Homeland Act of 2000 created a 2.6-million-acre overlay on park wilderness and nonwilderness lands to be managed as the “Timbisha Shoshone Natural and Cultural Preservation Area.” To learn more about tribal perspectives and tribal consultations on wilderness areas, go to the Wilderness.net, State/Tribal Wilderness Toolbox, at <http://www.wilderness.net/index.cfm?fuse=toolboxes&sec=IFST>.

Data Gathering and Analysis

Decision making must be based on sound data and analysis. There are many places to look for data, much of which is likely to exist at the park already; however, there may be a need to gather additional data. Here are examples of sources and types of data that may inform wilderness stewardship planning.

Park data sources and types:

- *Wilderness/backcountry permit data*—number of permits; issuing station information; type of use (e.g., hiker, stock, watercraft); number of people in a party; trip duration; overall use numbers and site-specific use numbers.
- *Wilderness/backcountry campsite condition monitoring*—formal reports and informal/anecdotal comments.
- *Park rangers*—visitor contact information (e.g., numbers, location, law enforcement actions, complaints, compliments); resource actions (e.g., rehabilitation, cleanup, nonnative species removal); impacts noted; bear encounters; search and rescue actions (e.g., type, duration); commercial service authorizations and special use permits.
- *Natural resource management*—resource actions by staff (e.g., nonnative plant/animal removal); number of approved 4(c) actions (e.g., minimum requirements decisions) from all divisions; numbers of staff performing work (both National Park Service and researchers); a variety of data on resource trends (e.g., water quality, wildlife surveys, plant surveys, sensitive species, air quality, snow/water data, location and types of research equipment in wilderness*).
- *Inventory and monitoring*—variety of data on resources and trends.
- *Cultural resource management*—status of cultural resource inventories, location; National Register of Historic Places status or determination of eligibility; condition of cultural resources.*
- *Geographic information systems*—spatial natural and cultural resource data; park and wilderness boundaries; spatial mapping of trails and facilities.
- *Emergency services*—aircraft and helicopter use frequency; types (e.g., landings or overflights); locations.
- *Maintenance*—location, description, and condition of developments (e.g., trails, signs, restrooms, radio repeaters, administrative facilities); use of mechanized equipment or motorized transport.
- *Commercial services*—number of commercial use authorizations; trip information (e.g., locations, number of clients, use [e.g., backpacking, stock, fishing, photography]).

*Note that some natural and cultural resource data may be sensitive, and therefore, better left out of the plan.

Types of studies by parks, program centers, partners, universities, or others that may have been completed or may be sought:

- *Direct surveys of visitors*—perceptions of crowding, conflicts, and opportunities for solitude; preferences for conditions and management actions; visitor motivations and values; demographics; trip characteristics such as duration, group size, and primary activities.
- *Indirect surveys of visitors*—visitor counts, visitor activities, visitor use patterns, people at one time by location, trailhead registers, photo counts.
- *Assessment of visitor impacts on specific resources*—assessment of campsite and trail conditions; inventory of social trails; assessment of impacts to soils, water quality, soundscapes, and wildlife.
- *Resource conditions*—night sky; air quality; soundscapes; invasive plants.
- *Climate change*—scenario planning, vulnerability assessments, adaptation strategies, documented effects of climate change.
- *Socioeconomic environment*—NPS money generation model, census data, nonmarket value of wilderness.
- *Scientific literature*—visitor use research, visitor capacity, user impacts, impact mitigation, and fire in wilderness, such as that found at the Aldo Leopold Wilderness Research Institute (<http://leopold.wilderness.net/resprg.htm>).
- On-line resources; articles in newspapers, magazines (e.g., Outside, Backpacker).

For new and emerging ideas on data analysis, see appendix 3. For additional detailed information about data sources related to specific wilderness character qualities and measures, see appendix 5.1 of the *User Guide*.

Management Framework

The wilderness management plan will identify desired future conditions, as well as establish indicators, standards, conditions, and thresholds beyond which management actions will be taken to reduce human impacts on wilderness resources.

—NPS *Management Policies 2006*, section 6.3.4.2,
“Wilderness Management Planning”

The heart of a wilderness stewardship plan is a management framework that provides for consistent application of the Wilderness Act to preserve wilderness character while allowing some room for managers to adapt actions as trends change. Rather than trying to anticipate every possible future issue in a plan, the wilderness stewardship planning framework (as illustrated in figure 1 in the *Handbook* “Introduction”) provides a basis for future decisions and actions as conditions change. Consistent monitoring keeps track of conditions and trends and identifies changes in conditions that will trigger management actions to preserve or improve wilderness character.



This framework is not unique to wilderness stewardship planning. It is drawn from well-used processes including the NPS Visitor Experience and Resource Protection (VERP) framework (NPS 1997), and the Limits of Acceptable Change (LAC) system (Stankey et al. 1985) developed by the U.S. Forest Service (USFS). The VERP framework and the LAC system serve a common purpose by providing guidance for addressing visitor use management and visitor capacity in order to protect resources and visitor experiences. These two plus the wilderness stewardship planning framework all share a common focus on identifying measurable objectives to achieve desired future conditions. What is new about the wilderness stewardship planning framework is that unlike the other two, which largely focus on planning and managing for visitor use, the wilderness stewardship framework incorporates wilderness character into planning, monitoring, and management.

To avoid confusion over the terminology used in the *Handbook*, below are definitions for wilderness stewardship planning consistent with the terminology used in *Keeping It Wild*. Table 6 provides a comparison between the *Handbook*, the VERP framework, and the LAC system:

- *Desired conditions*—qualitatively describe an ideal condition of wilderness character. This is both a holistic condition, as well as the desired condition for all qualities of wilderness character: untrammelled, natural, undeveloped, and opportunities for solitude or primitive and unconfined recreation, and if applicable, the other features of value quality.
- *Indicators*—are distinct and important elements within each quality of wilderness character, which have measurable attributes that can be the focus of wilderness character monitoring efforts. There are 13 standard indicators in *Keeping It Wild* that fit within the four wilderness character qualities. The other features of value quality would have unique indicators.
- *Measures*—are a specific, tangible aspect of an indicator that can be measured to gain insight into the status of the indicator and assess trends over time. Baseline data are the first set of data collected after which systematic monitoring begins.
- *Standards*—are the minimum acceptable condition for measures and they serve as triggers for management action.
- *Management actions*—are implemented following a problem analysis to maintain or restore desired conditions.



Photo: NPS, Stephen Mather Wilderness, North Cascades National Park

Table 6. Comparison of terms.

Term	WSP Handbook and KIW: Wilderness Character	VERP (NPS)	LAC (USFS)
Indicators	Categories for measures	Specific measurable physical, ecological, or social variables that reflect the overall condition of a zone	Specific variables that are indicative of condition
Measures	Specific aspect of wilderness on which data are collected to assess trends	(not used)	(not used)
Standards	Minimum acceptable condition for each measure, serve as triggers for management action (part of <i>Handbook</i> but not covered in <i>Keeping It Wild</i>)	Minimum acceptable condition for each indicator, serve as triggers for management action	Measurable aspects of the indicator that provide a basis for judging whether a particular condition is acceptable, or not

MEASURE in KIW and
WSP Handbook =
INDICATOR in
VERP and LAC

The arrow in table 6 indicates one of the most critical clarifications of terms: “measures” in wilderness stewardship planning and *Keeping It Wild* are analogous to “indicators” in VERP and LAC.

Selecting Measures and Establishing Baselines

The overall strategy for selecting measures is to choose those that provide the best overall assessment of an area’s wilderness character, while also remaining quantifiable, reliable, and reasonable. Park staff should only use the minimum number of measures necessary to monitor the status of wilderness character, but they should use at least one measure for each of the 13 indicators. Data may already have been collected for some or many of the measures, providing a kick-start to the program. Monitoring should occur at least every five years, and more frequently if necessary for a particular measure. Baseline data for the measures are ideally collected at the date of designation or study but a baseline can be established at a later date when confidence in the data is more assured.

A national Wilderness Character Database has been developed in Microsoft Access to house all wilderness character baseline data and subsequent monitoring data. Park staff will enter information on selected measures in the database. Selecting measures from the *Keeping It Wild* framework, and instructions on how to use the Wilderness Character Database, are more fully explained in the *User Guide*. Examples and tools can be found at the <http://share.inside.nps.gov/sites/WASO/WSD/WC>.

If a park has prepared wilderness building blocks (described in the Introduction to the *Handbook*) or has existing data for potential measures, these may be adopted directly into the wilderness stewardship plan or may be revisited for adjustment. Here are a few examples:

- A wilderness stewardship plan may set a desired condition to increase the overall natural quality of wilderness character. To achieve that desired condition, a decision has been made to actively remove nonnative invasive plants, which will result in short-term degradation to the untrammelled quality in exchange for a long-term increase in the natural quality. If the abundance, distribution, or number of invasive nonnative species is not one of the previously selected measures, it may be appropriate to add it.
- A plan proposes specific management of climbing activities, in particular to manage or reduce the number of fixed anchors in wilderness. It may therefore be appropriate to add a measure regarding fixed anchors under the undeveloped quality.
- A plan sets a desired condition for high levels of solitude and natural soundscapes. There should be measures in place to help ensure those conditions are maintained or improved over time, such as soundscape data, visitor use data for that zone, encounter rates, or other such measures. Select measures that are most important for representing the condition of wilderness character, and are easy to collect and reliable for tracking conditions under the opportunities for solitude or primitive and unconfined recreation quality.
- It is important to keep the number of measures relatively small to ensure that there is capability to monitor the full breadth of indicators.

Examine the main goals of the plan and the desired conditions within each management zone to select measures that will help managers assess their progress toward those goals and allow for adjustments when necessary. The same measures may be used across all zones or may be uniquely distributed, especially if monitoring the other features of value quality of wilderness character. Regardless of the selected measures, they are useless unless they are consistently monitored.

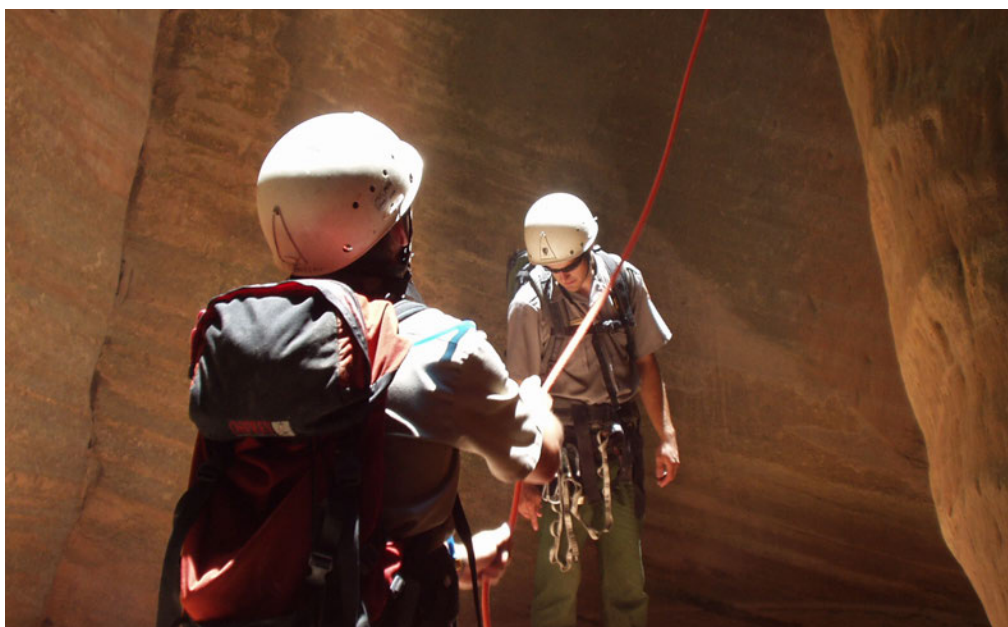


Photo: NPS/Ray O'Neil,
Zion Wilderness,
Zion National Park

Selecting Standards

Standards are the minimum acceptable condition of wilderness character measures, and they serve as triggers for management action. Standards are very different from objectives or desired conditions in that they identify the limits of an acceptable condition rather than a condition to strive for. Standards are set by understanding the social and biophysical consequences of inaction and the costs required for action. Developing standards involves both professional expertise and consideration of public input. Standards may vary by planning alternative or management zone.

Monitor each measure to assess whether acceptable conditions currently exist or whether standards have been exceeded. Management actions would be triggered if the condition of a measure is trending downward to near or below a selected standard. For example, if data show that conditions for either of the two measures, “number of group encounters” or “number of campsites within sight or sound of each other,” fails to meet established standards, management action must be taken to bring conditions back above the standard. Characteristics of good standards include:

- *Quantitative*—Standards must relate quantitatively to a measure. For example, if a measure is “number of group encounters per day,” a standard may be “no more than three groups encountered per day.” A standard of “low numbers of encounters” contains no specific figure and requires an inherently arbitrary management decision. “Two percent ground cover for nonnative species” would be a good standard as it is quantitative, while “low cover of nonnative plants” would be a poor standard as it is qualitative.
- *Temporal or spatial qualifiers*—Express how much and how often an impact is or is not acceptable. The previous example of group encounters is qualified by “per day.” Other temporal qualifiers might include “per night,” “per trip,” “per hour,” or “at one time.” Spatial qualifiers might include distance, such as “four informal trails per mile.”
- *Probability*—In many cases, it may be helpful to include a percentage of tolerance for a condition. For example, “no more than three encounters per day for 80% of the time.” This allows for some of the complexities and randomness inherent in fluctuating periods of visitation.
- *Relevant to issues and concerns*—Stay focused on the desired condition. For example, “no more than 20 groups per day on the trail” may not address a desired condition of “moderate solitude.” The primary concern may be the number of encounters, not the total number of people on a trail. Either scenario requires a different managerial approach.
- *Achieve desired conditions*—In some cases, such as with a high level of resource impacts near campsites, the existing condition may be far below a standard. Even though the standard may not be reached until many years in the future, it is still used to measure progress toward improving long-term conditions.
- *Realistic*—A standard should reflect conditions that are attainable.



While it is ideal to set quantitative standards for all measures in the wilderness stewardship plan, it may not always be possible. In some cases it may be more practical to identify trends in a measure that could trigger management actions. For example, in cases where quantitative data on the condition of a resource are unavailable, quantitative standards may be difficult to establish. In those situations standards that reflect the overall trend in the measure may be more useful to managers. The use of qualitative standards should be temporary and a wilderness character monitoring strategy should be developed that focuses on collecting data necessary to establish the quantitative standards. Examples of both approaches are shown on the next page.

Photo: NPS, Marjory Stoneman Douglas Wilderness, Everglades National Park

Example 1. Quantitative standard approach.

Indicator	Measure Topic (as developed in workshop)	Specific Measures	What Does It Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Remoteness from occupied and modified areas outside the wilderness	Night sky visibility (light pollution) averaged over the wilderness	Light pollution averaged over the wilderness (using established methods from NPS Night Skies Program)	Intrusion of human influence	Zone X	Increase in measured light pollution of $\leq A\%$ above baseline	<ul style="list-style-type: none"> Educate and increase outreach on low impact lighting Establish partnerships with external entities to encourage low-impact lighting

Example 2. Qualitative standard for trend in measure.

Indicator	Measure Topic (as developed in workshop)	Specific Measures	What Does It Evaluate?	Assigned Zone	Recommended Standard	Appropriate Management Strategies
Remoteness from occupied and modified areas outside the wilderness	Night sky visibility (light pollution) averaged over the wilderness	Light pollution averaged over the wilderness (using established methods from NPS Night Skies Program)	Intrusion of human influence	Zone X	If trends in light pollution increase, then management strategies will be initiated	<ul style="list-style-type: none"> Educate and increase outreach on low-impact lighting Establish partnerships with external entities to encourage low impact lighting



Photo: NPS/Kraig Snure, Mount Rainier Wilderness, Mount Rainier National Park

Management Actions If Standards Exceeded

When developing the wilderness stewardship planning framework of desired conditions, measures, and standards, identify specific management actions to take if standards are exceeded or trends are showing increasing impacts. These specific actions should be informed by the broader strategies identified in the various plan alternatives. A useful approach is to identify a suite of actions beginning with the easiest to implement or least intensive, followed by increasingly complex actions. If conditions or trends did not improve, more intensive actions might be taken; however, not all actions will necessarily be undertaken. Below are some examples of framework elements for each wilderness character quality, with an associated indicator, selected measure, related standard, and a menu of options for management action:

Wilderness Character Quality: Untrammelled

Indicator: Actions authorized

Measure: Number of lakes and other water bodies stocked with fish

Standard: 0 fish stocking

Management Actions:

- » Focus education on fisheries management
- » Coordinate with state and federal hatcheries and fishery managers to reduce or eliminate fish stocking
- » Continue with fish population research, creel surveys, and impact studies

Wilderness Character Quality: Natural

Indicator: Plant and animal resources

Measure: Abundance, distribution, or number of nonnative species

Standard: \geq 5% decrease in area affected by noxious weed species

Management Actions:

- » Increase education that focuses on preventing exotic species invasion
- » Perform noxious weed control
- » Limit disturbances to habitats to limit invasion by nonnative animals
- » Limit invasive species vectors and pathways

Wilderness Character Quality: Undeveloped

Indicator: Nonrecreational structures, installations, and developments

Measure: Index (establish a protocol to calculate) of authorized physical development

Standard: $<$ 5 % total increase from established initial baseline

Management Actions:

- » Limit and regulate new installations of nonrecreational structures using the established MRA process
- » Remove structures and rehabilitate areas no longer needed within one year

Wilderness Character Quality: Solitude or Primitive and Unconfined Recreation

Indicator: Remoteness from sights and sounds of people inside the wilderness

Measure: Number of encounters with individuals from other parties per day based on wilderness patrol logs

Standard: Exceed encounter rate of 10 encounters per hour \leq 15% of patrols

Management Actions:

- » Increase patrols to measure encounter rates on routes
- » Use trail counter to determine overall use
- » Adjust trailhead quotas
- » Establish use limits if encounter rates are reached
- » Require permits for overnight use

Wilderness Character Quality: Other Features of Value

Indicator: Deterioration or loss of cultural resources integral to wilderness character

- » Measure: Number of unauthorized actions that result in disturbances to cultural resources (looting, trespass activities, noncompliance with the National Historic Preservation Act)

Standard: No more than two minor incidents per year related to loss / zero major incidents

Management Actions:

- » Increase education that focuses on the value and significance of cultural resources
- » Increase law enforcement patrols in certain sensitive areas
- » Begin a permitting process to legally access particularly sensitive areas

More About Measures, Standards, and Management Actions

Adopting *Keeping It Wild* into NPS planning and management is relatively new and best practices are still emerging. Here are a few more things to consider:

- *Adopt existing applicable measures / standards*—A park may have a set of desired conditions, measures, standards, and management actions in another plan such as a fire management plan or stock management plan. These should be reviewed to see if any of them are relevant to wilderness character and could be adopted or adapted into the wilderness character framework. The more overlap and reliance on existing measures, the more likely a park will be able to achieve sustained wilderness character monitoring.
- *Avoid creating new standards and management actions outside of a planning process*—*Keeping It Wild* was developed as a tool for establishing wilderness character monitoring. It provides guidance for selecting measures and developing reports on trends, but it does not address standards and management actions. Identifying standards and management actions are ideally part of a planning activity, informed by the goals and objectives of the plan, issues and opportunities identified in internal and external scoping, and management alternatives. While measures could be selected and monitored ahead of a planning effort, standards and management actions should not be established outside of a planning process. If they are, they would not be anchored to any particular framework or direction and management actions would also be out of compliance with NEPA requirements. Standards that have been developed in another planning process such as a general management plan could be adopted in the wilderness stewardship plan.
- *There does not necessarily have to be a one-to-one relationship between measures and standards / management actions*—Guidance from *Keeping It Wild* directs the selection of a minimum of one measure for each of 13 indicators and discourages selecting too many. Some indicators may warrant several dimensions and have easily obtainable data, such as air quality, and for other indicators it may be difficult (but still necessary) to identify an appropriate measure.



Photo: NPS/Emily McCuiston,
Death Valley Wilderness,
Death Valley National Park

- *Visitor Use Management and Visitor Capacity*—According to NPS *Management Policies 2006* (section 8.2.1, “Visitor Carrying Capacity”) park managers need to manage visitor use and address visitor capacity, and “the decision-making process should be based on desired resource conditions and visitor experiences for the area, quality indicators and standards that define the desired resource conditions and visitor experiences, and other factors that will lead to logical conclusions and the protection of park resources and values.” Further, the 1978 National Parks and Recreation Act calls for each unit of the national park system to have a plan that identifies and commits to implementing visitor carrying capacity. Visitor carrying capacity is the type and level of visitor use that can be accommodated while sustaining the desired resource and visitor experience conditions (NPS *Management Policies 2006*, section 8.2.1). Where does visitor use management and visitor capacity (or carrying capacity) fit within the wilderness character framework? These concepts are relevant to opportunities for solitude or a primitive and unconfined recreation experience, and can inform measures and standards selected for that quality of wilderness character. An important component of addressing visitor use management and visitor capacity is identifying visitor-use-related measures, standards and management strategies, including possible regulations on use levels.
 - » A park may have already established some measures and standards for visitor use in a general management plan or other planning document, which may also prove useful within a wilderness stewardship plan. If a park is preparing a wilderness stewardship plan in order to update or replace part of a general management plan, it may be necessary to develop specific visitor use measures and standards and visitor capacities to fulfill park planning requirements (including the 1978 National Parks and Recreation Act). Often an interdisciplinary workshop is held to develop visitor use management components.
 - » Based on pilot testing of developing visitor use measures, standards, and management actions within the broader wilderness character framework, it is possible to do much of the work in a single workshop for a medium-sized park such as Black Canyon, while at parks with complex visitor use issues such as Sequoia and Kings Canyon it is challenging to merge all visitor use work into a single session.
 - » It remains the goal to find common measures, standards, and management actions for wilderness character, visitor use management, and resource stewardship strategies.

Alternatives

Following identification of goals, objectives, issues, and opportunities; civic engagement and consultation; and selection of measures and standards, it is time to identify action alternatives. What management actions will fulfill the goals of the plan? What actions are appropriate for addressing issues and opportunities in wilderness? A list of possible issues and actions can be found in appendix 4. From a list of alternative actions including a “no action” alternative, the process leads to the identification of a preferred alternative.

Developing Alternatives

Potential management action alternatives often arise at various points in the planning process. Alternatives can originate internally from the interdisciplinary team and park staff, or externally from public stakeholders during public scoping, or a combination of both. Different approaches or visions for wilderness stewardship should be expressed as alternatives to the team’s proposed action or within the proposed action.

Develop a reasonable range of alternatives that feasibly satisfy the park purposes and needs that were identified early in the planning process. In wilderness stewardship planning, the range of options for alternatives is somewhat constrained by the direction of the Wilderness Act. If no real alternatives arise during scoping and planning, “no action” may be the only true alternative to a proposed action (this should be the exception, not the rule). In this case, the interdisciplinary team is encouraged to seek counsel with the regional NEPA coordinator to ensure that this alternative will be supported by the regional directorate.

Each alternative needs to have an underlying cohesive rationale or philosophy. Without a unifying concept, it is difficult to explain and defend an alternative to the public. Without this rationale, an alternative would probably prove less effective if unanticipated issues or problems should arise once the planning effort was complete. Wilderness character should be a primary consideration in structuring alternatives and should remain an integral part of the underlying concept of appropriate wilderness stewardship. There are some excellent ideas for developing various alternatives in the *General Management Planning Dynamic Sourcebook*.

It is important that alternatives not be contrived, i.e., alternatives should not follow the “Goldilocks Syndrome” of one alternative being “too hot” and another “too cold” with the preferred alternative being “just right.”



Photo: NPS, Olympic Wilderness, Olympic National Park

Zoning – An Accepted Practice In Wilderness

- Some people do not think zoning is appropriate in wilderness because wilderness should be managed as a whole and not subdivided
- Zoning is a well-established planning and management tool that has been effectively used in wilderness stewardship
- All zones must meet or exceed all requirements to comply with the Wilderness Act
- Wilderness character differs, so can zones
- Buffer or transitional zones are not appropriate within wilderness boundaries

Management Zones

When necessary, all categories of wilderness may be zoned for visitor experiences and resource conditions consistent with their wilderness values within the established management zoning system for each park. However, management zoning or other land use classifications cannot and will not diminish or reduce the maximum protection to be afforded lands with wilderness values. Transition zones adjacent to wilderness may be identified to help protect wilderness values, but no transitional or “buffer” zones are appropriate within wilderness boundaries.

—NPS Management Policies 2006, section 6.3.4.1,
“Zoning for Wilderness”

It is useful to be able to map and describe alternatives based on a zoning system. Zones can preserve various combinations of wilderness character qualities, and the wilderness stewardship planning framework (i.e., measures, standards, management actions) can be applied differently within each zone. Management zones articulate desired conditions related to wilderness character.

Desired conditions can be described for the zones both in narrative, using the qualities of wilderness character, as well as through measures and standards that trigger management action. The desired conditions for the four (or five, if applicable) qualities of wilderness character could be developed for each zone, or could be developed parkwide for all zones. An example of different desired conditions for wilderness character qualities that could be different for different zones is when one zone may have desired conditions for a very remote opportunity for solitude where a visitor would see only one person per day maximum, while another zone may have a desired condition for free and unconfined recreation, such as jumping and rolling down the dunes at Great Sand Dunes, without as high of a level of expectation for solitude.

A park has considerable leeway in identifying and describing appropriate management zones and in determining the total number of zones needed to effectively manage the park’s wilderness resource.



Photo: NPS, Noatak Wilderness, Noatak National Preserve

Where possible, these zones should remain consistent with a general management plan. In some cases, especially where the general management plan is lacking or is no longer current, the wilderness stewardship plan may be completed as a GMP amendment. Zones may be assigned in a “no action” alternative when previous wilderness planning efforts included zoning. Some parks may determine that only one or two zones are appropriate, while others may determine that multiple zones are the best way to meet particular wilderness stewardship objectives. There are two basic ways to address zoning within a wilderness stewardship plan, described here as Pathway 1 and Pathway 2:

- *Pathway 1*—The first step is to create a written description of one or more wilderness zones; however many are necessary to effectively manage the wilderness. For each zone, define the desired conditions, indicators, measures, and standards for wilderness character. These zone descriptions remain fixed across all alternatives. The second step is to allocate the zones to the park land base in order to reflect different overall visions or conceptualizations of each alternative. The result is one set of written zone descriptions that remains identical for each alternative, but includes a different map for each alternative showing the different allocations of the zones. The Death Valley National Park Wilderness and Backcountry Stewardship Plan and Environmental Assessment (August 2013) referenced in appendix 2.2 provides an example of this approach.
- *Pathway 2*—The first step is to divide the wilderness land base into logical units that encompass relatively homogeneous areas of wilderness character. These unit boundaries remain fixed across all alternatives. The second step is to describe how each unit is managed—in other words, define the desired future conditions, guidelines, indicators, and standards. The zone descriptions may vary among alternatives in order to reflect the different overall visions or conceptualizations of the alternatives. The result is one map showing the same unit boundaries for all alternatives, but the actual zone descriptions for the units may change from one alternative to the next. The Black Canyon of the Gunnison National Park / Curecanti National Recreation Area Draft Backcountry and Wilderness Stewardship Plan (August 2011) referenced in appendix 2.2 provides an example of this approach.

Pathway	Zone Descriptions	Distribution of the Zones on the Map / On the Ground
Pathway 1	Do not vary by alternative	Vary by alternative
Pathway 2	Vary by alternative	Do not vary by alternative

Because most wilderness areas are not homogeneous in their wilderness character, zoning is a way of managing to preserve and enhance a spectrum of qualities in a given wilderness, including preserving the most pristine areas. Wilderness can also be managed as one single management zone if desired, or if the interdisciplinary team decides that an area should be managed differently in different seasons, the area could be placed in different seasonal zones.

Management zoning is a *prescriptive* process that specifies desired conditions. In other words, zones do not necessarily reflect existing conditions, but rather reflect an ideal state. Wilderness management zones should include the following elements:

- Desired conditions, especially for the qualities of wilderness character
- Indicators
- Measures
- Standards
- Management actions

The National Park Service does not have a fixed set of zones for general management planning or wilderness stewardship planning. All wilderness zones must comply with NPS policy for managing wilderness and need to reflect the distinction between wilderness resources and other backcountry resources. Examples of management zones can be found in various wilderness and backcountry management plans, including Rocky Mountain National Park, Zion National Park, and Denali National Park and Preserve. Earlier plans and those by other agencies can provide examples but probably do not integrate wilderness character into the wilderness stewardship planning framework. More recent wilderness stewardship plans, such as those for Death Valley National Park and Black Canyon of the Gunnison National Park, have integrated wilderness character into different management zones (see appendix 2.2).

Teams should develop zoning concepts that embrace all qualities of wilderness character. In the past, the National Park Service and other agencies have commonly used an approach to identify zones as “primitive,” and “semi-primitive.” These are acceptable terms and concepts but they reflect a traditional type of wilderness planning centered on visitor experience and visitor impacts, rather than on the more holistic qualities of wilderness character. Further, according to policy, zoning should not be used to establish “buffer” or “sacrifice” areas within any wilderness area. One approach is to develop zones that are based on common wilderness character such as the “inner canyon” and “upland” zones in the Black Canyon / Curecanti wilderness and backcountry stewardship plan. Another approach is to develop a number of zones with subzones that further refine management approaches. This might be appropriate when zones developed in the park’s general management plan are too general for the level of guidance needed to meet wilderness stewardship objectives. In some parks only one zone may be needed for the entire wilderness. Some zone titles can create confusion in communicating the zone’s overall concept, so numbers rather than titles may be more appropriate (e.g., Management Classes 1–4 are used in the Rocky Mountain National Park wilderness and backcountry management plan). Each team needs to develop zones that are the most useful for the meaningful management of wilderness. Check for emerging, more current examples at the <http://share.inside.nps.gov/sites/WASO/WSD/WC>.

Developing Alternatives—Specific Guidance

Developing alternatives is frequently an iterative process and may require several workshops to complete, particularly if the planning effort is covering both broad conceptual details and more tightly focused details of plan implementation. Typically, conceptual alternatives are drafted first. These include zone descriptions and describe the proposed action from a “thirty-thousand foot perspective.” Allocations of the zones to different areas of the wilderness are also a part of alternative development (Pathway 1); usually maps are the most effective tool for this representation. Zone allocation should be done in harmony with the theme or concept of each alternative.

These conceptual alternatives may be shared within the agency (especially if there is anticipated controversy), and perhaps with partner agencies and the public via the PEPC website and an open comment period. Following the review period, the IDT should consider comments received and reevaluate the conceptual alternatives. The team may decide to reconfigure certain aspects of the alternatives, add new concepts suggested by reviewers, or delete some concepts that were generally disliked. Entire alternatives may also be merged or split apart at this stage. These types of significant changes are far easier to handle at this stage of the planning process than further along after impact analysis is done. This point in the process also provides an opportunity to refine the alternatives if there is any confusion with the description or any other aspect or feature of the alternative, and to incorporate clearer language into the public document.

A matrix can be a useful tool for developing alternatives, with each issue and action topic listed vertically along the left, and each alternative horizontally across the top. A list of possible issues and action topics can be found in appendix 4. Use workshops to choose where actions should differ by alternative, or where they are common to multiple alternatives. After the matrix is completed, use the information to write the narrative description of each alternative for chapter 2 of the completed wilderness stewardship plan, describing the “no action” alternative, each action alternative, and actions common to all alternatives or all action alternatives. Wherever possible, include a description of estimated costs associated with implementing each alternative, including recurring costs (e.g., staffing, facilities maintenance) and nonrecurring costs (e.g., capital improvements, one-time restoration actions). It may be helpful to work with facilities management personnel to develop lifecycle costs for infrastructure.



Photo: NPS/John Pritz,
Denali Wilderness, Denali
National Park & Preserve

Following development of conceptual alternatives, there may be many implementation-level details that also need to be described for each alternative and/or each zone. Appendix 4 provides ideas of what implementation-level details might be included in a wilderness stewardship plan. These details will probably need additional workshops to develop and resolve. It may also be helpful for the IDT to form several small working groups of three to five people to work together over a series of short meetings to develop the details under a specific topic for each alternative. For example, if human waste management is an issue, a small working group might be tasked with developing a description of those procedures common to all alternatives, and identifying what might vary between them under the different alternative concepts. Some decisions may require site visits to develop additional details under each alternative. Permitting systems (e.g., mandatory vs. voluntary, how permits are obtained) may also vary by alternative and need careful description. If a wilderness stewardship plan includes nonwilderness backcountry, there may be a need to describe a whole variety of facilities for each alternative (e.g., backcountry roads, toilet facilities, trailheads, primitive campgrounds). The appropriate level of detail depends on whether the NEPA document for the wilderness stewardship plan is also meant to serve as the environmental compliance for the actual implementation of that aspect of the alternative. For example, if a new trail and trailhead are proposed and the intent is that no additional NEPA work will be done prior to construction, a lot of detail will be necessary. This may include the location of the new trailhead, size and surface of the trail, any associated new facilities, the types of cultural and natural resource monitoring required during construction, and more. If, however, additional compliance would be done after completing the wilderness stewardship plan, then it might be sufficient to simply draw a bubble on a map and label it as new trail and trailhead, providing a brief description of the trail destination, length, and design capacity.



Photo: NPS, Marjory
Stoneman Douglas
Wilderness, Everglades
National Park

Environmental Analysis

Affected Environment

The affected environment section of the environmental assessment or environmental impact statement should succinctly describe the existing natural, cultural, and socioeconomic resources that would be affected either directly or indirectly by implementing any of the alternatives, including the “no action” alternative. These resources should have been identified during preparation of the environmental screening form and external scoping. Identify impact topics for future data collection. The purpose of describing the affected environment is to help define the context in which impacts will occur, thus helping frame the significance of an impact. More information about developing the affected environment section can be found in the *DO-12 Handbook*.

This section should specifically include wilderness character as an impact topic, describing the four qualities of wilderness character, and the other features of value quality, if appropriate. The selected measures in the monitoring framework can also provide a basis for describing the attributes of wilderness character that are unique to this wilderness, under the other features of value quality. More information about incorporating wilderness character into the affected environment section can be found in chapter 4 of the *User Guide*.

Environmental Consequences

The role of any NEPA document is to fairly, objectively, and candidly display the projected impacts of each alternative. Both decision makers and the public should have a clear picture of projected impacts. Environmental assessments and environmental impact statements should each routinely inform the public when data are lacking, models may be prone to error, or there is insufficient research or experience available to accurately predict impacts.

Impact analysis uses the projected context, duration, and intensity of impacts to predict the magnitude and extent of the effects of management actions on resources. Define and quantify these variables as much as possible. The analysis here (whether an EA or EIS format) must adequately discuss direct, indirect, and cumulative impacts of the proposed action. Also analyze the potential beneficial effects of each alternative. NPS guidance on conservation planning and NEPA compliance emphasizes the need for clear statements of objectivity, context, mitigation, methodologies employed, applicable regulations and policies, cumulative impacts, sustainability, and conclusions reached for each impact topic. The impact analysis should specifically address wilderness character as an impact topic, identifying effects on each of the qualities of wilderness character and on wilderness character as a whole. More information about incorporating wilderness character into the environmental analysis section can be found in chapter 4 of the *User Guide*. General guidance for impact analysis is available in the *DO-12 Handbook* and in the *General Management Planning Dynamic Sourcebook*.

The preferred alternative should be the one that best fulfills the goals and objectives of the plan, and best preserves wilderness character

Identifying a Preferred Alternative

The IDT should use a process that is logical and well documented to identify a preferred alternative. The preferred alternative should be the one that best fulfills the goals and objectives of the plan, and best preserves wilderness character, with due consideration given to cost and feasibility. A preliminary assessment of potential impacts should inform identification of a preferred alternative. For general management plans and many other plans, the National Park Service conducts a value analysis that focuses on the various advantages and trade-offs of each alternative. A value analysis can be adapted to incorporate qualities of wilderness character into the factors and attributes used to determine advantages. The Choosing by Advantage method of value analysis, formerly used in many general management planning projects, is no longer an approved approach for identifying the preferred alternative. The NPS Park Planning Program should be consulted for further information. Regardless of the method used to identify a preferred alternative, it is critical to document the rationale behind the selection.

The concept of the preferred alternative is different from the “environmentally preferable” alternative required by the National Environmental Policy Act. The preferred alternative and the environmentally preferable alternative are often the same, but this is not always the case. Different alternatives may be identified under the two concepts. More explicit direction for determining the environmentally preferable alternative can be found in the *DO-12 Handbook*.

Administration and Implementation

An important part of plan development includes determining administrative procedures to integrate wilderness character into park operations, and designing strategies for plan implementation.

Minimum Requirements Concept

All management decisions affecting wilderness must be consistent with the minimum requirements concept. This concept is a documented process used to determine if administrative actions, projects, or programs undertaken by the Service or its agents and affecting wilderness character, resources, or the visitor experience are necessary, and if so how to minimize impacts. The minimum requirements concept will be applied as a two-step process that determines whether the proposed management action is appropriate or necessary for administration of the area as wilderness and does not cause a significant impact to wilderness resources and character, in accordance with the Wilderness Act; and the techniques and types of equipment needed to ensure that impacts on wilderness resources and character are minimized.

In accordance with this policy, superintendents will apply the minimum requirements concept in the context of wilderness stewardship planning, as well as to all other administrative practices, proposed special uses, scientific activities, and equipment use in wilderness.

—NPS Management Policies 2006, section 6.3.5,
“Minimum Requirement”

Effective application of the minimum requirements process is essential to sound wilderness stewardship. The wilderness stewardship plan should include a section that details how the park will apply minimum requirements analysis for all potential actions impacting wilderness character. The section should identify the MRA form to be used or guidance to be followed; and describe how the analysis will be initiated and evaluated; the approval process; procedures for ensuring that actions conform to the decision, and for tracking cumulative effects over time. It should also identify possible programmatic minimum requirements analyses. More information can be found in chapter 4 of the *User Guide*.

Scientific Activities

Park staff may elect to include a section on management and approval of scientific activities in wilderness within the wilderness stewardship plan. Science and research are important and integral parts of wilderness stewardship, providing insights into resource preservation, baseline information in a rapidly changing world, and a general increase in knowledge. Scientific activities can also adversely affect wilderness character by the use of motorized equipment, mechanized transport, and installations. Over time these issues can multiply in cumulative impacts to wilderness character. This section of the plan could identify guidelines for determining what research is necessary or appropriate, document existing activities, establish improved communication methods with researchers, ensure that the research permit process addresses wilderness character, identify a system to monitor permit compliance, track cumulative effects, and ensure the dissemination of results. Scientific activities may also be addressed during the development of alternatives or zones in the wilderness stewardship plan. More information can be found in chapter 4 of the *User Guide*.



Photo: NPS, Olympic Wilderness, Olympic National Park

Other Operational Procedures

Staff is encouraged to develop a suite of operational procedures that embody the spirit of the Wilderness Act in all park operations. This would encompass not only MRA and scientific activities, but all activities related to the administration of commercial services, search and rescue, maintenance of structures in wilderness, monitoring activities, visitor contacts, ranger activities, interpretation and education, safety, and communication. Developing standard operating procedures that preserve wilderness character may help all divisions understand their role in wilderness stewardship. Additional information on incorporating wilderness character into operational procedures can be found in chapter 4 of the *User Guide*. Appendix 4 of this *Handbook* also provides ideas of what operational guidelines might be included in a wilderness stewardship plan.

Project Closure

To complete a NEPA process, the appropriate decision document is prepared: A Finding of No Significant Impact (FONSI) for an environmental assessment (if no significant impacts were found), and a Record of Decision (ROD) for an environmental impact statement. Administrative files for the project should be properly organized and stored. More guidance for this step can be found in the *DO-12 Handbook*.

Implementation

A wilderness stewardship plan can only be effective if it is implemented. The IDT should strive throughout the planning process to develop a plan that is feasible to implement, and near the end of the planning process, develop a set of strategies to ensure effective implementation of the wilderness stewardship plan. Strategies may include:

- Committing to developing and implementing annual strategic plans to meet long range goals and objectives
- Identifying staff roles and responsibilities for wilderness stewardship
- Identifying specific schedules and responsibilities for monitoring and reporting
- Incorporating wilderness responsibilities into staff performance plans
- Developing a strategy for integrating wilderness training into other training and including wilderness training in individual employee development plans
- Establishing a new, or refining the composition and charter of an existing, park wilderness stewardship committee
- Identifying priorities and potential funding sources and incorporating funding needs into park priorities and work plans
- Working with partners to achieve goals and objectives; for example, establishing a “friends of the wilderness” group or enlisting volunteers for collecting monitoring data

For new and emerging ideas in wilderness planning, see appendix 3 and the Wilderness Character SharePoint site: <http://share.inside.nps.gov/sites/WASO/WSD/WC>.

PART II

Wilderness Stewardship Plan Content

Now I see the secret of the
making of the best persons. It is
to grow in the open air, and to
eat and sleep with the earth.

—Walt Whitman

Photo: NPS, Butterfly Orchid,
Marjory Stoneman Douglas
Wilderness, Everglades
National Park





Photo: NPS, Marjory Stoneman Douglas Wilderness,
Everglades National Park

PART II—WILDERNESS STEWARDSHIP PLAN CONTENT

Part I of the *Handbook* described the process, or steps to be taken by an interdisciplinary team to complete a wilderness stewardship plan. Part II outlines the contents of a wilderness stewardship plan and provides an overview of what each section should include, beginning with the summary and table of contents.

Summary

The purpose of this section is to provide an executive summary of the environmental assessment or environmental impact statement. It should serve as an overview of the document summarizing the purpose and need, the alternatives, the affected environment, and the impacts of the alternatives. Wilderness character should be clearly presented as an integral component of the document.

Table of Contents

There is no standardized format, other than meeting the requirements of the National Environmental Policy Act and the *DO-12 Handbook*; however, the ordering of part II that follows provides an example of a table of contents format.

Chapter 1: Purpose and Need

The first chapter of the wilderness stewardship plan defines the scope and the need for the plan and clearly articulates the purpose and goals of the wilderness stewardship plan. The chapter can be organized in several different ways, as long as it includes the major components below.

Introduction

Include a brief introduction that will orient the reader to the document. State whether the document will include an environmental assessment or an environmental impact statement. State whether the wilderness stewardship plan will be a GMP amendment or an implementation plan. Briefly define the extent or area of land covered by the wilderness stewardship plan—how much of the park will be included in the planning effort, how much wilderness is designated, or formally eligible, potential, proposed, or recommended as wilderness? Will the plan cover areas of park backcountry as well as wilderness? Include a brief description of the park and the wilderness including some basic facts (e.g., enabling legislation date[s] or wilderness study status, acreages). The reader should be able to understand where the park and wilderness areas are located, who the neighbors are, and the regional context for the planning effort (geographically, politically, economically, and socially). Identify the primary purpose(s) of the wilderness. Include a map of the park's regional location and a map of the wilderness area. This section should also include a description of the exceptional resources and values for which the wilderness was established and why those resources and values are nationally or regionally significant or unique, using all of the qualities of wilderness character. If the park has completed the wilderness basics building block described in the "Introduction" to the *Handbook*, use the background wilderness information and the wilderness character narrative to help develop this section.

Purpose and Need

This section should detail the reasons the wilderness stewardship plan is being prepared and should outline the problems and challenges for the management and stewardship of the wilderness. This section should provide an adequate explanation as to why the park is writing a wilderness stewardship plan and should include discussion and explanation of the on-the-ground purposes for the plan, not simply a summary of NEPA requirements. There will be some purposes that stem from law (including the Wilderness Act and the enabling legislation that established the wilderness), purpose and significance statements, and policy or previous planning efforts, but the wilderness stewardship plan should identify specific goals that are necessary to deem a planning effort successful. A good description of the purpose and need will pave the way for developing the range of alternatives later in the planning process.

This section will also identify why the park needs to take action at this time. Summarize the issues that need to be addressed in order to successfully preserve or improve wilderness character. Discuss and explain any problems with existing conditions, significant decisions to make, and any policies or mandates to implement. Significant decisions may include broadreaching ones (such as the appropriate types and levels of management or facilities development within management zones) or site-specific issues that need to be addressed in order to achieve desired conditions or prevent future degradation of wilderness character.

Goals and Objectives

Goals and objectives are key elements of a wilderness stewardship plan, as they establish and provide the direction for the park's wilderness management program and reflect the purpose and need for planning. Goals should be directed toward the outcomes of the wilderness stewardship plan, not the planning process. Wilderness goals and objectives flow from law, policies, park and wilderness enabling legislation, GMP objectives, resources stewardship strategies, public input, and more. Goals and objectives should be guided by the direction in the Wilderness Act to preserve wilderness character, and should articulate the desired conditions that shape management actions. It is sometimes difficult to differentiate between goals and objectives. Goals are usually broader and farther reaching, and objectives are usually more specific and have measurable outcomes. Although some parks may choose to develop an overall goal or multiple goals in addition to objectives, some may not. Do whatever is most effective for managing a particular wilderness.

Desired conditions provide further, more detailed descriptions of the conditions a park wants to achieve and maintain over time to meet the goals and objectives. Desired conditions are an important part of developing alternatives and management zones in a wilderness stewardship plan. Describe desired conditions by incorporating the different qualities of wilderness character (see Arrows Exercise in appendix 3 for a technique to help articulate desired conditions by quality). The desired conditions stated in this section should be widely applicable, both geographically and temporally, with more-detailed descriptions of desired conditions included later in the specific zones and/or alternatives.

Example: Black Canyon of the Gunnison National Park / Curecanti National Recreation Area Draft Wilderness and Backcountry Management Plan, August 2011

Goal: Restore, protect, and enhance wilderness character in wilderness areas.

Objective: Evaluate existing conditions and management practices and define desired resource and social conditions in wilderness and nonwilderness backcountry areas, consistent with park purposes.

Desired conditions for one zone – Black Canyon: Inner Canyon Wilderness Zone

The principle desired conditions for the inner canyon wilderness zone would be wild, natural, and rugged. The zone is remote and provides for adventure. The experience would be challenging and the visitor would need to be self-reliant and equipped with wilderness skills. For new and emerging ideas in wilderness planning, see appendix 3 and the NPS Wilderness Character SharePoint site.

Example: Death Valley National Park Wilderness and Backcountry Stewardship Plan, August 2013

Goal statements:

- Preserve the untrammeled quality of wilderness character by refraining from the deliberate manipulation or management of wilderness resources except as necessary to promote another quality of wilderness character or to preserve human life or to accommodate other activities in compliance with applicable laws.
- Promote the natural quality of wilderness character through the thoughtful restoration and / or maintenance of natural processes and features while managing archaeological, historical and ethnographic sites in a manner that is compatible with wilderness and historic preservation laws.
- Preserve and enhance the undeveloped quality of wilderness character by judicious review and, where appropriate, removal of nonconforming and/or unnecessary installations.
- Provide for outstanding opportunities for solitude or primitive and unconfined recreation as long as such visitor uses can be offered without degradation of significant natural and cultural resource values.
- Preserve ecological, geological, scientific, educational, scenic, and historical values of wilderness, including culturally significant resources and paleontological resources within wilderness as important and prominent values of the Death Valley National Park Wilderness consistent with the California Desert Protection Act and the general management plan.
- Preserve the intangible aspects of wilderness, including the ethnographic value to the Timbisha Shoshone and accommodate ongoing traditional cultural uses by the Timbisha Shoshone within their Natural and Cultural Preservation Area and other special use areas.



Photo: NPS/Garry Oye,
Death Valley Wilderness,
Death Valley National Park

Background

This section provides background on the administrative factors (e.g., laws, policies, special regulations, plans) that directly apply to the wilderness. These will provide the foundation for developing the management actions proposed in the plan.

Enabling legislation and/or wilderness study history

For designated wilderness, summarize the reasons the wilderness was established as it is described in the enabling legislation and legislative history. Be sure to describe all special provisions that may be part of the legislation. These are any provisions in enabling legislation that differ from the statutory language of the Wilderness Act, in particular, provisions for the section 4(c) prohibited uses. Include the wilderness legislation, or selected sections if part of a large omnibus bill, in an appendix. Indicate if there are any potential wilderness additions included in the enabling legislation, with a list of them included in the appendix. See the “Law and Policies” section at <http://www.wilderness.net/NWPS/lawPolicy> for the legislative history of all designated wilderness.

For wilderness that is in one of the other categories such as eligible, proposed, or recommended, summarize the history of wilderness study and identify the map and acreage that comprise the most recent official recommendation (the farthest point along in the study process).

Relationship to other plans and programs relevant to wilderness stewardship

The park’s wilderness program needs to be developed in careful coordination with other park management programs and initiatives. This section of the plan will describe that coordination. Discuss the relationship of the wilderness stewardship plan to other existing plans, especially the general management plan and the resource stewardship strategy, if they have been completed. Reference or include the park’s mission/purpose and significance or foundation document. Include a discussion of the management direction for wilderness within the general management plan and/or resource stewardship strategy. List other plans or programs that have the potential to affect the administration and preservation of the wilderness (e.g., air tour management plan, fire management plan, exotic plant management plan, river use management plan, livestock management plan) and how these relate to the wilderness stewardship plan. Summarize how the park is going to consider any potential impacts to wilderness described in these plans and vice versa. (See chapter 3 of the *User Guide* for a more detailed discussion about how some of these other plans relate to wilderness character). Briefly describe the history of any backcountry or wilderness planning that has taken place in the park, including any associated NEPA analysis. List previous backcountry or wilderness plans along with approval dates and the current plan (if any) the park is using to manage the wilderness.

Legal and policy requirements related to wilderness stewardship

Briefly explain uses (e.g., grazing rights, inholdings, mines, and other nonconforming uses) that are allowed by valid authorities but which may conflict with the public's general understanding of how wilderness areas are to be managed. Consider the outline topics below and include only those that apply to this wilderness. There may be other topics to add:

- *Other statutes affecting the park wilderness*—Only identify specific legislation that has a direct effect on the wilderness resource. The point is to inform the reader about the existence of these statutes and perhaps the specific legislative section that will affect wilderness, not to recite the entire law. For Alaska parks, explain the rights authorized by the Alaska National Interest Lands Conservation Act as these apply to this wilderness. This may guide a considerable part of a wilderness stewardship plan.
- *Other jurisdictional influences*—If other federal, state, or county agencies have any jurisdictional authority within the wilderness, briefly identify these agencies and the nature of this authority. For example, does the local sheriff have the authority to conduct search and rescue operations within the park? Is this wilderness under a U.S. Coast Guard or military air operations zone? Are there any memoranda of understanding with other entities that affect wilderness management? If no other agencies have such an authority, skip this section.
- *Reference to NPS Management Policies 2006 / Director's Order 41*—Only reference the existence of these documents, particularly considering they may be updated or revised during the life of the wilderness stewardship plan. There is no need to repeat all applicable sections of *Management Policies 2006* and Director's Order 41. The point of this section is to inform the reader that these documents exist and have a direct effect on how the National Park Service is to administer and preserve wilderness.
- *Other preexisting factors affecting the park's wilderness*—If there are conditions or situations that affect the park wilderness that were not addressed above, briefly describe these conditions here. Remember, however, that these conditions must be based on a valid legal authority. Do not attempt to justify past illegal (unauthorized) practices. Clearly recognize and articulate the established right of an individual or group to conduct specific authorized activities within the wilderness, including what the individual permittee can and cannot do in exercising that right.
- *Inholdings and retained rights*—Describe the number and type of inholdings or retained rights that are preexisting and/or authorized by the legislation that established the park or wilderness. Explain any legal special provisions for exercising these rights. Some common types of retained rights in wilderness are described in section 4(d) of the Wilderness Act and are described in more detail in the sub-bullets below:
 - » *Grazing permits*—Describe the authority that mandates or allows any valid, existing grazing leases. For each lease, describe the number of livestock involved, the annual grazing period, and any significant terms of the permit, regarding for example, equipment left in the wilderness or motorized access. Clearly demonstrate the specific authority for motorized vehicles or equipment. Describe how leases will be monitored and conditions for their renewal.

- » *Mining claims*—List the claims or interests and their specific locations. Give any history of use or development of the claims or rights. When was the validity exam completed, or if not, what is the status of the claims? Has there been a plan of operation applied for or filed? If a plan of operation was filed and approved, explain in this section any motorized uses within wilderness or any special provisions for access that are authorized as conditions of the plan. Also describe all actions that have been authorized and taken to extinguish the mineral rights within the wilderness, if applicable.
- » *Native American rights*—Describe any specific rights and/or privileges authorized for Native Americans within the wilderness. Explain any prior agreements requiring renewal or management. If the uses or rights were not specifically authorized for this wilderness but are authorized under a broader authority, list those uses, their authorities, and why and how they will be allowed to occur in wilderness. An example might be access to areas of the park for the performance of traditional religious ceremonies.
- » *Rights-of-way*—Describe any legal right-of-way that exists in wilderness and any legally mandated activities within the right-of-way.
- » *Other existing rights*—Use this section to describe private parcels, cabins, airstrips, or other types of preexisting rights under a management agreement not already described. It may be helpful to map these locations.

Scope of the Plan

Planning issues addressed

The issues and opportunities that were generated during internal and public scoping are part of this section. Consider categorizing the issues and opportunities list by the qualities of wilderness character, as suggested in table 7. These are possible topics a plan may address, but the table is neither a list of all possible topics nor a checklist of topics that must be included. More detailed information about how to address specific topics in a wilderness stewardship plan and relate them to the wilderness character framework can be found in appendix 4.

Photo: NPS/Karin Messaros,
Joshua Tree Wilderness,
Joshua Tree National Park



Table 7. Potential planning issues and topics arranged by quality of wilderness character.

<p>Natural – Wilderness ecological systems are substantially free from the <i>effects</i> of modern civilization.</p> <ul style="list-style-type: none"> • Fire management • Invasive nonnative plant treatment • Other natural resource management (e.g., endangered species, wildlife, aquatic resources, air resources, water quality) • Climate change • Fragmentation and loss of connectivity to surrounding landscape
<p>Untrammeled – Wilderness is essentially unhindered and free from the intentional <i>actions</i> of modern human control or manipulation.</p> <ul style="list-style-type: none"> • Authorized natural resource conservation and restoration activities in wilderness • Unauthorized actions such as poaching of plants or animals, stocking or artificially augmenting fish or game species (e.g., impoundment of water to attract and concentrate wildlife)
<p>Opportunities for Solitude or a Primitive and Unconfined Recreation – Wilderness provides outstanding opportunities for solitude or primitive and unconfined recreation (Note: all issues and developments related to recreational uses are included here).</p> <ul style="list-style-type: none"> • Visitor experience (including solitude, risk, and challenge), indicators and standards (may be different than opportunities for solitude or primitive and unconfined recreation) • Visitor use management through regulations and permits (e.g., group size, reservation systems, campfires, rules) • Recreational facilities (e.g., trailheads, campsites, wilderness routes and trails, signs and route markers, toilets) • Climbing, canyoneering, and mountaineering management, protocols • Commercial services (e.g., necessary and appropriate per <i>NPS Management Policies 2006</i>, chapter 10, “Commercial Visitor Services,” extent necessary to realize the purposes for which the wilderness area was established, allocation between public and private use) • Accessibility for persons with disabilities • Interpretation and education within the wilderness • Human waste management • Food protection systems • Stock use (e.g., type, location, conditions) • Natural soundscape protection • Night sky management • Viewshed protection • Hunting, trapping, and fishing • Special events • Emerging uses and technology • Overflights • Remoteness from sights and sounds of people inside wilderness • Remoteness from sights and sounds of people outside wilderness, including viewshed impacts
<p>Undeveloped – Wilderness retains its primeval character and influence, and is essentially without permanent improvement or modern human occupation (Note: only developments that are not primarily for a recreation purpose or use are included here).</p> <ul style="list-style-type: none"> • NPS administrative facilities (e.g., communication equipment, other equipment, cabins, ranger stations, fire lookouts, other structures) • NPS administrative activities (e.g., emergency services, law enforcement, staff organization and accountability, trail maintenance, tree clearing, risk management and safety, standard operating procedures, application of minimum requirements process) • Scientific activities and research (e.g., permits, management of activities, equipment) • Management of pre-existing factors affecting the wilderness unit (e.g., inholdings and retained rights, mining claims, grazing permits and structures, Native American rights and access, rights-of-way)
<p>Other Features of Value – Wilderness preserves other tangible features that are of scientific, educational, scenic, or historical value.</p> <ul style="list-style-type: none"> • Cultural resource management (i.e., what is the relationship of cultural resources and this wilderness, including archeological sites, cultural landscapes, ethnographic resources, and historic structures?) • Paleontological resource management (i.e., management of research and collection techniques, visitor use management at sensitive sites)

Other Topics

- Education and outreach (e.g., programs in schools, universities, communities, virtual communities)
- Cooperative management of jointly managed areas
- Relationships with private and public organizations and government agencies
- Strategies for pursuing designation of eligible, proposed and recommended wilderness
- Inclusion of wilderness eligibility assessment for lands within park boundary not assessed
- Strategies for rehabilitation of potential wilderness additions
- Amendment to eligible, proposed, or recommended wilderness
- Application of the minimum requirements process to eligible, proposed, and designated wilderness

Planning issues considered but not addressed

If there are certain issues or impact topics identified by the public or the interdisciplinary team that will not be affected or for some reason will not be addressed in this plan, they should be briefly described here along with the reason(s) that they are being dismissed. This is also the section used to describe issues that the wilderness stewardship plan will not address because they are outside the scope of the planning process (e.g., renegotiating existing grazing rights, building new roads). If the park has a controversial site related to wilderness that will be addressed in a site-specific plan, state that here. Also, if backcountry is not included in this plan, state the reasons why and describe how and when the management of those lands has been or will be addressed in a separate planning effort.

Impact Topics

Describe the impact topics selected based on in-house and public scoping. Describe only those resources that may be impacted if the proposed action or the alternatives are implemented. They need no further description in this section; this is only a list. Include wilderness character as an impact topic to address. If there are certain issues or impact topics identified by the public or the interdisciplinary team that will not be affected, or for some reason will not be addressed in this plan, they should be briefly described here along with the reason(s) they are being dismissed. Generally, anticipated impact levels that are minor or negligible may be dismissed from detailed analysis. (See the *DO-12 Handbook* for more information).



Photo: Gavin Emmons,
Pinnacles Wilderness,
Pinnacles National Park

Chapter 2: Alternatives

The purpose of chapter 2 is to describe the plan proposal and alternatives that will achieve the goals and objectives for wilderness stewardship identified in chapter 1. This chapter includes discussion of the range of reasonable alternatives, any proposed mitigation measures, and a summary of impacts for each alternative. To the greatest extent possible, alternatives should be presented in a similar format to facilitate comparison. One format to consider is:

1. Guiding philosophy or theme (e.g., maximize the untrammelled quality, restore naturalness, improve opportunities for solitude)
2. Overall actions (regardless of zone and those addressing major issues and concerns)
3. Zone descriptions (e.g., desired conditions, especially concerning the qualities of wilderness character; indicators; measures; standards; management actions)
4. Map of the application of zones and other management actions

No Action

This alternative describes the current wilderness management direction and situation. In keeping with the *DO-12 Handbook*, identify the “no action” alternative as the first alternative in the plan environmental assessment or environmental impact statement. Describe this alternative using as similar a format as possible as that for the other action alternatives to aid in comparison across the various alternatives. A park may not have existing management zoning for wilderness stewardship, and if not, there is no need to create it for the “no action” alternative. If continuing any ongoing management would violate laws or policies, this should be noted in this section.

Action Alternatives, Including the Proposed Alternative

As previously noted, a reasonable range of action alternatives that meets goals and objectives and addresses issues and opportunities should be developed and presented. The preferred or proposed action alternative should be clearly identified in the title. Actions can vary by zone or by alternative. Some actions may be the same for all zones or for all alternatives. As a result, there are different locations where actions can be presented within the environmental assessment / environmental impact statement:

- If an action doesn’t relate to zone descriptions but varies by alternative, it can be placed under a section for “Overall Actions” for the alternative.
- If an action varies by zone, it should be placed in the “Zone Descriptions.”
- If an action doesn’t vary by zone but is the same for all alternatives, it can be placed in a section for “Management Actions Applicable to All Alternatives Except the No Action Alternative.”

Determine the best format and location within the environmental assessment / environmental impact statement for describing actions so that an understanding of each alternative and the differences between alternatives is clear. Find a balance between presenting complete information for each alternative and excessive repetition. Include maps for zone allocation and proposed changes to visitor facilities or opportunities (e.g., adding a new trailhead, removing a trail). The complete framework of indicators, measures, standards, and management actions should be summarized in a matrix, with more complete information included as an appendix.

Administration and Implementation

An important part of the plan is the development of administrative procedures to integrate wilderness character into park operations, and a strategy for implementation (see Part I of the *Handbook* for more guidance). Those sections could be included in this chapter (especially if they vary by alternative), or provided in appendixes. Also include costs for implementing the plan.

Alternatives Considered But Dismissed

The Council on Environmental Quality has defined “reasonable alternatives” to mean those that are economically and technically feasible and show evidence of common sense. This allows the park to eliminate from further consideration those alternatives that could not be implemented if they were chosen, and those that did not resolve the need for the proposed action(s) or the stated purpose of the wilderness stewardship plan. Environmental assessments and environmental impact statements should include a section discussing alternatives that were considered but rejected and briefly explain the reasons for this elimination.

Be careful! While it is not appropriate to generate weak or infeasible alternatives, the Council on Environmental Quality also cautions that agencies should not pare down the list of alternatives to only those that are cheap, easy, or simply the park’s favorite way of doing business. Additionally, some alternatives may be eliminated as the NEPA process progresses. For example, if initial impact analysis shows that a technically or economically feasible alternative would have profound adverse environmental impacts, it should be eliminated as “environmentally unfeasible.”



Photo: NPS/Peter Landres, Gates of the Arctic Wilderness, Gates of the Arctic National Park and Preserve

Mitigation Measures

Mitigation measures are practical and appropriate methods that would be used under the action alternatives to avoid or minimize harm to wilderness character and other impact topics. These measures are developed using existing laws and regulations, best management practices, conservation measures, and other known techniques. Mitigation measures are different from “Actions Common to All Alternatives.” These measures should focus on requirements that are specifically implemented to avoid, minimize, or mitigate the negative impacts of the alternatives. Note that mitigation measures to avoid adverse effects to cultural resources under the National Historic Preservation Act will require a memorandum of agreement with the state historic preservation officer and possibly the Advisory Council on Historic Preservation, which must be signed before the Finding of No Significant Impact can be signed (see 36 CFR 800 for more details). Additional consultation with traditionally associated tribes and/or a tribal historic preservation officer may be needed as well. Similarly, the mitigation and conservation measures for the protection of federally listed threatened and endangered species is typically identified in a separate but parallel process of consultation with the U.S. Fish and Wildlife Service. Their biological opinion must be completed prior to the FONSI signing. For more information, see the *DO-12 Handbook*.

Photo: NPS, Issuing a wilderness permit, Yosemite National Park



Environmentally Preferable Alternative

The environmentally preferable alternative (as described in the planning process) is fully documented in this section. The environmentally preferable alternative may not be the optimal alternative for preserving wilderness character. For more information, see the *DO-12 Handbook*.

Summary and Comparison of Alternatives and Impacts

The plan environmental assessment/environmental impact statement should include a summary that compares and summarizes:

- the degree to which each alternative meets the purpose, need and goals of the plan
- the important features of each alternative
- the impacts of each alternative, including a determination of potential improvement to park resources (this is a specific requirement of an environmental assessment and environmental impact statement)
- a description of how each alternative achieves the requirements of Section 101 and 102 of the National Environmental Policy Act (a required element in an environmental impact statement)
- any trade-offs needed (e.g., natural and untrammelled)

The easiest way to present this information is through the use of matrices, or charts, that provide the reader with a clear comparison of each alternative.

Chapter 3: Affected Environment

This chapter describes the existing natural and human components of the environment that will be affected by the implementation of any of the alternatives. In the National Environmental Policy Act, “affected environment” means resources expected to experience environmental impacts, including the consequences of not taking action. Describe only those resources that may experience or cause impacts if the proposal or alternatives are implemented. In an environmental impact statement there are a number of topics that are mandatory to consider, such as wetlands / floodplains, prime agricultural lands, sacred sites, and others. If these are not affected, they would be addressed in chapter 1 of the wilderness stewardship plan under “Impact Topics Considered and Dismissed.” For more complete information, see the *DO-12 Handbook*.

Introduction

Describe what will be discussed in this chapter and if necessary, briefly provide some regional context (see Part I of the *Handbook* for more detail).

Impact Topics

For each of the identified impact topics, concisely describe the resource and its condition based upon accurate and adequate data for analyzing impacts. Keep in mind that many of these topics interact and important aspects of natural resources, such as disturbance, succession, rare species, etc. are often overlooked.

Some common impact topics for a wilderness stewardship plan are:

- Wilderness character, including each quality of wilderness character
- Soils
- Vegetation
- Wildlife
- Threatened and endangered species
- Water resources
- Natural soundscapes
- Night skies
- Archeological resources
- Historic structures
- Ethnographic resources
- Cultural landscapes
- Museum collections
- Visitor use and experience
- Park operations
- Socioeconomic environment (in addition to typical analysis of visitor spending and economic impact of tourism and commercial services, this section should consider including the “nonmarket” value of wilderness, ecosystem services, etc.)

More information about integrating wilderness character and NEPA requirements into the planning process, including analyzing impacts, can be found in chapter 4 of the *User Guide*.

Wilderness character should be an impact topic in every wilderness stewardship plan. Define the qualities of wilderness character using the definitions in *Keeping It Wild*, and then organize the description of wilderness character according to these qualities:

- Untrammeled
- Natural
- Undeveloped
- Solitude or a Primitive and Unconfined Type of Recreation
- Other Features of Value

Strive to avoid overlap or redundancies among the descriptions of wilderness character qualities and other impact topics. Using the park’s wilderness character narrative, one of the foundational building blocks for wilderness planning, should be helpful in writing this section.

Chapter 4: Environmental Consequences

This section describes potential environmental consequences, including beneficial and negative effects associated with the “no action” alternative and others. For each impact topic, discuss methodologies and assumptions for assessing environmental consequences, including consideration of context, intensity, and duration of impacts; cumulative impacts; and measures to mitigate impacts. This is the typical organization:

Methodology

- » Impact Topic 1 – impact intensity thresholds for negligible, minor, moderate, and major
- » Impact Topic 2 – impact intensity thresholds for negligible, minor, moderate, and major
- » Impact Topic 3 ...etc.

Alternative 1 – No Action

- » Impact Topic 1 – impact analysis, cumulative effects, conclusion
- » Impact Topic 2 – impact analysis, cumulative effects, conclusion
- » Impact Topic 3 ...etc.

Alternative 2 – Preferred

- » Impact Topic 1 – impact analysis, cumulative effects, conclusion
- » Impact Topic 2 – impact analysis, cumulative effects, conclusion
- » Impact Topic 3 ...etc.

Alternative 3

- » Impact Topic 1 – impact analysis, cumulative effects, conclusion
- » Impact Topic 2 – impact analysis, cumulative effects, conclusion
- » Impact Topic 3 ...etc.



Photo: NPS, Recommended wilderness in Assateague Island National Seashore



Photo: NPS, Theodore Roosevelt Wilderness, Theodore Roosevelt National Park

Alternatively, the information can be organized by impact topic, with each alternative nested within the impact topic. This allows for more direct comparison of impacts between alternatives and the opportunity for the description to highlight the differences and reduce redundancy in the text:

Impact Topic 1

- » Methodology
- » Alternative 1 – impact analysis, cumulative effects, conclusion
- » Alternative 2 – impact analysis, cumulative effects, conclusion
- » Alternative 3 ...etc.

Impact Topic 2

- » Methodology
- » Alternative 1 – impact analysis, cumulative effects, conclusion
- » Alternative 2 – impact analysis, cumulative effects, conclusion
- » Alternative 3 ...etc.

Impact Topic 3

- » Methodology
- » Alternative 1 – impact analysis, cumulative effects, conclusion
- » Alternative 2 – impact analysis, cumulative effects, conclusion
- » Alternative 3 ...etc.

An optional organizational format for an environmental assessment (but not for an environmental impact statement) is to combine the “Affected Environment” section with the environmental consequences, and then follow the second format described above. An impairment analysis is only completed for the preferred alternative and is included in the Finding of No Significant Impact. More complete information about writing environmental consequences can be found in the *DO-12 Handbook* and by consulting with a regional environmental coordinator or the WASO Environmental Quality Division. See chapter 4 of the *User Guide* for additional guidance establishing impact thresholds specific to wilderness character.

Chapter 5: Consultation and Coordination

This section of the plan documents and summarizes the consultation and coordination that occurred during the planning process. It should include:

- Public involvement—scoping, meeting dates, locations, number of attendees, newsletters, web sites, other contacts, level of participation, and a summary of public comments.
- Consultation with other agencies and organizations—list of contacts, meetings, and a summary of agency and organizational concerns. Include official consultation letters such as those with the U.S. Fish and Wildlife Service and/or the National Oceanic and Atmospheric Administration regarding threatened and endangered species, and with the state historic preservation office concerning the National Historic Preservation Act in the appendixes.
- Tribal consultation—list of contacts, outreach, meeting dates, locations, number of attendees, and a summary of issues and concerns. Tribal consultation can be both informal and formal government-to-government consultation. Formal government-to-government consultation is between the tribal chair / chief and the superintendent (who has delegated authority), or other representatives officially delegated by the tribal chair / chief. Carefully document this government-to-government consultation and correspondence and include it in an appendix. Also consider including informal consultation with tribal members who actively use or live on wilderness lands, tribal resource managers, or spiritual leaders who may have more local knowledge of resources. This does not, however, substitute for formal intergovernmental consultation.

An environmental impact statement has additional requirements for listing officials, agencies, organizations, and individuals who received a copy of the document. An environmental impact statement also requires that comments be summarized and responses to substantive comments be included. A list of preparers can be included in this section or at the end of the document. For an environmental impact statement, include background information about the preparers (i.e., number of years of federal and related service, degrees earned).

References

Provide a bibliography of references cited, as well as a glossary of terms and acronyms.

Appendixes to Plan

A. Legislation or Study

For designated wilderness, include the wilderness legislation, or selected sections if part of a large omnibus bill. For other categories of wilderness, include the latest “official” map depicting these areas.

B. Matrix of Indicators, Measures, Standards, and Management Actions to Preserve Wilderness Character

Include the matrix with the details of the action alternatives’ elements (indicators, measures, standards, management actions) here or in chapter 2 of the document.



Photo: NPS, Olympic
Wilderness, Olympic
National Park

C. Other Appendixes As Needed

Some of the appendixes that have been included in recent wilderness stewardship plans are listed below with the relevant park(s) listed in parentheses:

- Wilderness minimum requirements decision analysis process (Death Valley, Black Canyon, Zion)
- Wilderness education strategy (Death Valley)
- Wilderness character monitoring strategy (Death Valley)
- Framework for evaluating scientific activities in wilderness (Death Valley and Black Canyon)
- Framework for evaluating commercial services and special park uses in wilderness (Death Valley, Black Canyon, Zion)
- Climbing Management Plan (Black Canyon)
- Floodplains Statement of Findings (Zion)

Index

An index is required for an environmental impact statement.

A photograph of a waterfall in a dense forest. The water is white and foamy as it falls over dark, moss-covered rocks. The surrounding vegetation is vibrant green, with sunlight filtering through the leaves. The overall scene is serene and natural.

REFERENCES AND APPENDIXES

One touch of nature makes the
whole world kin.
—William Shakespeare

Photo: NPS/Barb Stewart,
Shenandoah Wilderness,
Shenandoah National Park



Photo: NPS/Daniel Silva, Shenandoah
Wilderness, Shenandoah National Park

SELECTED REFERENCES

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2007 "Toward an Understanding and Definition of Wilderness Spirituality." *Australian Geographer* 38:53–69.
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2001 "Thoreau, Leopold, and Carson: Toward an Environmental Virtue Ethics." *Environmental Ethics* 22:3–17.
- Cordell, K.H., J.C. Bergstrom, and J.M. Bowker, editors
2005 *The Multiple Values of Wilderness*. Venture Publishing, State College, PA.
- Landres, P., C. Barns, J.G. Dennis, T. Devine, P. Geissler, C.S. McCasland, L. Merigliano, J. Seastrand, and R. Swain
2008 *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System*. General Technical Report RMRS-GTR-212. U.S. Forest Service, Rocky Mountain Research Station, Fort Collins, CO.
- National Park Service (NPS)
1997 *VERP: The Visitor Experience and Resource Protection Framework: A Handbook for Planners and Managers*. Denver Service Center: Denver, CO.
- Stankey, G.H., D.N. Cole, R.C. Lucas, M.E. Petersen, and S.S. Frissell
1985 *The Limits of Acceptable Change (LAC) System for Wilderness Planning*. General Technical Report INT-176. U.S. Forest Service, Intermountain Forest and Range Experiment Station, Ogden, UT.

APPENDIX 1–WILDERNESS STEWARDSHIP PLAN CHECKLIST

Quality and Completeness

- Identifies and addresses goals, objectives, relevant issues and opportunities
- Prepared by interdisciplinary team with appropriate expertise
- Prepared with relevant, current, and accurate data
- Conforms with wilderness law and policy
- Fully integrates the concept of wilderness character

Consultation and Coordination

- Adequate public involvement
- Adequate agency consultation
- Adequate tribal consultation

Wilderness Stewardship Plan Content

- Goals and objectives
- Issues and opportunities
- Background, including legislation or study status, special provisions
- Alternatives that address the goals, objectives, issues, and opportunities
- Preferred alternative that best achieves the goals, objectives, issues, and opportunities
- Management framework – parkwide or by zone
 - Desired conditions
 - Measures
 - Standards
 - Management actions
- Process for implementing minimum requirements analysis
- Implementation strategy

Compliance

- Summary
- Purpose and need
- List of planning issues to be addressed and issues not considered
- Impact topics retained, dismissed
- Range of alternatives, including no action and identification of preferred
- Environmentally preferable alternative
- Mitigation measures
- Summary table of alternatives and impacts
- Affected environment for impact topics, including wilderness character
- Impact analysis that meets current DO-12 requirements
- Wilderness character impacts analyzed with the four qualities, and fifth if applicable
- Completed section 7 Endangered Species Act consultation, if appropriate
- Completed section 106 National Historic Preservation Act consultation, if appropriate
- Completion of other required compliance for specific impact topics (e.g., wetlands)
- Consultation and coordination
- Substantive comment letters (or a summary) in a final environmental impact statement
- Preparers
- Bibliography
- Decision document (Finding of No Significant Impact or Record of Decision)

APPENDIX 2.1—WHERE TO GO FOR MORE INFORMATION: REFERENCES AND EXAMPLES

Table 8. Where to go for more information about Handbook topics.

Topics	Sources
Scoping, project agreements, public involvement, consultation, developing alternatives, preparing environmental documents, and identifying a preferred alternative	<ul style="list-style-type: none"> • NPS <i>General Management Planning Dynamic Sourcebook</i> • Director's Order 75A: <i>Civic Engagement and Public Involvement</i>
Visitor use measures, standards	<ul style="list-style-type: none"> • NPS <i>General Management Planning Dynamic Sourcebook</i> • <i>Visitor Experience and Resource Planning Handbook</i>
National Environmental Policy Act and preparation of environmental documents	<ul style="list-style-type: none"> • NPS Director's Order 12: <i>Conservation Planning, Environmental Impact Analysis, and Decision-making and the DO-12 Handbook</i> • <i>Interim Guidance Director's Order 12 Categorical Exclusions</i>
Building blocks: Basic wilderness information, wilderness character narrative	<ul style="list-style-type: none"> • Chapter 2: <i>Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring</i>
Integrating wilderness character into planning: park foundation documents, general management plans, resource stewardship strategies, long range interpretive plans, exotic plant management plans, climbing management plans, fire management plans, climate change planning	<ul style="list-style-type: none"> • Chapter 3: <i>Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring</i>
Using wilderness character in management: minimum requirements decisions, science and research activities, addressing wilderness character in compliance documents, commercial services, maintenance activities, search and rescue, law enforcement, and wildland fire, interpretation, resource management activities, cultural resources, training for park staff	<ul style="list-style-type: none"> • Chapter 4: <i>Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring</i>
Tracking change in wilderness character: identifying and prioritizing measures, gathering baseline data, entering data into the wilderness character database application	<ul style="list-style-type: none"> • Chapter 5: <i>Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring</i>
Other tools: Mapping wilderness character, wilderness commercial services evaluation	<ul style="list-style-type: none"> • Chapter 6: <i>Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring</i>

Useful Links

NPS Policies and Reference Manuals

Check online at the NPS Office of Policy for the latest versions of management policies, director's orders, and related documents at <http://www.nps.gov/applications/npspolicy/index.cfm>:

NPS *Management Policies 2006*, chapter 2, "Park System Planning," and chapter 6, "Wilderness Preservation and Management"

- NPS Director's Order 41: *Wilderness Stewardship*, 2013
- NPS *Reference Manual 41: Wilderness Stewardship*, 2013
- *NPS-28: Cultural Resource Management Guideline* (June 11, 1998)
- *General Management Planning Dynamic Sourcebook*, (part of Director's Order 2), version 2.1, March 2008 as revised
- NPS Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making and DO-12 Handbook*
- NPS Director's Order 75A: *Civic Engagement and Public Involvement* (August 30, 2007)

Resources at the NPS Wilderness Character SharePoint site

(<http://share.inside.nps.gov/sites/WASO/WSD/WC>):

- *Keeping It Wild: An Interagency Strategy to Monitor Trends in Wilderness Character Across the National Wilderness Preservation System*. 2008. Landres, P., C. Barns, J.G. Dennis, T. Devine, P. Geissler, C.S. McCasland, L. Merigliano, J. Seastrand, and R. Swain. General Technical Report RMRS-GTR-212. USDA Forest Service, Rocky Mountain Research Station, Fort Collins, CO
- *Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring* (2014)
- New and emerging examples of wilderness building blocks, wilderness stewardship plans

Other Key Publications:

- *VERP: Visitor Experience and Resource Protection Framework: A Handbook for Planners and Managers*. 1997. Belnap, J., W.A. Freimund, J. Hammett, J. Harris, M. Hof, G. Johnson, D.W. Lime, R.E. Manning, S.F. McCool, M. Rees. National Park Service, Denver Service Center: Denver, CO

Training

On-line training for wilderness stewardship planning offered by the Arthur Carhart National Wilderness Training Center can be found under "Training" at <http://wilderness.net/NWPS/training>. There is free enrollment for online courses. There are a number of courses offered including "The Wilderness Act of 1964," "Minimum Requirements Analysis," "Cultural Resources," "Paleontology," and in particular for wilderness stewardship planning, the two courses described below. Note that this training was developed before integration of the *Keeping It Wild* wilderness character framework, and the *Handbook* contains the more recent material.

- *Wilderness Stewardship Planning Framework*—This course contains nine modules designed to assist in understanding, developing and selecting management action alternatives and in implementing an action plan. Prerequisite: The Wilderness Act of 1964. Recommended: Minimum Requirements Analysis.
- *Visitor Use Management*—This course contains nine modules organized in three sessions: fundamentals, strategies, and monitoring impacts and uses. Prerequisite: The Wilderness Act of 1964. Recommended: Minimum Requirements Analysis.

APPENDIX 2.2—EXAMPLES OF WILDERNESS STEWARDSHIP PLANNING

The following examples are available at the time of the publication of the *Handbook*. Check for emerging, more current examples at the NPS Wilderness Character SharePoint site at <http://share.inside.nps.gov/sites/WASOWSD/WC>.

Table 9. Examples of wilderness stewardship planning.

Plan	Notes
Apostle Islands <i>General Management Plan</i> <i>Wilderness Management Plan</i> <i>Environmental Impact Statement</i> August 2009	Example of combined general management plan and wilderness stewardship plan.
Black Canyon of the Gunnison National Park/ Curecanti National Recreation Area <i>Draft Wilderness / Backcountry Management Plan</i> <i>Environmental Assessment</i> August 2011	Combines backcountry and wilderness stewardship for the two park units into one plan; includes a climbing management plan and addresses commercial services.
Death Valley National Park <i>Wilderness and Backcountry Stewardship Plan and</i> <i>Environmental Assessment</i> August 2013	This effort has fully adopted wilderness character throughout the process and provides examples of tribal consultation, selection of measures, development of alternatives and cost estimates, and applying wilderness character mapping to planning. The plan also addresses historic structures and landscapes.
Denali National Park and Preserve <i>Final Backcountry Management Plan</i> <i>General Management Plan Amendment</i> <i>Environmental Impact Statement</i> January 2006	The summary notes that this plan also serves as a soundscape preservation and noise management plan, wilderness management plan, and commercial services plan for the backcountry.
Gates of the Arctic National Park and Preserve <i>Draft General Management Plan Amendment/</i> <i>Wilderness Study / Environmental Impact Statement</i> Internal Draft May 2012	This plan includes a wilderness study and wilderness character narrative and addresses the integration of wilderness character.
Jimbilnan, Pinto Valley, Black Canyon, Eldorado, Ireteba Peaks, Nellis Wash, Spirit Mountain, and Bridge Canyon Wilderness Areas, Clark County, Nevada <i>Draft Wilderness Management Plan</i> <i>Environmental Assessment</i> April 2008	This is an interagency plan with the Bureau of Land Management and addresses multiple wilderness units.
Joshua Tree National Park <i>Backcountry and Wilderness Management Plan, General</i> <i>Management Plan Amendment</i> <i>Environmental Assessment</i> January 2002	This plan combines wilderness and backcountry with a general management plan amendment and has a significant climbing component.
Lava Beds National Monument <i>Wilderness Management Plan</i> <i>Environmental Assessment</i> November 2006	A straightforward wilderness plan that closely follows the <i>2004 Wilderness Stewardship Plan Handbook</i> format and content. It generically incorporates the term wilderness character, but not the specific qualities.

Plan	Notes
Petrified Forest National Park <i>Wilderness Stewardship Plan / Environmental Assessment</i> February 2013	The plan describes the new wilderness stewardship framework and states that “Wilderness character is the framework’s unifying element and the foundation of all management decisions proposed in the plan.” The other features of value quality of wilderness character is identified in relation to the park’s paleontological resources.
Rocky Mountain National Park <i>Wilderness and Backcountry Management Plan Environmental Assessment</i> 2002	One of the first newer generation wilderness stewardship plans that was more than a visitor use plan.
Saguaro National Park <i>Comprehensive Trails Management Plan Environmental Assessment</i> 2009	This is not a wilderness stewardship plan, but has many aspects that are relevant for wilderness planning such as visitor use indicators and standards.
Zion National Park <i>Backcountry Management Plan Environmental Assessment</i> 2007	Backcountry plan with good examples of visitor use indicators, standards and management strategies.

APPENDIX 3—EMERGING IDEAS IN ANALYSIS: TOOLS FOR TEAMS

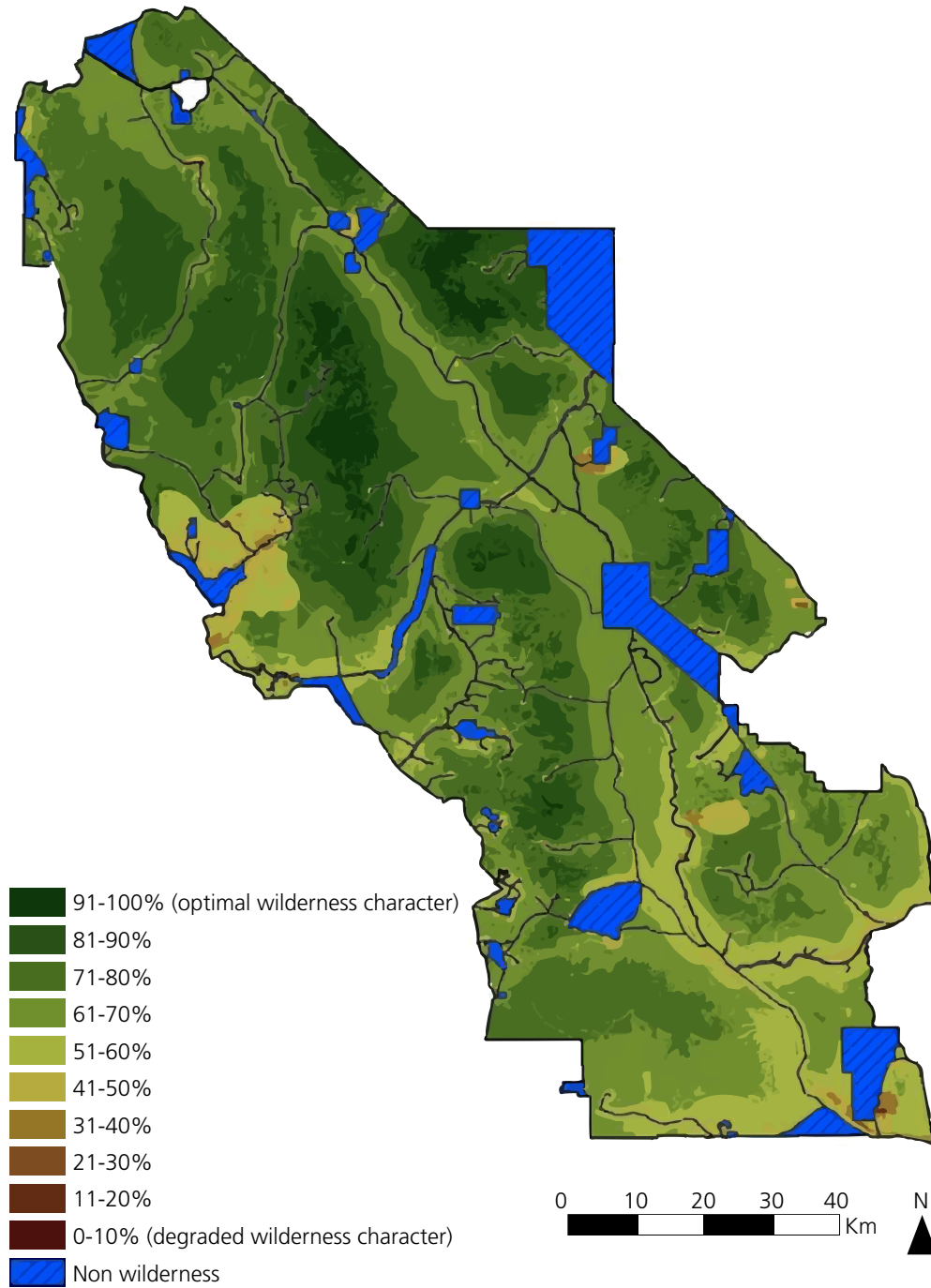
There are many new and emerging ideas about gathering, analyzing, and interpreting wilderness character data, and interdisciplinary teams at a park are encouraged to explore these tools.

As part of the wilderness stewardship planning effort at Death Valley National Park, wilderness character indicators and measures were put into a geospatial format to create a map of wilderness character (figure 2). Impacts to wilderness character from the four different plan alternatives were assessed using the wilderness character map. First the data inputs for each wilderness character indicator were evaluated and those that would be modified by the actions proposed in that alternative were changed to reflect the anticipated outcome 20 years in the future of implementing that alternative. Then each indicator was assessed for possible actions that would cause it to degrade, improve, or stay the same under each alternative, recognizing that some indicators would not be changed as a result of any of the alternatives identified in this plan (e.g., sources of air and light pollution that originate far beyond park boundaries). The mapped indicators were then compiled to represent their respective quality of wilderness character (untrammled, natural, undeveloped, and outstanding opportunities for solitude or primitive and unconfined recreation) for each of the four alternatives. The four maps of the four qualities were then compiled into one overall wilderness character map for each alternative. These data input changes, indicator maps, maps of each quality of wilderness character for each alternative, and the overall maps showing the combined four qualities were used to analyze and describe the anticipated impacts to wilderness character posed by each alternative, with specific consideration of where proposed actions would degrade or improve a quality of wilderness character.

Note that Death Valley wilderness character mapping was done prior to identifying the other features of value quality, so the mapping used only four qualities of wilderness character. However, during map development the park worked with the Timbisha Shoshone Tribe to identify areas of tribal interest using a similar mapping technique. While that was useful in gaining insights into tribal values of wilderness and place-based importance, it was ultimately dropped from the public documents at the request of the tribe. The technical report on the mapping process and outcomes is available on wilderness.net at <http://www.wilderness.net/toolboxes/documents/WC/Spatial%20model%20of%20wilderness%20character%20in%20Death%20Valley%20NP.pdf>.

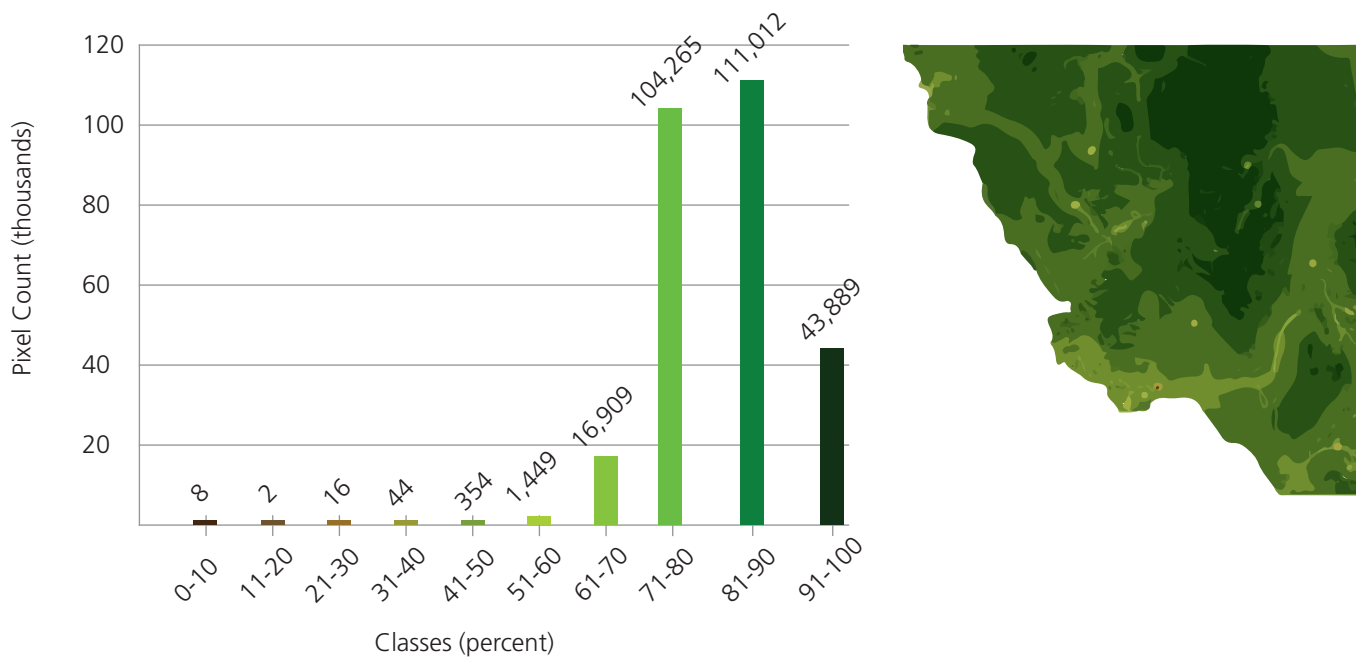
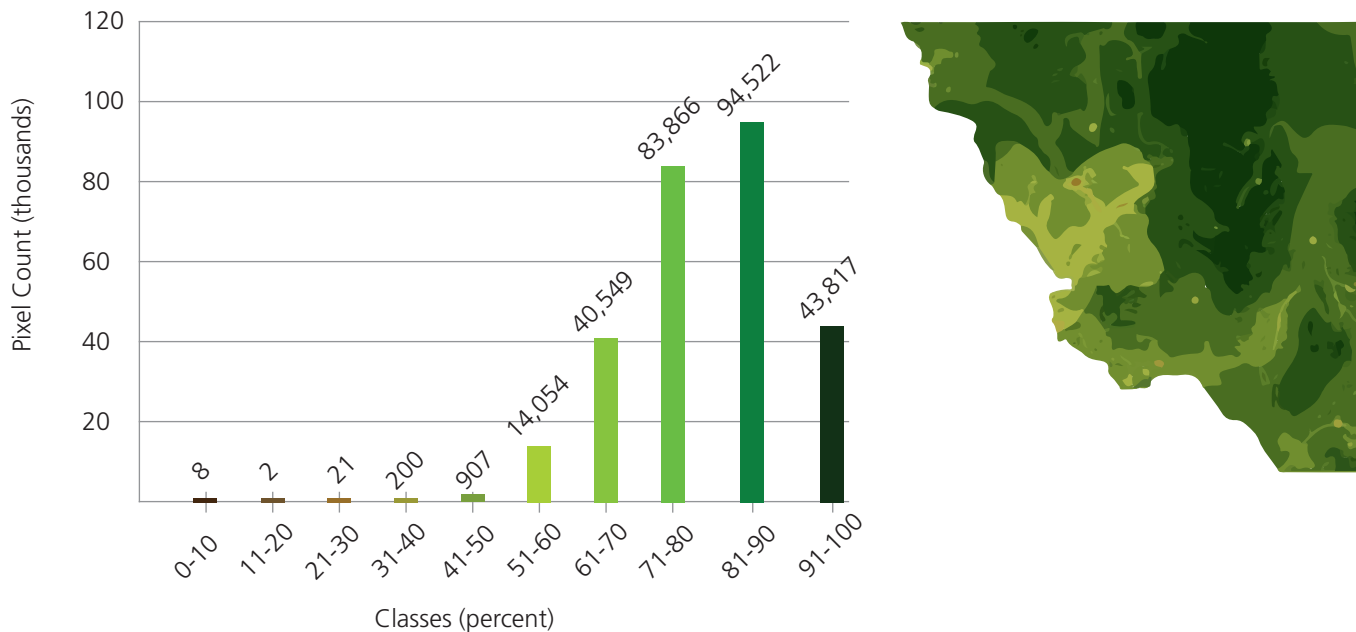
Analysis of the map products for planning could show, quantitatively, how wilderness character changes across different plan alternatives. For example, figure 3 shows a small section of Death Valley centered on a grazing allotment (the prominent light colored polygon on the left center of figure 2). The top half of figure 3 shows the current condition with the existing grazing allotment, and the bottom half of figure 3 shows this same area without the grazing allotment. The corresponding bar graphs for both scenarios in figure 3 show the number of pixels in each of the 10% categories, using the technique described in the capture of figure 2. The effect of closing the grazing allotment on wilderness character can be quantified by comparing the number of pixels in each of the different 10% bars under each of the different plan alternatives, as shown in figure 3.

FIGURE 2. WILDERNESS CHARACTER AT DEATH VALLEY WILDERNESS FROM THE COMBINED FOUR QUALITIES.



The scale divides all the pixels in this map into 10% categories, with the top 10% of pixels that are the least degraded in darkest green, and the bottom 10% of pixels that are the most degraded in darkest brown. The other features of value quality of wilderness character is not included as it was developed after Death Valley wilderness character mapping was completed.

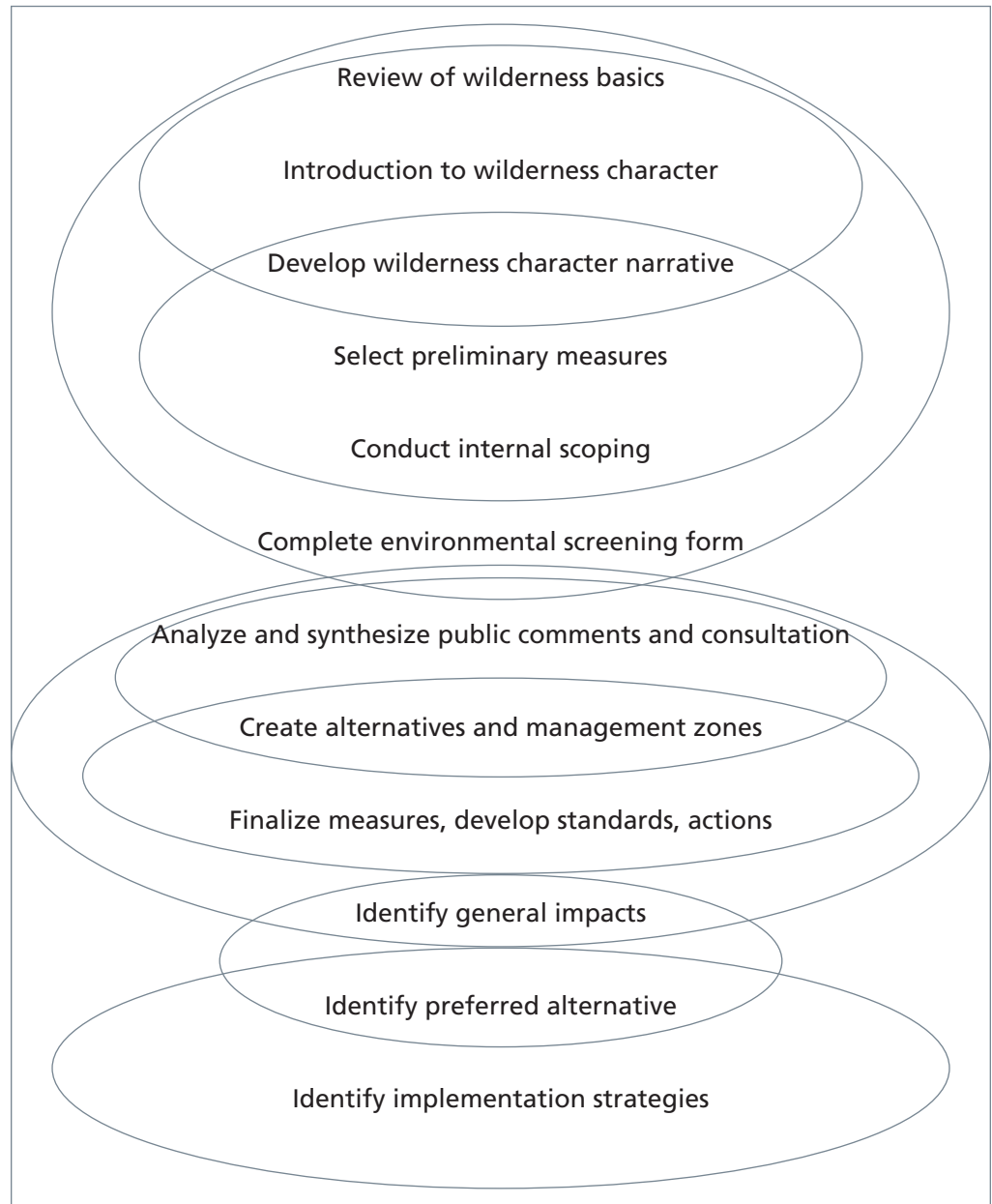
FIGURE 3. QUANTIFYING THE EFFECT OF DIFFERENT PLAN ALTERNATIVES ON WILDERNESS CHARACTER.



Workshops and team meeting topics

Gathering and organizing an interdisciplinary team is important and takes time. There are a number of steps where it is advisable to bring the team together in a meeting or workshop. For efficiency and effectiveness, it is possible to group some of these steps into one workshop. The figure below contains a list of workshop subjects and some possible combinations for workshops of one or more days. There is no single way to organize or group workshops and meetings. The circles in the figure illustrate some possible groupings of workshops. Sample agendas can be found at the NPS Wilderness Character SharePoint site at <http://share.inside.nps.gov/sites/WASO/WSD/WC>.

FIGURE 4. GROUPING WORKSHOP AND TEAM MEETING TOPICS.



Arrows exercise for wilderness character qualities

A technique to facilitate group discussion about wilderness character for application to wilderness stewardship plan development is the use of arrows to indicate where a park is along a continuum for each quality of wilderness character. In this exercise, two-ended arrows are drawn on large paper or a flip chart, one for each quality of wilderness character. The left end of the arrow represents the least or worst condition of the quality and the right end of the arrow represents the best or highest condition of the quality. At the beginning of this exercise, the group should review *Keeping It Wild's* description of the qualities and associated monitoring questions, indicators, and measures. The leader of the group facilitates a discussion of the existing condition of each quality, records a list of reasons for that condition, and seeks to develop consensus among the team to mark a point on the spectrum representative of the wilderness. Alternatively, each person in the group can be given a "sticky dot" to place on the spectrum. If there is a clustering of the dots, one can reach a conclusion that everyone has similar perceptions of the wilderness character quality. If the dots are scattered, it is illuminating to have a discussion about why there are such differences. Discussion and recording of the results can inform the wilderness character narrative and the description of wilderness character in the affected environment section of the wilderness stewardship plan. The outcome of this exercise is indicated by the dot on figure 5 labeled "Today."

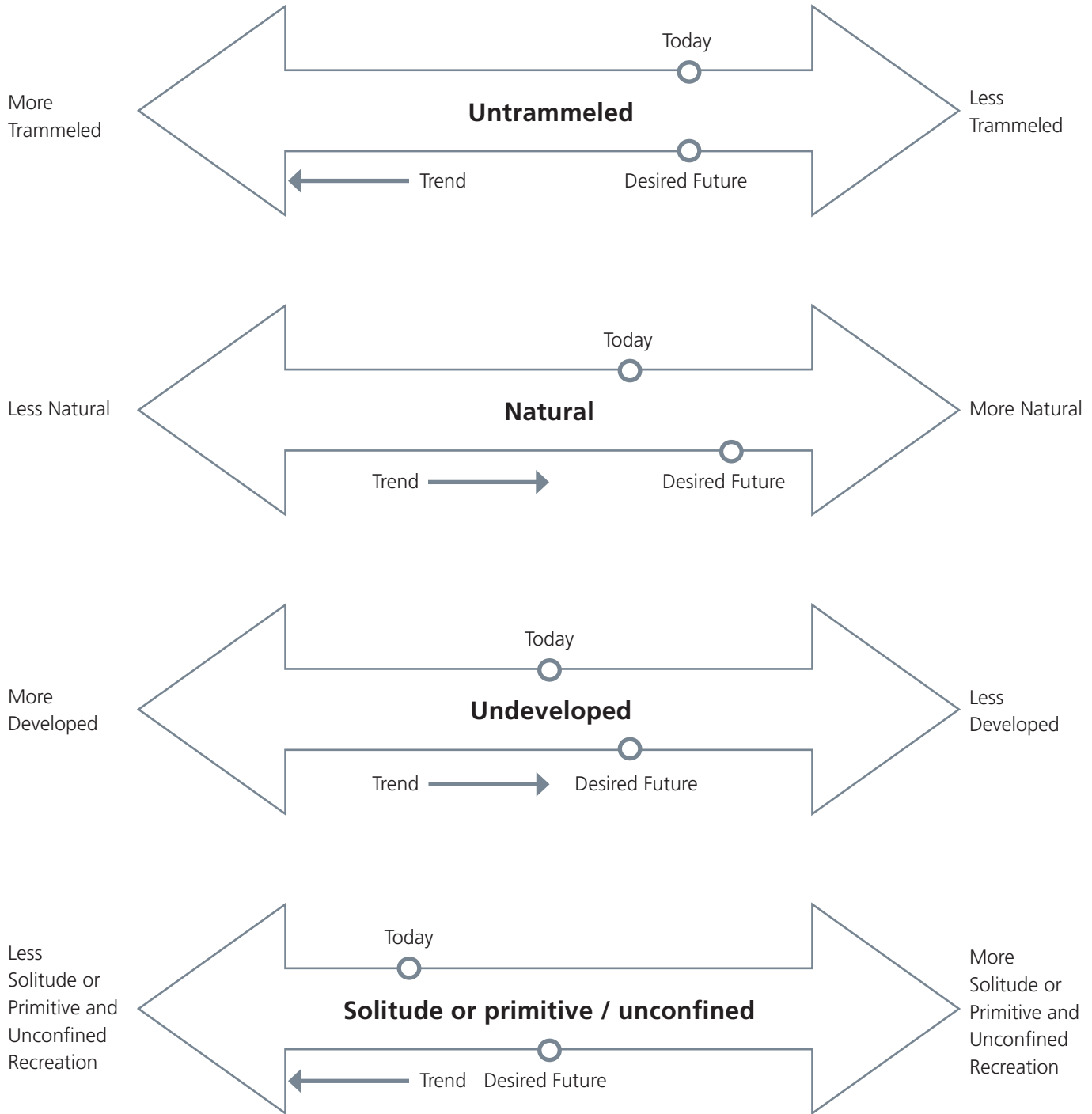
Another use of this exercise is in determining current and desired future conditions. The arrows can be used for a discussion of where the mark is heading (trends) under existing management (e.g., no action alternative), and where it realistically could be set for desired future outcomes of plan implementation. The outcome of this exercise is indicated by the dot on figure 5 labeled "Desired Future" and the arrow labeled "Trend." Another idea is to use this tool in the development of zones and their desired future conditions, such that the arrows are replicated for each zone.

Still another use of this exercise is in analyzing the likely outcomes of each alternative in order to inform the impact analysis and to help clarify the relative tradeoffs, costs, and benefits of each alternative relative to each quality of wilderness character. While the arrow diagrams themselves are primarily for internal use and communication within the IDT based on perception and best professional judgment, the discussion that comes from the exercise could be used to draft the text for environmental consequences for wilderness character as an impact topic. This can inform selection of standards and management actions in the plan.

This is a tool to inspire robust discussion and is not precisely calibrated...

...nor is it a mathematical or quantitative exercise

FIGURE 5. ARROW DIAGRAMS FOR WILDERNESS CHARACTER QUALITIES.



Note: Though the other features of value quality is not represented in figure 5, a similar technique could be applied to specific features that compose that quality. For example, the better or worse condition of cultural resources that contribute to wilderness character could be identified on the spectrum.

APPENDIX 4—ACTION TOPICS TO CONSIDER IN DEVELOPING A WILDERNESS STEWARDSHIP PLAN

This appendix provides a direct link between traditional action topics and wilderness character. A park can identify the issues and action topics that the wilderness stewardship plan should specifically address through setting goals and scoping. Many of these topics can be found in sections 6.3 and 6.4 of NPS *Management Policies 2006* where clear guidance is already established. Some of these topics may be addressed in other plans, such as a fire management plan or a trails plan. If these topics are adequately addressed by policy or in another current plan, there is usually no need to repeat policy or cite sections of another plan within the wilderness stewardship plan (provide cross-references if appropriate). When there is discretion within the policy or other plans and there is a need to state more specifically how the policy or plan will be applied to this wilderness and focus on preservation of wilderness character, more guidance may be developed in the wilderness stewardship plan.

Many actions related to these issues and topics may be addressed within the environmental assessment or environmental impact statement in “Actions Common to All Alternatives” where they apply across the board. Actions proposed for a park wilderness can also be described in alternative or zone descriptions when the action varies by alternative or zone. Within zones, some actions may help describe desired conditions, or establish measures and standards. Find the appropriate and most logical place in the plan to communicate the actions.

Every wilderness is unique, yet there are many issues or action topics that tend to recur in wilderness plans throughout the National Park Service. A list of potential action topics is provided here to consider in developing zones and alternatives. It is highly unlikely that any one park will need to include everything on this list. Further, this list is not all-inclusive and there may be additional topics that need to be addressed in a particular wilderness (e.g., integrated pest management, or hazardous materials). The wilderness stewardship plan needs to stay tightly focused on those topics most important to preserving wilderness character. For convenience, these potential action topics are divided into three major categories:

- RESOURCE MANAGEMENT (described in detail in appendix 4.1)

- Wildlife
- Fisheries Resources
- Vegetation Resources
- Soil Resources
- Air Resources
- Aquatic Resources
- Fire Management
- Natural Soundscapes
- Night Skies
- Viewsheds
- Archeological Resources
- Ethnographic Resources
- Historic or Prehistoric Structures
- Cultural Landscapes
- Museum Collections
- Paleontological Resources
- Climate Change

- VISITOR EXPERIENCE (described in detail in appendix 4.2)

- Visitor Use Management
- Risk and Challenge
- Campfires
- Stock Use
- Winter Use
- Access for Persons with Disabilities
- Hunting and Fishing
- Climbing, Mountaineering, and Canyoneering
- Watercraft
- Special Events
- Emerging Uses

- ADMINISTRATIVE ACTIONS AND FACILITIES (described in detail in appendix 4.3)
 - Emergency Services (SAR, EMS, LE)
 - Group Size
 - Use Permits and Reservation Systems
 - Administration of Scientific Activities
 - Rehabilitation and Revegetation
 - Interpretation and Education
 - Existing Valid Rights
 - Commercial Services and Special Park Uses
 - Administration of Potential, Proposed, Recommended, and Suitable Wilderness and Wilderness Study Areas
 - Interagency Coordination and Partnerships
 - Trails and Trailhead Management
 - Campsite Management
 - Signs and Other Route Markings
 - Ranger Stations, Equipment Caches and Visitor Use Shelters
 - Food Protection Systems
 - Sanitation and Waste Management Facilities
 - Radio Repeaters / Communication Facilities

Appendixes 4.1, 4.2, and 4.3 that follow offer detailed guidance for developing these action topics. These appendixes describe the action topic or issue, identify the topic's relationship to wilderness character, and describe how the topic might be addressed in the plan. In addition, these appendixes may assist park staff in considering what qualitative guidance or quantitative standards are needed within a wilderness stewardship plan to address issues of concern.

APPENDIX 4.1—RESOURCE MANAGEMENT ACTION TOPICS TO CONSIDER IN DEVELOPING A WILDERNESS STEWARDSHIP PLAN

Wildlife

- *Issue/action topic*—Proposed actions related to wildlife that may be addressed in a wilderness stewardship plan include those for managing human use to protect wildlife and those to protect people from nuisance wildlife. You may want to address human disturbance of wildlife, prevention of problems, special category wildlife, nonnative species, native species reintroductions, river use impacts on wildlife, nuisance animals, artificial wildlife habitat enhancements (e.g., guzzlers), and special management considerations for species such as grizzly bears. This is the place you may want to provide foundational guidance for managing wildlife within wilderness that would then be used to develop subsequent plans (e.g., bear management plan, species reintroduction plan). List any measures and standards that are a part of wilderness-specific wildlife monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Wildlife is addressed by several indicators under the natural quality, for example, the indicator “Plant and animal species and communities” and some aspects of wildlife habitat may fit under the “Physical resources” and “Biophysical processes” indicators. Many wildlife management actions are also relevant to the untrammelled quality under the indicators “Actions authorized by the federal land manager that manipulate the biophysical environment” and “Actions not authorized by the federal land manager that manipulate the biophysical environment.”
- *Relevant wilderness stewardship plan section*—If management actions are being proposed to address wildlife issues or to resolve wildlife-human conflicts, include this topic in your description of zones and/or alternatives. If they do not vary by alternative they could be described in the “Actions Common to All Alternatives” section.

Fisheries Resources

- *Issue/action topic*—Objectives might include the protection and restoration of native fisheries and fish species of management concern. Prevention of impacts on fish caused by human activities (e.g., shoreline erosion) could be addressed. Presence of nonnative fish may be addressed along with acceptable methods for removal (based on minimum requirements). Active stocking of game fish, either authorized or unauthorized, may also be addressed. List any measures and standards that are a part of wilderness-specific fisheries monitoring programs and management actions triggered by the standards.

- *Relationship to wilderness character*—Fisheries are addressed by several indicators under the natural quality, for example the indicator “Plant and animal species and communities” and some aspects of fish habitat may fit under the “Physical resources” and “Biophysical processes” indicators. Many fisheries management actions, particularly stocking, are also relevant to the untrammelled quality under the indicator “Actions authorized by the federal land manager that manipulate the biophysical environment” and if the stocking is illegal it is relevant to the indicator “Actions not authorized by the federal land manager that manipulate the biophysical environment.”
- *Relevant wilderness stewardship plan section*—If management actions are being proposed to address fish conservation and/or fisheries management issues, include this topic in your description of zones and/or alternatives.

Vegetation Resources

- *Issue/action topic*—Management of rare or endemic plant species, special plant habitats (e.g., dunes), edge of range species, and ethnobotanical resources should be included. Also, changes in vegetative composition (particularly those related to altered fire regimes or climate change), nonnative plants, extirpated plant species, and collection and consumption of plant materials can be discussed here. Provide guidance for protecting vegetation from the impacts of visitor and park staff activities and describe the level of change in native vegetation that will be allowed. State where and how much human-caused bare ground is acceptable (e.g., at campsites, day use sites, on social trails, parallel and braided trails). You may find that specific bare ground standards for sites are better placed under “Campsite Management.” List any measures and standards that are a part of wilderness-specific vegetation monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Vegetation is addressed by several indicators under the natural quality, for example the indicator “Plant and animal species and communities” and some aspects of plant habitat may fit under the “Physical resources” and “Biophysical processes” indicators. Many vegetation management actions are also relevant to the untrammelled quality under the indicator “Actions authorized by the federal land manager that manipulate the biophysical environment.”
- *Relevant wilderness stewardship plan section*—If management actions are being proposed to manage plants (e.g., nonnative plant control, vegetation monitoring) or monitor natural conditions related to vegetation, include this topic in your description of zones and/or alternatives.

Soil Resources

- *Issue/action topic*—Consider the extent and magnitude of disturbance or loss of soil or soil crusts and the relevance of such losses to the ecosystem. If this is an issue of concern, develop standards and management actions aimed at controlling human-caused or indirectly human-related (e.g., grazing impacts) soil erosion and/or compaction. You may describe how much is acceptable under various circumstances (e.g., along stream banks, at campsites, on trails). List any measures and standards that are a part of wilderness-specific soil monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Soil as a natural resource is addressed by the natural quality under the indicator “Physical resources.” Management actions directed at soil are addressed by the untrammelled quality under the indicator “Actions authorized by the federal land manager that manipulate the biophysical environment.” Recreational impacts on soil resources are addressed by the solitude or primitive and unconfined recreation quality under the indicator “Remoteness from sights and sounds of people inside the wilderness.”
- *Relevant wilderness stewardship plan section*—If management actions are being proposed to manage soil resources (e.g., erosion prevention, soil crust protection, etc.) or monitor natural conditions related to soils, include this topic in your description of zones and/or alternatives.

Air Resources

- *Issue/action topic*—If not mentioned previously, state the class of air shed assigned to the park and/or wilderness area. List objectives for protection of any air quality-related values associated with the wilderness (e.g., vegetation, water quality, cultural landscapes, and scenic vistas). You may want to describe how impacts to wilderness air quality from sources such as wildland fire, management prescribed fire, and campfires will be minimized, or refer to other plans. Keep in mind that guidelines for air quality protection related to wilderness that are stated in this document can help provide a foundation for protection of wilderness-related values discussed in other plans (e.g., fire management plan). List any measures and standards that are a part of wilderness-specific air quality monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Air resources are addressed by the natural quality under the “Physical resources” indicator. Visibility as an air quality related value specific to visitor experience is addressed by the solitude or primitive and unconfined recreation quality under the indicator “Remoteness from occupied and modified areas outside the wilderness.”
- *Relevant wilderness stewardship plan section*—Air quality monitoring and desired resource conditions may be included in the zones or alternatives and prescribed management actions triggered by standards should also be included.

Aquatic Resources

- *Issue/action topic*—You may want to provide objectives for managing aquatic resources including water quality, lakes, rivers and streams, springs, wetlands, and the riparian environment. Discuss water quality degradation from human activities, impacts from human waste and how these will be managed at acceptable levels, and what those acceptable levels are. Consideration for inspections of underground fuel tanks and sewage treatment facilities that could affect wilderness might be included. Consider including required mitigation measures for compliance with executive orders on protection of floodplains and wetlands. You may wish to propose the establishment of wilderness monitoring programs to determine the effects of recreational use and management activities on specific aquatic resources. List any measures and standards that are a part of wilderness-specific aquatic resources monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Aquatic resources are addressed by the natural quality under the “Physical resources” indicator.
- *Relevant wilderness stewardship plan section*—Aquatic resource monitoring and desired resource conditions may be included in the zones or alternatives and prescribed management actions triggered by standards should also be included.

Fire Management

- *Issue/action topic*—If the park’s approved fire management plan already addresses fire in wilderness, it can be briefly summarized and referenced. If the fire plan does not adequately address the issue, this section can be written to update the fire plan. In either case, describe in the wilderness stewardship plan how the fire management program will be carried out so that wilderness character is preserved. Guidance based on minimum requirements for activities related to detection, suppression, and post-fire rehabilitation could be described. You might want to describe any specific procedures that will be followed within wilderness areas (e.g., minimum impact suppression tactics) and the specific minimum tools approved for each activity. Parameters for conducting hazard fuel reduction in wilderness could be provided. This section should include foundational guidance to be used to develop sections of the park’s fire management plan (or fire management plan update) that relate to wilderness. List any measures and standards that are a part of wilderness-specific fire monitoring programs and management actions triggered by the standards.

- *Relationship to wilderness character*—Fire as a natural process (including departure from natural fire regimes) is addressed by the natural quality under the “Biophysical processes” indicator. Fire management actions, including suppression of natural ignitions and use of management ignited prescribed fire, are addressed by the untrammeled quality under the indicator “Actions authorized by the federal land manager that manipulate the biophysical environment.” Arson fire may be included in the “Actions not authorized by the federal land manager that manipulate the biophysical environment.” Fire management actions that involve the use of motorized equipment or mechanical transport (e.g., chainsaws, portable pumps, helicopter landings, etc.) are addressed by the undeveloped quality under the indicator “Use of motor vehicles, motorized equipment, and mechanical transport.” Remote automated weather stations and temporary repeaters installed in wilderness during fire incidents affect the undeveloped quality under the indicator “Nonrecreational structures, installations, and developments.”
- *Relevant wilderness stewardship plan section*—Fire management opportunities and limitations can be incorporated into zones and/or alternatives and should parallel the fire management strategies identified for fire management units in the fire management plan. Prescribed management actions triggered by standards should also be included.

Natural Soundscapes

- *Issue/action topic*—Describe the quality of the natural soundscape and where noise intrusions are an issue. Include how the park intends to preserve the natural soundscape and reduce noise impacts, including impacts from aircraft overflights, adjacent motorized uses, and administrative uses that generate noise. If you have an air tour management plan, you can cross-reference relevant guidance related to flight routes, minimum/maximum flight altitudes, time of day for flights, and mitigation measures. Where military or noncommercial overflights are a concern, you may include guidance for working with those responsible (both agencies and nongovernmental organizations) to reduce or eliminate noise and visual impacts. Incorporate appropriate education strategies regarding wilderness values and noise impacts. List any measures and standards that are a part of wilderness-specific soundscape monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Natural soundscapes are addressed by the indicator “Remoteness from occupied and modified areas outside the wilderness” under the solitude or primitive and unconfined recreation quality. It may also relate to the indicator “Use of motor vehicles, motorized equipment, or mechanical transport” under the undeveloped quality.
- *Relevant wilderness stewardship plan section*—If actions are being proposed to manage the natural soundscape, include this topic in your description of zones and/or alternatives. Standards for noise impacts on the natural soundscape may be developed. If soundscape standards can readily and appropriately be varied by wilderness zones, this may be effective. Alternatively, soundscape standards could vary by alternative, or be common to all alternatives.

Night Skies

- *Issue/action topic*—Describe how the park might reduce and mitigate impacts to the natural lightscape of the wilderness for the protection of dark night skies as both a natural resource and an experiential value for park visitors. Consider opportunities to reduce or eliminate sources of light pollution within the park. You may include guidance for working with outside entities to reduce human-caused light impacts on wilderness. Incorporate educational strategies about the values of natural night skies. List any measures and standards that are a part of wilderness-specific night sky monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Night skies are addressed by the indicator “Remoteness from occupied and modified areas outside the wilderness” under the solitude or primitive and unconfined recreation quality.
- *Relevant wilderness stewardship plan section*—If actions are being proposed to manage night skies, include this topic in your description of zones and/or alternatives.

Viewsheds

- *Issue/action topic*—Describe the quality and contribution of viewsheds to opportunities for solitude and the remoteness from the sights and sounds of people if there is an issue with threats to important views. Examples include energy development, urbanization, logging, etc. GIS is an important tool for determining the extent of important viewsheds on the ground. Describe the extent to which viewsheds are inside or outside of wilderness, and where significant portions of important viewsheds are outside of wilderness describe what protections, if any, may be in place (other governmental protections, easements, etc.). You may include guidance for working with outside entities to eliminate or mitigate visual impacts. Incorporate appropriate education strategies regarding wilderness values and viewshed impacts. List any measures and standards that are a part of wilderness-specific viewshed monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Viewsheds are addressed by the indicator “Remoteness from occupied and modified areas outside the wilderness” under the solitude or primitive and unconfined recreation quality.
- *Relevant wilderness stewardship plan section*—If actions are being proposed to manage viewsheds, include this topic in your description of zones and/or alternatives.

Archeological Resources

- *Issue/action topic*—Indicate the National Register of Historic Places status of any archeological resource in the park’s wilderness area. If an inventory of archeological resources is incomplete, describe how it will be completed. You may want to address the management of human use to prevent disturbance or propose the establishment of wilderness monitoring programs to determine the effects of recreation and management activities on archeological resources. Marked and unmarked prehistoric and historic burial areas (cemeteries) and reinterments in wilderness may be addressed. List any indicators and standards that are a part of wilderness-specific archeological resources monitoring programs. Consultation with cultural resource professionals is essential.
- *Relationship to wilderness character*—Archeological resources may be addressed by the indicator “Loss of statutorily protected cultural resources” under the other features of value quality.
- *Relevant wilderness stewardship plan section*—Proposed actions related to archeological resources may not vary by zone and/or alternative so they may be best described in “Actions Common to All Alternatives.” If it does vary, include it in the zone and/or alternative descriptions.

Ethnographic Resources

- *Issue/action topic*—There may be ethnographic resources that are wilderness related, and objectives for protecting and managing those resources could be addressed here. Traditional access and use of ethnographic resources, which can include natural resources, in wilderness areas should be considered. Sacred sites having established religious meaning could be addressed in this section. The wilderness experience aspects of traditionally associated peoples are often overlooked and could be addressed here or in the “Visitor Experience” section. If an inventory of ethnographic resources is incomplete, describe how it will be completed.
- *Relationship to wilderness character*—Ethnographic resources may be addressed by the indicator “Loss of statutorily protected cultural resources” under the other features of value quality.
- *Relevant wilderness stewardship plan section*—Proposed actions related to ethnographic resources may not vary by zone and/or alternative so they may be best described in “Actions Common to All Alternatives.” If it does vary, include it in the zone and/or alternative descriptions.

Historic or Prehistoric Structures

- *Issue/action topic*—Describe here any guidance related to the management of historic or prehistoric structures within wilderness. Objectives might be given for survey, protection, restoration, or use of structures or other management prescriptions that are wilderness specific. Indicate the National Register of Historic Places status of any structure in the park's wilderness areas. You may wish to address any issues related to the relationship between management of historic/prehistoric structures and protection of other wilderness values (e.g., removal of trees to protect historic structures from decay). This could be done through specific proposed actions or criteria to consider in decision making. If historic structures are also being used for administrative purposes, cross reference to the facilities section. If the evaluation for National Register of Historic Places eligibility of historic structures is incomplete, describe how it will be completed. List any indicators and standards that are a part of wilderness-specific historic/prehistoric structure monitoring programs. Historic trails can be covered here or in your "Trail and Trails Management" section.
- *Relationship to wilderness character*—Historic or Prehistoric Structures may be addressed by the indicator "Loss of statutorily protected cultural resources" under the other features of value quality. Proposed management activities may relate to the indicator "Use of motor vehicles, motorized equipment, or mechanical transport" in the undeveloped quality.
- *Relevant wilderness stewardship plan section*—If management actions related to historic or prehistoric structures are proposed, include this topic in your description of zones and/or alternatives.

Cultural Landscapes

- *Issue/action topic*—Cultural landscapes may be identified here with descriptions of existing conditions and use. If cultural landscapes have not been evaluated for National Register of Historic Places eligibility, describe how this will be completed. Indicate the National Register of Historic Places status of any structure or feature of a cultural landscape in the park's wilderness area. You may wish to address any issues related to the relationship between management of cultural landscapes and protection of other wilderness values (e.g., evaluation of protection of exotic species in the cultural landscape). This could be done through specific proposed actions or criteria to consider in decision making. If management actions are planned, they should be addressed in this section.
- *Relationship to wilderness character*—Cultural Landscapes may be addressed by the indicator "Loss of statutorily protected cultural resources" under the other features of value quality. This action also may relate to the indicator "Actions authorized by the federal land manager that manipulate the biophysical environment" under the untrammeled quality or by the indicator "Plant and animal species and communities" in the natural quality.
- *Relevant wilderness stewardship plan section*—If management actions related to cultural landscapes are proposed, include this topic in your description of zones and/or alternatives.

Museum Collections

- *Issue/action topic*—Some items that are a part of the park museum collection may remain in situ within the wilderness on the landscape or as historic furnishings in their original arrangement in a historic structure. Describe how these items will be protected and monitored. If the park already has a collections management plan that addresses collections in wilderness, it can be briefly summarized and referenced. If it does not adequately address the issue, this section can be written to update it including consideration of what museum collections might be left in wilderness and why. Describe how periodic museum collection inventories and condition assessments will be conducted.
- *Relationship to wilderness character*—Museum Collections may be addressed under the other features of value quality. Consideration should be given to how museum collections management in a wilderness setting may affect other qualities of wilderness character.
- *Relevant wilderness stewardship plan section*—If management actions related to museum collections are proposed, include this topic in your description of zones and/or alternatives.

Paleontological Resources

- *Issue/action topic*—Describe the extent and significance of paleontological resources in the wilderness. If an inventory of paleontological resources is incomplete, describe how it will be completed. You may want to address the management of human use to prevent disturbance or propose the establishment of wilderness monitoring programs to determine the effects of recreation and management activities on paleontological resources. List any indicators and standards that are a part of wilderness-specific paleontological resources monitoring programs. Identify the existing and desired extent of research and collection activities, including considerations of wilderness character impacts related to collection techniques. There may be sensitive location information that should not be publicly shared.
- *Relationship to wilderness character*—Paleontological Resources may be addressed under the other features of value quality. Consideration should be given to how management of paleontological resources in a wilderness setting may affect other qualities of wilderness character.
- *Relevant wilderness stewardship plan section*—One place this may be addressed in the plan is management of scientific activities in wilderness and minimum requirements analysis, possibly developing a programmatic minimum requirements analysis for ongoing programs. Another place paleontological resource management in wilderness may be addressed is in measures and standards, and possible actions in visitor use management or other strategies to protect them from theft or damage.

Climate Change

- *Issue/action topic*—Climate change, particularly to the degree that it is human-caused, threatens the values for which these areas were designated. It also exacerbates other threats to these areas, such as invasive species and habitat fragmentation. As the rate of change increases, wilderness stewardship issues will become increasingly complex and difficult, causing myriad unanticipated effects to social and ecological dimensions of wilderness character. Wilderness management goals traditionally stressed preservation of natural conditions—either those that would exist in the absence of modern technology, or those representative of historical conditions. The reality of climate change suggests that an attempt to maintain conditions in an unaffected or historical state is no longer feasible, or even desirable, because so-called “natural” conditions will be poorly adapted to future climates. Identifying future desirable conditions in the face of unprecedented and unpredictable events requires a different approach to planning and management.
 - » Pressure to more actively manage wilderness for resilience, resistance, or restoration could result in a significant downward trend in the untrammelled quality of wilderness character. Restraint is critical to preserving this quality.
 - » Parks that participate in scenario planning will have a set of possible future conditions that can be very informative in wilderness stewardship planning.
- *Relationship to wilderness character*—Climate change can be reflected in multiple qualities of wilderness character. The primary place where it is addressed is in the natural quality under the “Biophysical processes” indicator: “Extent and magnitude of global climate change.” It also may be relevant to indicators for plant and animal species and communities and physical resources in the natural quality. Climate change may also be addressed in the untrammelled quality under the indicator “Actions authorized by the federal land manager that manipulate the biophysical environment,” and in the “Actions not authorized by the federal land manager that manipulate the biophysical environment.”
- *Relevant wilderness stewardship plan section*—Climate change can be addressed in a number of parts of the wilderness stewardship plan. Climate change may be part of the issues, and may be discussed in the affected environment section and should be a part of the impact analysis. The inherent tension between natural and untrammelled qualities is an important part of developing strategies and analyzing impacts.
 - » *If climate change scenario planning is available*, it may be useful to include in developing alternatives, such as strategies for invasive nonnative plants, trails and other structures, visitor access, visitor capacity, etc. For example, the level and type of trail development should consider possible increased storm intensities or other scenarios.

APPENDIX 4.2—VISITOR EXPERIENCE ACTION TOPICS TO CONSIDER IN DEVELOPING A WILDERNESS STEWARDSHIP PLAN

Visitor Use Management

- Issue/action topic*—The purpose of this section is to describe how the park will meet the Wilderness Act mandate for providing opportunities for solitude and how it will provide visitors with a high-quality wilderness experience. You could describe how the wilderness experience will be protected by managing visitor use such as the number of people encountered along trails and in campsites. It might describe the type of users affected (day vs. overnight) and the techniques used to manage visitor use to avoid sensitive resources and protect solitude while still providing opportunities for primitive and unconfined recreation. Details might include where and how a limit would be established and administered (e.g., based on trailhead, camp area, or zone). It might also describe measures and standards that would be used to establish and adjust use limits. If you establish standards for the number of people encountered on the trail or the number of people allowed to camp within sight or sound of each other, include them here. The density of campsites might also be described. List any measures and standards that are a part of wilderness-specific visitor use monitoring programs and management actions triggered by the standards.
- Relationship to wilderness character*—Visitor use management and visitor capacity are most relevant to the solitude or primitive and unconfined recreation quality. Use limits and expectations relate to the indicator “Remoteness from sights and sounds of people inside wilderness” and may relate to “Remoteness from occupied and modified areas outside the wilderness.” It also is likely to relate to “Management restrictions on visitor behavior” under the solitude or primitive and unconfined recreation quality. In many cases agency visitor use management strategies will serve to enhance solitude but sometimes at the expense of unconfined recreation. Such “tensions” should be explicitly explained where possible.
- Relevant wilderness stewardship plan section*—Use limits and standards are a core part of most plans and probably vary by zone and alternative. There is also a wide range of visitor use management strategies that should be considered before or in addition to use limits, such as education. This topic can be expected to be among the most scrutinized and potentially controversial topics considered in the plan.

Risk and Challenge

- Issue/action topic*—Discuss how risk and challenge are inherent in the wilderness experience. Self-sufficiency and self-reliance are additional elements associated with these topics that could be addressed. You may want to make a general statement about the level of control over risk that the park might take (e.g., the park will not attempt to eliminate or control risks that are part of the wilderness environment). Be careful of your language here from a legal point of view.

- *Relationship to wilderness character*—Risk and challenge relate to three indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” “Remoteness from occupied and modified areas outside the wilderness,” and “Facilities that decrease self-reliant recreation.”
- *Relevant wilderness stewardship plan section*—The appropriate levels of risk and challenge that might be expected within each zone or alternative should be addressed (e.g., higher risk and challenge available in a more pristine zone than a more developed zone).

Campfires

- *Issue/action topic*—If no campfires will be permitted in your wilderness, briefly state this. If campfires are allowed, outline the criteria used for determining where, when, and how they are acceptable (e.g., by elevation, by amount of dead and down wood available, by presence of restoration areas, with use of a firepan). List any measures and standards that are a part of wilderness-specific visitor use compliance monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Campfires may relate to “Plant and animal species and communities” and “Physical resources” under the natural quality. Campfire management is relevant to the solitude or primitive and unconfined recreation quality. Under this quality, campfire management relates to the indicator “Remoteness from sights and sounds of people inside wilderness.” Providing fire pits may be related to “Facilities that decrease self-reliant recreation” and may relate to “Management restrictions on visitor behavior,” if restrictions are proposed.
- *Relevant wilderness stewardship plan section*—If your park’s regulations have not gone through a public involvement process or you are proposing changes in campfire management, this should be included in your zone or alternatives descriptions. Note that due to ecological factors, campfire location decisions often will not relate directly to management zones but may be discussed in a category called “Other Management Actions Not Attributable to Zoning.”

Stock Use

- *Issue/action topic*—If stock users represent an important part of your wilderness use, a separate livestock management plan might be appropriate. The livestock management plan would provide more detailed direction based on the foundational guidance contained within the wilderness plan. If the park does not anticipate development of such a plan, this section in the wilderness stewardship plan should include as much detail as is appropriate for managing and mitigating stock use in your wilderness.

Topics to discuss could include protection of plant species and composition, nonnative plant prevention, soil erosion, water quality, and education of stock users and hikers around stock. Include the types of pack and saddle stock permitted within the wilderness, locations where stock travel and camping are acceptable (these may vary with zone, elevation, on- and off-trail use, or season), and types of acceptable stock restraints. Address

stock facilities here, or stock camps in “Campsite Management.” Provide guidance for noncommercial stock grazing (e.g., specific areas open to grazing, establishment of opening dates for trail travel and meadows for grazing).

- » If Congress has authorized commercial grazing or livestock driving in your wilderness, you may want to describe conditions and requirements under “Existing Valid Rights” rather than here. Trails proposed as open to stock might be better listed under “Trails and Trailhead Management.” Evaluate visitor capacity for stock use and determine the allocation for commercial uses. List any measures and standards that are a part of wilderness-specific stock use monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Stock use may relate to a number of qualities and indicators: “Plant and animal species and communities” and “Biophysical processes” under the natural quality. In the solitude or primitive and unconfined recreation quality it may relate to the indicators “Remoteness from sights and sounds of people inside the wilderness,” “Facilities that decrease self-reliant recreation,” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—If management actions for stock vary by zone and/or alternative, include them in those descriptions (e.g., locations where stock travel, stock camping and stock restraints would be allowed). A list of current stock trails could be listed in the affected environment section, the “no action” alternative, or in an appendix of the environmental assessment / environmental impact statement.

Winter Use

- *Issue/action topic*—This section would describe any differences in how the park would manage the wilderness during winter as opposed to other seasons. You might address the types of travel and activities permitted during winter or any facilities specific to winter use. Consider if visitor capacity varies by season or activity and how such variation may affect allocation for commercial uses. List any measures and standards that are a part of wilderness-specific winter use monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Winter use may relate to a number of indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” “Remoteness from occupied and modified areas outside the wilderness,” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—If management actions related to winter use are being proposed, include this topic in your description of zones and/or alternatives.

Access for Persons with Disabilities

- *Issue/action topic*—This section should list objectives for facilitating access to and in wilderness for people with disabilities while preserving wilderness character. Barrier-free trails should be discussed along with barrier-free facilities. A statement discussing availability of disability access information would also be appropriate here.

- *Relationship to wilderness character*—Access for persons with disabilities may relate to the indicator “Facilities that decrease self-reliant recreation” under the solitude or primitive and unconfined recreation quality.
- *Relevant wilderness stewardship plan section*—If management actions related to access for persons with disabilities are being proposed, include this topic in your description of zones and/or alternatives. A list of barrier-free trails could be listed in the affected environment section of the environmental assessment / environmental impact statement.

Hunting and Fishing

- *Issue/action topic*—If no hunting or fishing is allowed in the wilderness, simply state this fact if it is helpful to do so. If hunting or fishing is allowed, objectives for managing this activity in a way that preserves wilderness character should be described. You may want to state if hunting camps are allowed and describe minimum requirements practices for carcass transport and storage and any facilities (e.g., tree stands, lockers) or use restrictions (e.g., handling of gut piles) that are specific to hunters or hunting camps. Identify any special conditions or circumstances affecting hunting or fishing within the park wilderness. List any measures and standards that are a part of wilderness-specific hunting/fishing monitoring programs and management actions triggered by the standards. Identify any special conditions or circumstances, such as treaties with American Indian tribes, affecting hunting or fishing within the park wilderness.
- *Relationship to wilderness character*—Hunting and fishing may relate to the indicators “Plant and animal species and communities,” “Physical resources,” and “Biophysical processes” under the natural quality. If hunting and fishing are proposed to be regulated they will relate to the indicator “Management restrictions on visitor behavior” under the solitude or primitive and unconfined recreation quality.
- *Relevant wilderness stewardship plan section*—Proposals for hunting/ fishing activities and facilities may vary by zone and/or alternative. If so, include them in these sections.

Climbing, Mountaineering, and Canyoneering

- *Issue/action topic*—In some parks, a separate climbing management plan may be needed if climbing activities are complex, substantial impacts are occurring, and/or climbing-related issues are controversial. Alternatively the topic may instead be addressed in the wilderness stewardship plan. This section might address access routes / way trails, route erosion, plant removal, visual impacts, wildlife closures, bivying, human waste management, conditions under which climbing activities would be permitted, permit requirements, and the types of and conditions where climbing equipment (e.g., fixed anchors, power drills) is acceptable (and not acceptable) within wilderness. The placement, presence, and removal of summit registers could be addressed here. Available access to designated climbing areas could be addressed along with seasonal and long-term closures. This section could also be used to outline the criteria the park would use to determine closures. List any measures and standards that are a part of wilderness-specific climbing monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—Climbing, mountaineering and canyoneering may relate to “Plant and animal species and communities” under the natural quality. They may relate to the indicator “Management restrictions on visitor behavior” under the solitude or primitive and unconfined recreation quality if regulated.
- *Relevant wilderness stewardship plan section*—Specific actions for managing climbing activities and their potential environmental impacts might vary by zone and/or alternative and thus would be addressed in these sections.

Watercraft

- *Issue/action topic*—Describe what type of watercraft are appropriate in specific locations or zones in the park’s wilderness. You may also describe designated shoreline access points for landing, launch and/or take out. It may be helpful to include guidance on use of rafts and construction of rafts from native materials.
- *Relationship to wilderness character*—Watercraft use may relate to the “Physical resources” indicator under the natural quality, and may also relate to a number of indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” “Facilities that decrease self-reliant recreation,” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—If management actions related to watercraft use are proposed, include this topic in your description of zones and/or alternatives.

Special Events

- *Issue/action topic*—Describe criteria for determining the types, terms, and conditions of special events that would be acceptable in the wilderness. Because new event types may arise, it may be helpful to include specific criteria for future evaluation of appropriateness.

- *Relationship to wilderness character*—Special events may relate to two indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” and “Facilities that decrease self-reliant recreation” if facilities may be proposed for such events.
- *Relevant wilderness stewardship plan section*—You might want to list the specific types of events that are acceptable which may vary by zone and/or alternative.

Emerging Uses

- *Issue/action topic*—Criteria should be established in the plan for evaluating the appropriateness of new and emerging activities (e.g., sandkiting, all-terrain skating) within the wilderness. This section might also provide direction for educating the public and park staff about the effects of such uses on wilderness character.
- *Relationship to wilderness character*—Depending on the activity associated with the emerging use this topic may relate to a number of indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” “Remoteness from occupied and modified areas outside the wilderness,” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—If there are criteria for evaluation of new uses or prohibitions throughout the entire wilderness related to certain types of emerging uses, they may be described in “Actions Common to All Alternatives.” If new uses may be allowed in some zones/alternatives and not others, include this in the zone or alternative descriptions.

APPENDIX 4.3—ADMINISTRATIVE ACTIONS AND FACILITIES ACTION TOPICS TO CONSIDER IN DEVELOPING A WILDERNESS STEWARDSHIP PLAN

Emergency Services (Search and Rescue, Emergency Medical Services, Law Enforcement)

- *Issue/action topic*—Describe how section 4(c) exceptions of the Wilderness Act (including minimum requirements policies) will be applied to emergency situations (i.e., search and rescue, emergency medical services, and law enforcement). This can be done by stating what administrative actions will be considered emergencies and briefly outlining the park's emergency response approval process (e.g., case-by-case approval by superintendent or incident commander). Criteria should be outlined for determining when the section 4(c) exceptions apply (e.g., urgency and need for speed beyond that available by primitive means). The minimum tools for emergency response can be stated here, or emergency standard operating procedures already developed through a minimum requirements process can be referenced in the appendix or in other documents. If you wish for the public to review the standard operating procedures, include them here.
- *Relationship to wilderness character*—Emergency services may relate to the indicators "Remoteness from sights and sounds of people inside the wilderness" and "Remoteness from occupied and modified areas outside the wilderness" under the solitude or primitive and unconfined recreation quality. It also may relate to the indicator "Use of motor vehicles, motorized equipment, or mechanical transport" under the undeveloped quality.
- *Relevant wilderness stewardship plan section*—Proposed actions related to emergency response may not vary by zone and/or alternative so may be best described in "Actions Common to All Alternatives."

Group Size

- *Issue/action topic*—This section describes whether or not there is a maximum party size and if it varies by user type (day vs. overnight users, hikers, stock, commercial users).
- *Relationship to wilderness character*—Group size may relate to several indicators under the solitude or primitive and unconfined recreation quality: "Remoteness from sights and sounds of people inside the wilderness" and "Management restrictions on visitor behavior."
- *Relevant wilderness stewardship plan section*—In many parks, proposals for group size will vary by zone. Thus this topic would be included under the zone descriptions. If proposals vary by alternative it would be described there. It can also be discussed in the impact analysis.

Use Permits and Reservation Systems

- *Issue/action topic*—This section describes the purpose and objectives of any permit and reservation system, including where and how permits are issued (e.g., in person, at wilderness centers, via computer), and how reservations are administered and applied, including any differences for commercial groups.
- *Relationship to wilderness character*—Use permits and reservation systems relate to the indicator “Management restrictions on visitor behavior” under the solitude or primitive and unconfined recreation quality.
- *Relevant wilderness stewardship plan section*—Actions related to use permits and reservations will probably apply across all zones, but may vary by alternative. If so, include the topic under the alternative section, or if it applies to all, include in “Actions Common to All Alternatives.”

Administration of Scientific Activities

- *Issue/action topic*—Describe how the research program (natural resource, cultural resource, and social science) and the inventory and monitoring program will be coordinated with the wilderness program. Explain the differences in conducting resource research and inventory and monitoring in wilderness as opposed to nonwilderness, including application of the minimum requirements concept. Guidelines for incorporating wilderness management concerns (e.g., minimum requirements) in the research permit process should be provided (see: Landres, Peter, ed. 2010. *A framework to evaluate proposals for scientific activities in wilderness*, Gen. Tech. Rep. RMRS-GTR-234WWW at <http://www.wilderness.net/toolboxes/documents/resSciAct/Scientific%20Activities%20Evaluation%20Framework.pdf>). Criteria should be established for evaluating and determining the types and level of scientific activities (e.g., manipulative research, collection of wilderness resources), the amounts and length of disturbance allowed, and research and monitoring devices acceptable in each zone. Site access, and transport and placement of equipment could be discussed. Site restoration following scientific activities should also be addressed.
- *Relationship to wilderness character*—Administration of scientific activities may relate to the indicators “Nonrecreational structures, installations, and developments” and “Use of motor vehicles, motorized equipment, or mechanical transport” under the undeveloped quality. It also may relate to the indicator “Remoteness from sights and sounds of people inside the wilderness” under the solitude or primitive and unconfined recreation quality.
- *Relevant wilderness stewardship plan section*—If management actions related to scientific activities are proposed, include this topic in your description of zones and/or alternatives.

Rehabilitation and Revegetation

- *Issue/action topic*—Describe the objectives for your wilderness revegetation program if one exists or is proposed. You might want to outline what circumstances trigger rehabilitation and/or revegetation actions and the criteria for prioritizing projects. Direction might also be given for rehabilitation and revegetation actions following illegal activities (e.g., moss poaching, oversize stock group damage, marijuana plots). Guidelines based on the minimum requirements process and other policies could be listed for project planning, sources of plant materials, site access, site preparation (including soils), plant transport, planting, mulching, plant aftercare, and monitoring project “success.” List any measures and standards that are a part of wilderness-specific revegetation monitoring programs and management actions triggered by the standards.
- *Relationship to wilderness character*—If rehabilitation / revegetation is at a large enough scale it may relate to the indicator “Plant and animal species and communities” under the natural quality. It will probably relate to the indicator “Actions authorized by the federal land manager that manipulate the biophysical environment” under the untrammeled quality. Depending on how the work may be implemented, the indicator “Use of motor vehicles, motorized equipment, or mechanical transport” under the undeveloped quality may apply as well as a number of indicators in the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness” and “Facilities that decrease self-reliant recreation.”
- *Relevant wilderness stewardship plan section*—The level and management strategies for rehabilitation and revegetation work undertaken (i.e., passive to more aggressive) may vary based on zone and/or alternatives. It can also be discussed in the impact analysis. If so address this topic in those sections. If rehabilitation / revegetation actions will be pursued similarly throughout the wilderness, describe the topic under “Actions Common to All Alternatives.”

Interpretation and Education

- *Issue/action topic*—Describe the key wilderness interpretive themes and educational messages. Identify the target audiences for your wilderness education program. Outline the media and delivery mechanisms that would be most effective for reaching target audiences. Include personal and nonpersonal services. This section should include foundational guidance for wilderness-related interpretation and education that can be used in the development of the park’s long-range interpretive plan or incorporate elements as appropriate from that plan.
- *Relationship to wilderness character*—Wilderness-related interpretation and education may relate to several indicators under the solitude or primitive and unconfined recreation quality: “Facilities that decrease self-reliant recreation” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—This topic may not vary by zone or by alternative; if not, describe this under “Actions Common to All Alternatives.” However, levels of interpretation/education may vary with an increased emphasis on staff presence or educational signs in some zones. If so, describe in zones and/or alternatives.

Existing Valid Rights

- *Issue/action topic*—This section would describe how existing valid rights (e.g., inholdings, mining claims, access, rights-of-way, grazing permits) might be administered so as to ensure the protection of both the valid rights and wilderness character. You may want to describe the legal rights, and activities that will be authorized associated with those rights. Describe the conditions under which rights-of-way subject to administrative control will be administered to protect wilderness character, including how the minimum requirements will be met.
- *Relationship to wilderness character*—Depending on the nature of the rights and how they are executed, this topic may relate to the indicators “Inholdings,” “Nonrecreational structures, installations, and developments,” and “Use of motor vehicles, motorized equipment, or mechanical transport” under the undeveloped quality.
- *Relevant wilderness stewardship plan section*—A description of the existing valid rights can be presented in the affected environment section of the environmental assessment / environmental impact statement. It may be that proposed actions related to existing valid rights in wilderness do not vary by zone and/or alternative; if so describe this under “Actions Common to All Alternatives.” If it does vary, include in the zone and/or alternative descriptions.

Commercial Services and Special Park Uses

- *Issue/action topic*—This includes the evaluation of the type, amount, location, and timing of commercial services (which include concession contracts, commercial use authorizations, and leases), and of special park uses within wilderness. Commercial services and special park uses are governed under distinct authorities and the evaluations are based on different criteria. For commercial services, “necessary and appropriate” criteria are required for determining types of commercial services. For special park uses, the criteria are related to “meaningful association” and are driven by the authorities governing such uses. The “necessary and appropriate” criteria may have been developed in a park’s commercial services strategy and/or a commercial services plan or in the general management plan. Chapter 6 of the *User Guide* offers considerations to be used in making decisions affecting commercial services allowed within wilderness areas and elements to consider when evaluating the “extent necessary” for commercial services in a specific wilderness. Potential uses would be evaluated against both sets of criteria, with the first consideration being whether the use meets the “necessary and appropriate” criteria.
 - » General requirements, terms, and conditions for commercial operations within the wilderness should be presented in the plan environmental assessment / environmental impact statement (e.g., facilities allowed, guide qualifications, Leave No Trace training requirements). Limits on commercial operator numbers might also be addressed here. The park may wish to outline the allocation of reservations and quota space to commercial operators in this section as well. If the park has a commercial services strategy or commercial services plan, the wilderness stewardship plan can draw from the objectives and sideboards in these documents, and the decisions made in a commercial services plan.

- » General parameters for determining if the special uses of commercial photography or filming will be allowed in the wilderness should also be described along with the general requirements for conducting these types of operations.
- *Relationship to wilderness character*—Commercial uses may relate to several indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—It is very likely that there will be some variation in proposals for commercial uses within the wilderness based on differences in zones or alternatives. Include this topic in your description of zones and/or alternatives.

Administration of Potential, Proposed, Recommended, and Suitable Wilderness and Wilderness Study Areas

- *Issue/action topic*—Use this section to describe in general terms how the above areas will be managed to ensure the protection and preservation of their wilderness values until Congress makes a final decision on their dispensation. A park should consider using the wilderness stewardship plan environmental assessment / environmental impact statement as the vehicle for addressing the nonconforming uses that prevent immediate designation of “potential wilderness” areas as wilderness, and may want to propose actions to improve wilderness quality so designation can result.
- *Relationship to wilderness character*—The wilderness character qualities and indicators that would apply depend on the specific factors related to proposed management of these areas.
- *Relevant wilderness stewardship plan section*—A map showing the locations of the wilderness categories is appropriate for the affected environment section of the environmental assessment / environmental impact statement. A list and map of the potential wilderness additions with the reason they are nonconforming would also be helpful. Actions related to the potential wilderness additions may vary by zone and/or alternative and would be described therein.

Interagency Coordination and Partnerships

- *Issue/action topic*—Define objectives for interagency communication, coordination, and consistency that will enhance the preservation and restoration of wilderness character. You might want to describe proposed actions for achieving these objectives here. If the park wilderness is adjacent to wilderness managed by a different agency, describe consistencies in management.
- *Relationship to wilderness character*—The wilderness character qualities and indicators that would apply depend on the specific issues related to coordination between agencies.
- *Relevant wilderness stewardship plan section*—Actions related to interagency coordination are unlikely to vary by zone, but may vary by alternative and thus would be described there.

Trails and Trailhead Management

- *Issue/action topic*—The purpose of this section is to discuss how trails and trail-related impacts will be managed within the park wilderness and/or backcountry. A number of parks have separate trails management plans that provide the details for implementing their trails program. If this is the case in your park, this part of the wilderness stewardship plan should provide the foundational parameters for administering the trails program such as the overall objectives for trails management. If a trails management plan does not exist and is not anticipated, more detail should be provided here.
 - » Trail maintenance goals could be described. Trail classifications for maintained trails would be listed as well as trail clearing and brushing standards and tread width. Types of nonmaintained pathways might also be defined (e.g., way trails, social trails) and clarification of which types are “legitimate” and which are targeted for removal/recovery. If there are proposals for changing a particular trail’s classification (e.g., all-purpose stock trail to foot trail closed to stock), it should be included in this section.
 - » The types and materials allowed for tread, water crossings, and other trail maintenance facilities (e.g., puncheon, water bars) acceptable in each zone should be stated along with any proposed standards. Provide parameters for administrative use of on-site native materials (e.g., what types can be gathered, how much may be taken without additional compliance). Parameters for reroute construction could be listed (e.g., lengths of reroute permitted without further compliance). This section may include a description of maintenance frequency. The closure of any existing trails or the construction of any new trails should also be specifically addressed. This might be done with a general statement concerning whether this could occur, or you might choose to include specific proposals for the new trail(s). You might also want to describe parameters for administrative stock use here (or include it as a separate heading under “Administrative Actions”).
 - » This section might also address guidelines for trailhead facilities (type and design). It might also be helpful to relate whether or not trailhead development will be commensurate with the trail type and use for which it provides access. Historic trails can be covered here or in the “Historic or Prehistoric Structures” section.
- *Relationship to wilderness character*—Trails may relate to a number of indicators under the natural quality: “Plant and animal species and communities,” “Physical resources,” and “Biophysical resources.” It may also relate to the indicator “Use of motor vehicles, motorized equipment, or mechanical transport” under the undeveloped quality. Trails may also relate to a number of indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” “Remoteness from occupied and modified areas outside the wilderness,” “Facilities that decrease self-reliant recreation,” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—A list of current trails could be listed/mapped and the existing trail standards listed in the affected environment section, the “no action” alternative, or in an appendix of the environmental assessment / environmental impact statement.

- » It is likely that management actions related to trails will be one of the key elements of the zones and/or alternatives and would be included in those descriptions (e.g., locations of trails, trail types).
- » Allocation of trail classes to specific trails is likely to vary by alternative and would thus be best described under each alternative description. Types of trail facilities allowed is likely to vary by zone and would be best described under each zone description. Trail class allocations, management actions related to trails, and trail facility types in each alternative/zone can also be discussed in the impact analysis.

Campsite Management

- *Issue/action topic*—This section might include types of visitor use sites (e.g., day use, hiker, group, stock, beach, gravel bar, no bare ground campsites) including the number, density and distribution that would be acceptable in each zone; whether visitors would be required to camp in designated sites; description of campsite standards (e.g., size limits); appropriateness of delineation and hardening of sites; placement of sites (e.g., distance from water); construction of new sites or the closure of existing sites; and types of campsite facilities (e.g., fire rings, site markers).
- Relationship to wilderness character—Campsites may relate to a number of indicators under the natural quality: “Plant and animal species and communities,” “Physical resources,” and “Biophysical resources.” Campsite management is very relevant to the solitude or primitive and unconfined recreation quality. Campsites are most relevant to the indicator “Remoteness from sights and sounds of people inside the wilderness,” and “Facilities that decrease self-reliant recreation,” but may also relate to “Remoteness from occupied and modified areas outside the wilderness,” and “Management restrictions on visitor behavior.”
- *Relevant wilderness stewardship plan section*—Current campsites could be listed/mapped and any current campsite standards listed in the affected environment section, the “no action” alternative, or in an appendix of the environmental assessment / environmental impact statement. Many aspects of campsite management are likely to vary by zone and some may also vary by alternative; describe them in the appropriate section. They also can be discussed in the impact analysis.

Signs and Other Route Markings

- *Issue/action topic*—The proposed type and number of signs in each wilderness and/or backcountry zone could be listed (e.g., boundary, directional and mileage, natural feature, regulation, safety, resource management). A general objective for sign design might be placed here (e.g., rustic in design) while specifics on design (e.g., metal or wood, round vs. square post, size letters) might be better handled in a park sign standards document (e.g., sign plan). The park sign plan, for wilderness signs, would then be based on the requirements in the wilderness plan. Permanent and temporary route markings should be addressed (e.g., when and where and whether or not metal tree markers, cairns, wands, flagging, etc., are acceptable).

- *Relationship to wilderness character*—Signs and other route markings relate to two indicators under the solitude or primitive and unconfined recreation quality: “Remoteness from sights and sounds of people inside the wilderness,” and “Facilities that decrease self-reliant recreation.”
- *Relevant wilderness stewardship plan section*—The appropriate locations and types of signs are likely to vary by zone and/or by alternative. If so, describe. They can also be discussed in the impact analysis.

Ranger Stations, Equipment Caches and Visitor Use Shelters

- *Issue/action topic*—A park’s wilderness plan is an appropriate place to develop the specific criteria for evaluating whether existing wilderness ranger stations and visitor use shelters should remain. It might also be the place for some parks to evaluate and list specific structures proposed for removal or rehabilitation. Historic structures would be addressed in the “Cultural Resources” section but may also be discussed here to provide a total picture of visitor use facilities or administrative facilities. Criteria for construction of new ranger stations or new types of replacement ranger stations should be described if any might be considered in the future. The placement or prohibition of visitor, park staff, or researcher caches should also be addressed. If caches are permitted, this discussion should address the acceptable types (e.g., park tools, ranger food), maximum length for caching, and permitted locations.
- *Relationship to wilderness character*—Ranger stations and equipment caches relate to the indicator “Nonrecreational structures, installations, and developments” under the undeveloped quality while visitor use shelters relate to “Facilities that decrease self-reliant recreation.” All may relate to the indicator “Use of motor vehicles, motorized equipment, or mechanical transport” under the undeveloped quality and “Remoteness from sights and sounds of people inside the wilderness” under the solitude or primitive and unconfined recreation quality.
- *Relevant wilderness stewardship plan section*—The current ranger stations and shelters could be listed/mapped in the affected environment section, the “no action” alternative, or in an appendix of the environmental assessment / environmental impact statement. The presence of ranger stations and visitor use shelters will probably vary by zone and thus the location and types of ranger stations (e.g., cabin, tent) appropriate in each zone could be listed under the zone descriptions. They also can be discussed in the impact analysis.

Food Protection Systems

- *Issue/action topic*—Describe how wildlife will be protected from obtaining human food in the wilderness. Describe guidelines for the presence and acceptable types of food protection systems. Criteria using the minimum requirements concept can be listed to help determine whether a food protection facility is needed, and if so, what type is appropriate.
- *Relationship to wilderness character*—Food protection systems that are facilities relate to the indicator “Facilities that decrease self-reliant recreation” under the solitude or primitive and unconfined recreation quality.

- *Relevant wilderness stewardship plan section*—The types of acceptable food protection systems will probably vary by zone and/or alternative. In the zone description you might choose to list the specific types (e.g., animal resistant food canister, food hanging wires) acceptable in each zone. They also can be discussed in the impact analysis.

Sanitation and Waste Management Facilities

- *Issue/action topic*—Describe how human waste and litter will be managed within the wilderness. Describe guidelines for the presence and acceptable types of waste management facilities. Criteria using the minimum requirements concept can be listed to help determine whether a toilet is needed, and if so, what type of toilet is appropriate. Guidelines for location of toilets (e.g., distance from water, campsites, trails) might also be covered. This action topic goes hand-in-hand with visitor capacity.
- *Relationship to wilderness character*—Sanitation and human waste facilities relate to the indicators “Plant and animal species and communities” and “Physical resources” under the natural quality if vegetation, water quality, and soils are affected by human waste disposal. Depending on how the facilities are managed, they may relate to two indicators under the solitude or primitive and unconfined recreation quality: “Facilities that decrease self-reliant recreation,” and “Use of motor vehicles, motorized equipment, or mechanical transport.” If cat holes are dug in archeological sites the indicator “Loss of statutorily protected cultural resources” in the other features of value quality would be applicable.
- *Relevant wilderness stewardship plan section*—The types of acceptable human waste management systems will probably vary by zone and/or alternative. In the zone description you might choose to list the specific system (e.g., pack-it-out, cat hole, pit, composting, vault) and type of structures (e.g., Wallowa, full-size privy) acceptable in each management zone. They also can be discussed in the impact analysis.

Radio Repeaters / Communication Facilities

- *Issue/action topic*—Describe the criteria the park will use to evaluate the presence, placement, and type of communication facilities, structures, or installations within the wilderness. Determine parameters for the support of park and outside operations (i.e., under what circumstances will internal and external communication operations that affect the wilderness be supported).
- *Relationship to wilderness character*—Communication facilities relate to the indicators “Nonrecreational structures, installations, and developments” and may relate to the “Use of motor vehicles, motorized equipment, or mechanical transport” under the undeveloped quality.

- *Relevant wilderness stewardship plan section*—Describe for each zone and/or alternative the appropriate types and locations of communication facilities, if they will vary. If not, describe any proposed management actions related to communication facilities in “Common to All Alternatives.” They also can be discussed in the impact analysis. The current communication facilities could be listed and mapped in the affected environment section, the “no action” alternative, or in an appendix of the environmental assessment / environmental impact statement.

APPENDIX 5—INDICATORS, MEASURES, AND NPS DATA SOURCES FOR THE QUALITIES OF WILDERNESS CHARACTER

Qualities, indicators, and possible measures are from *Keeping It Wild*. This appendix includes the column “Monitoring Questions” for consistency with *Keeping It Wild*, although some users may find that this column is not necessary. Also, because *Keeping It Wild* did not include the other features of value quality of wilderness character, no monitoring questions are provided for this quality. Likely data sources need to be verified by park staff as to whether they are available and appropriate for the park and their intended use.

Table 10. Indicators, measures, and NPS data sources for the qualities of wilderness.

Natural Quality			
Monitoring Question	Indicator	Possible Measures	Likely NPS Data Sources
What are the trends in terrestrial, aquatic, and atmospheric natural resources inside wilderness?	Plant and animal species and communities	Abundance, distribution, or number of indigenous species that are listed as threatened and endangered, sensitive, or of concern	<ul style="list-style-type: none"> NPS Integration of Resource Management Applications (IRMA) NPSpecies database (http://science.nature.nps.gov/im/datamgmt/IRMA.cfm) State agencies and other partners (e.g., NatureServe data) U.S. Fish and Wildlife recovery records for listed species
		Number of extirpated indigenous species	<ul style="list-style-type: none"> NPS IRMA NPSpecies database State agencies and other partners (e.g. NatureServe data) U.S. Fish and Wildlife recovery records for listed species)
		Number of nonnative species	<ul style="list-style-type: none"> Vegetation inventory map data I&M monitoring data; NPS IRMA NPSpecies database National Forest Inventory and Analysis data Fire Monitoring Handbook plot records or FEAT/FIREMON Integration (FFI) data (http://www.frames.gov/portal/server.pt/community/feat_firemon_integrated_(ffi)/483) Nonindigenous Aquatic Species database (http://nas.er.usgs.gov/)
		Abundance, distribution, or number of invasive nonnative species	<ul style="list-style-type: none"> Alien Plant Control and Monitoring database for gross infested acres Nonindigenous Aquatic Species database LANDFIRE Uncharacteristic Vegetation data
		Number of acres of authorized active grazing allotments and number of animal unit months of actual use inside wilderness	<ul style="list-style-type: none"> Park data
		Change in demography or composition of communities	<ul style="list-style-type: none"> LANDFIRE data I&M vegetation monitoring data

Natural Quality			
Monitoring Question	Indicator	Possible Measures	Likely NPS Data Sources
What are the trends in terrestrial, aquatic, and atmospheric natural resources inside wilderness?	Physical resources	Visibility based on average deciview and sum of anthropogenic fine nitrate and sulfate	<ul style="list-style-type: none"> National IMPROVE data (http://views.cira.colostate.edu/web/)
		Ozone air pollution based on concentration of N100 episodic and W126 chronic ozone exposure affecting sensitive plants	<ul style="list-style-type: none"> National EPA AIRS data (http://epa.gov/airdata/aqsdb.html) National CASTNET data (http://epa.gov/castnet/javaweb/index.html)
		Acid deposition based on concentration of sulfur and nitrogen in wet deposition	<ul style="list-style-type: none"> National NADP/NTN data (http://nadp.sws.uiuc.edu/)
		Extent and magnitude of change in water quality	<ul style="list-style-type: none"> I&M monitoring data
		Extent and magnitude of human-caused stream bank erosion	<ul style="list-style-type: none"> I&M monitoring data Trail monitoring data
		Extent and magnitude of disturbance or loss of soil or soil crusts	<ul style="list-style-type: none"> I&M monitoring data Trail/campsite monitoring data
What are the trends in terrestrial, aquatic, and atmospheric natural processes inside wilderness?	Biophysical processes	Departure from natural fire regimes averaged over the wilderness	<ul style="list-style-type: none"> LANDFIRE Ecosystem Alteration Departure Index (http://www.landfire.gov/) Local Fire Regime Condition Class maps available from local Fire Management Office
		Extent and magnitude of global climate change	<ul style="list-style-type: none"> LANDFIRE Uncharacteristic Vegetation Map (http://www.landfire.gov/) Species shift data from local or regional sources (check with DOI Regional Climate Science Center to see what is available at http://www.doi.gov/csc/index.cfm)
		Area and magnitude for pathways for movement of nonnative species into the wilderness	<ul style="list-style-type: none"> NPS IRMA NPScape GIS analysis of pathways and vectors adjacent to wilderness (roads, trails, trailheads, waterways, and other common pathways)
		Area and magnitude of loss of connectivity with the surrounding landscape	<ul style="list-style-type: none"> NPS IRMA NPScape GIS analysis using landscape ecology tools (e.g., FragStats at http://www.treesearch.fs.fed.us/pubs/3064)

Untrammelled Quality

Monitoring Question	Indicator	Possible Measures	Likely NPS Data Sources
What are the trends in actions that control or manipulate the “Earth and its community of life” inside wilderness?	Actions authorized by the federal land manager that manipulate the biophysical environment	Number of actions to manage plants, animals, pathogens, soil, water, or fire	<ul style="list-style-type: none"> • Minimum requirements analyses • Wildland Fire Management Information records and/or fire narratives (DI-1202 or ICS209 forms) for fire incidents • National Fire Plan Operating and Reporting System for prescribed fire and fuel treatments • Alien Plant Control and Monitoring database for nonnative plant treatments • Other park specific data sources
		Percent of natural fire starts that received a suppression response	<ul style="list-style-type: none"> • Wildland Fire Management Information records for fire incidents (check with fire management officer for access to database at http://www.nifc.blm.gov/) and/or fire narratives (DI-1202 or ICS209 forms)
		Number of lakes and other water bodies stocked with fish	<ul style="list-style-type: none"> • Minimum requirements analyses • State wildlife agency records for game species • U.S. Fish and Wildlife Service records for threatened and endangered recovery species
	Actions not authorized by the federal land manager that manipulate the biophysical environment	Number of unauthorized actions by agencies, citizen groups, or individuals that manipulate plants, animals, pathogens, soil, water, or fire	<ul style="list-style-type: none"> • Law enforcement data systems (e.g., case incident reports)

Solitude Or Primitive And Unconfined Recreation Quality			
Monitoring Question	Indicator	Possible Measures	Likely NPS Data Sources
What are the trends in outstanding opportunities for solitude inside wilderness?	Remoteness from sights and sounds of people inside the wilderness	Amount of visitor use	<ul style="list-style-type: none"> Permit records, including number of permits, who issued them, where issued, type of use, number of people in party, trip itinerary
		Number of trail contacts	<ul style="list-style-type: none"> Trail counters Staff reports
		Number and condition of campsites	<ul style="list-style-type: none"> Campsite monitoring records (see Carhart Visitor Use Management training for more details)
		Area of wilderness affected by access or travel routes that are inside the wilderness	<ul style="list-style-type: none"> Facility Management System Software data NPS IRMA NPSCape
	Remoteness from occupied and modified areas outside the wilderness	Area of wilderness affected by access or travel routes that are adjacent to the wilderness	<ul style="list-style-type: none"> NPS IRMA NPSCape Agency GIS data systems Aerial photography GIS analysis using landscape ecology tools (e.g., FragStats at http://www.treesearch.fs.fed.us/pubs/3064)
		Night sky visibility averaged over the wilderness	<ul style="list-style-type: none"> National night sky visibility maps Local data if available from the NPS Night Sky Program
Extent and magnitude of intrusions on the natural soundscape		<ul style="list-style-type: none"> Soundscape data from the NPS Natural Sounds Program 	
What are the trends in outstanding opportunities for primitive and unconfined recreation inside wilderness?	Facilities that decrease self-reliant recreation	Type and number of agency-provided recreation facilities	<ul style="list-style-type: none"> Facility Management System Software data
		Type and number of user-created recreation facilities	<ul style="list-style-type: none"> Local knowledge Law enforcement data systems (e.g., case incident reports) Aerial photography for some types of facilities (e.g., social trails)
	Management restrictions on visitor behavior	Type and extent of management restrictions	<ul style="list-style-type: none"> Superintendent's Compendium Backcountry/wilderness permit terms and conditions

Undeveloped Quality

Monitoring Question	Indicator	Possible Measures	Likely NPS Data Sources
What are the trends in nonrecreational development inside wilderness?	Nonrecreational structures, installations, and developments	Index of authorized physical development	<ul style="list-style-type: none"> Local GIS data and FMSS for locations of communication installations, utilities, other rights-of-way, research installations, grazing infrastructure, etc.
		Index of unauthorized (user-created) physical development	<ul style="list-style-type: none"> Law enforcement data systems (e.g., case incident reports)
	Inholdings	Area and existing or potential impact of inholdings	<ul style="list-style-type: none"> NPS regional lands office records (may consider splitting apart state sections from private inholdings, divide by parcels with road access and those without, and include mining claims)
What are the trends in mechanization inside wilderness?	Use of motor vehicles, motorized equipment, or mechanical transport	Type and amount of administrative and nonemergency use of motor vehicles, motorized equipment, or mechanical transport	<ul style="list-style-type: none"> Extract from minimum requirements analyses
		Type and amount of emergency use of motor vehicles, motorized equipment, or mechanical transport	<ul style="list-style-type: none"> Extract from minimum requirements analyses Case incident reports for law enforcement and search and rescue operations Fire incident narratives (DI-1202 and/or ICS 209 reports)
		Type and amount of motor vehicle, motorized equipment, or mechanical transport use not authorized by the federal land manager	<ul style="list-style-type: none"> Case incident reports for law enforcement and search and rescue operations

Other Features Quality			
Monitoring Question	Indicator	Possible Measures	Likely NPS Data Sources
What are the trends in the preservation of cultural resources integral to wilderness character?	Deterioration or loss of cultural resources integral to wilderness character	Number of unauthorized actions that result in disturbances to cultural resources (looting, trespass activities, noncompliance with NHPA)	<ul style="list-style-type: none"> Citations, ARPA violations, Secretary's Annual Report to Congress, LOOT report in secretary's report, ASMIS and PMDS site condition reporting.
		Number of authorized actions that result in disturbances to cultural resources (visitor and commercial use (e.g., cat holes, trampling, hearths, aircraft landings); findings of adverse effect for projects and operations)	<ul style="list-style-type: none"> Citations, ARPA violations, Secretary's Annual Report to Congress, LOOT report in secretary's report, ASMIS and PMDS site condition reporting.
		Number of naturally caused disturbances (e.g., erosion, animal digging, floods, rising sea levels, fires, tree throws)	<ul style="list-style-type: none"> Citations, ARPA violations, Secretary's Annual Report to Congress, LOOT report in secretary's report, ASMIS and PMDS site condition reporting.
What are the trends in the preservation of paleontological resources in wilderness?	Human-caused loss of important paleontological resources	Number and severity of disturbances to paleontological resources	<ul style="list-style-type: none"> NPS Geologic Resources Division's literature based paleontological resource inventory (accessed via IRMA) I&M monitoring data Local data



The *Wilderness Stewardship Plan Handbook 2014* was prepared by the NPS Wilderness Character Integration Team. Principal authors:

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Wilderness Stewardship Plan Handbook

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

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