

Final Pilot Test Report:  
A National Protocol to Evaluate Trends in Wilderness Character

October 2006

"We invest so little in our wilderness outside of trail maintenance and patrol; I contend we really know very little about what's happening out there. I find this new protocol to be a great tool to capture a picture of present condition. With periodic monitoring, we can track changes over time and actually practice adaptive management. "

-- Gabe Garcia, District Ranger, San Bernardino National Forest



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## Executive Summary

The Wilderness Act of 1964, and all subsequent wilderness legislation, requires the agencies responsible for managing wilderness to “*preserve wilderness character.*” Wilderness character has never been defined in terms that allow the Forest Service to evaluate trends in wilderness character, despite 40 years of wilderness management experience and managers calling for better monitoring of management outcomes. To fill this gap, a nationally consistent protocol for monitoring wilderness character has been under development by wilderness managers and researchers since 2002, including the development of *Monitoring Selected Conditions Related to Wilderness Character: A National Framework* (RMRS-GTR-151), the conceptual foundation for the protocol, and a draft Technical Guide.

The monitoring protocol was pilot tested in each of the nine Forest Service Regions in FY 2006. The first four tests were conducted with the national monitoring team onsite to observe the pilot test; the remaining tests attempted to more closely replicate the implementation environment by having the national team provide support remotely. A total of 121 Forest Service personnel participated in these tests, including 23 wilderness managers, 95 resource specialists, such as wildlife biologists, air resource managers and engineers, and 3 district rangers.

The primary findings from the pilot test were:

1. All local pilot test participants felt implementation of the protocol would improve their understanding of wilderness character.
2. All but one of the local pilot test participants felt wilderness character monitoring was worthwhile.
3. Not all measures were relevant in every wilderness, but all measures had relevance in a majority of wildernesses.
4. Despite the diversity of wilderness across the country, the rationale for this monitoring made sense and was applicable across the entire system of 407 FS wildernesses.
5. The completeness and accuracy of data currently stored in corporate and external information systems varies greatly.
6. All pilot test participants felt the protocol was do-able and the anticipated workload was reasonable.
7. The Technical Guide was well organized and clearly written, though the need for a shorter, more user friendly version was voiced by many.
8. Staff preferred to receive training in different formats, including both classroom and remote offerings.
9. The proposal to have centralized project staff made sense and was supported by the test participants.

As a result of pilot testing, the national protocol to monitor wilderness character is moving forward with a proposal for implementation, largely intact, though several substantive edits were made to the Technical Guide, and a number of other actionable items identified.

## **Background:**

The USDA Forest Service Wilderness Program began working in 2002 to develop a national protocol for evaluating changes in wilderness character in all 407 agency wildernesses. The protocol will allow the agency to determine the outcome of management decisions and actions to fulfill the Wilderness Act of 1964 mandate and Forest Service policy requiring the “preservation of wilderness character.” *Monitoring Selected Conditions Related to Wilderness Character: A National Framework* (RMRS-GTR-151), the conceptual foundation for the protocol, was published in April 2005 as a Forest Service Research General Technical Report, and a 200-page draft Technical Guide has been completed.

The objectives of pilot testing were to: (1) evaluate the rationale for this monitoring, and the organization and writing of 225-page Technical Guide; (2) evaluate the relevance of all the measures to each of the individual test sites; (3) test the applicability of the Infra-WILD Wilderness Character Module as the central site for conducting the monitoring protocol; (4) formulate the basis for developing a proposal for protocol implementation based on the number of hours spent doing all the various tasks; and (5) increase awareness about the monitoring protocol.

Pilot testing was conducted in every region during FY 2006. Pilot test sites were identified based on specific criteria, rather than soliciting volunteer sites, to ensure the protocol was subjected to a balanced, rigorous test. The nine test wildernesses were then divided into Phase I and Phase II tests. Phase I involved having the pilot test team travel on-site to conduct the testing, allowing the team to fully discuss and understand any concerns or problems that arose, and revise the Technical Guide and Infra-WILD module as needed before the next pilot test. In contrast, Phase II entailed having the forest staff conduct the testing with only remote support from the pilot test team, allowing a more realistic testing of the protocol.

A proposal was submitted in May 2005 to the Ecosystem Management Staff for funding that was necessary to conduct the pilot testing. The initial request of \$270,000 was funded in full. The funding was used largely to hire a Data Analyst for the project, and to provide salary support to the pilot test sites.

## Process Used:

Pilot testing, from initial design through implementation, lasted approximately 9-months – from October 2005 through June 2006, and consisted of several relatively distinct steps.

1. Forming the project team:

The core pilot test team consisted of Steve Boutcher (WO-WWSR Staff) and Peter Landres (RMRS, Aldo Leopold Wilderness Research Institute) as co-leads for the pilot testing and Andy Leach (WO-Inventory & Monitoring Institute, contractor) as the Data Analyst to provide recommendations on all statistical and other design issues. The extended team consisted of Rob Stokes, Rich Adams, Scott Delucero and Kristen Holland (Infra Project, Lakewood, CO) who developed the data entry screens, database and user support materials, as well as Linda Merigliano, Liese Dean and Troy Hall, who are members of the Technical Guide Development Team.

2. Selecting and scheduling the pilot test wildernesses:

Selection criteria were developed to ensure the protocol was subjected to a robust and representative test. Criteria included: workload complexity, size, age of the wilderness, single unit vs. shared management, urban proximate vs. remote, and presence of legislated special provisions. Commitment to participate in the pilot tests was secured with the assistance of the regional wilderness program managers and local pilot test contacts were identified and a pilot test schedule developed.

3. Developing the Infra-WILD Wilderness Character module test version:

The project core team worked with the Infra staff to develop a prototype version of the Infra-WILD Wilderness Character module, focusing primarily on the database and the data entry/validation screens. Representative online user support materials were also produced for the purpose of receiving feedback during pilot testing.

4. Developing pilot testing materials:

Various materials were developed to support both phases of the testing, including PowerPoint presentations, detailed step-by-step instructions, data collection spreadsheets, questions about specific protocol details, and debriefing questions about the overall usefulness of monitoring.

5. Preparing the test sites:

Introductory meetings were held between the core team and the local pilot test leads to discuss the overall objectives of wilderness character monitoring, and for pilot testing in particular. The meetings also covered the details of the process to be used during the testing week as well as the types of resources specialists who likely would be involved. The local test leads were also sent background materials including the Framework publication and the Technical Guide.

6. Conducting the pilot tests:


Testing was conducted for only one wilderness in a particular week, with testing lasting from 3-5 days depending on the complexity of the wilderness. The Phase I test (Regions 4, 6, 8 and 10) involved the test core team traveling to the host site to work directly with the local test participants. These tests provided a thorough discussion of why the individual measures were selected, as well as issues related to data adequacy. The Phase II tests in the remaining regions were conducted by local staff with remote support from the core team. These tests provided a thorough review of the Technical Guide document. Most tests involved other observers, including regional wilderness specialists and representatives from the Wilderness Advisory Group or Wilderness Monitoring Committee.

7. Debriefing local pilot test participants:


All tests concluded with a debriefing. For Phase I tests this debriefing was a face-to-face discussion, and for Phase II tests this was a phone conversation. In both types of tests both local test participants and line officers were invited. The set of debriefing questions was given to local test participants before the test began so they would know what questions we ultimately wanted them to answer.

## Summary of Pilot Test Wildernesses:

The pictures and accompanying narrative showcase the diversity of the wildernesses tested. The supplementary bulleted text provides additional detail about each test, including the number of test participants (both wilderness managers and other resource specialists), as well as the number of measures which were found to be relevant.

Selway-Bitterroot Wilderness, Idaho/Montana (R1)	
	<p>The Bitterroot Mountains form a rugged, glacier-carved border between Idaho and Montana. On both sides of this border is the Selway-Bitterroot Wilderness, the third largest Wilderness in the Lower 48 and is managed by four national forests in two regions. The area is dominated by ridges broken with raw granite peaks. Below the ridges are deep canyons covered with thick coniferous forest. Hidden low valleys are rich with old-growth cedar, fir, and larch.</p>

- Testing dates: May 8 – 12, 2006
- Pilot test type: Phase II
- Pilot test contact(s): Deb Gale, Marti Almquist
- Number of test participants: 33 (6-wilderness staff, 27-other resources)
- Number of relevant measures: 30 out of 34 (21 were “highly relevant”)
- Estimate of local workload: 110 hours

Raggeds Wilderness, Colorado (R2)	
	<p>Prominent rocky slopes striking skyward to a serrated ridge give Raggeds Wilderness its well-deserved name. Ragged Mountain in the northern half rises to 12,094 feet, but other wonderfully scenic peaks crest higher. Dense coniferous forests cover the creek bottoms and numerous aspen groves provide a brilliant fall display. Despite having 50 miles of trail, this wilderness escapes some of the heavy use experienced by other Colorado wildernesses because of its remote location and the absence of any 14,000 ft. peaks.</p>

- Testing dates: May 15 – 19, 2006
- Pilot test type: Phase II
- Pilot test contact(s): Vic Ullrey
- Number of test participants: 20 (2-wilderness staff, 18-other resources)
- Number of relevant measures: 26 out of 34 (16 were “highly relevant”)
- Estimate of local workload: 25.5 hours

### Superstition Wilderness, Arizona (R3)



The Superstition Wilderness typifies the Sonoran Desert, with desolate and barren mountains, seemingly endless and haunting canyons, raging summer temperatures that can surpass 115 degrees Fahrenheit, and a general dearth of water. The close proximity of the wilderness to Phoenix assures heavy recreation use, though most use is concentrated on a few trails and is limited to single day visits.

- Testing dates: June 26 – 30, 2007
- Pilot test type: Phase II
- Pilot test contact(s): Scotty McBride
- Number of test participants: 10 (1-wilderness, 8-other resources, 1-district ranger)
- Number of relevant measures: 27 out of 34 (19 were “highly relevant”)
- Estimate of local workload: 82.5 hours

### La Madre Mountain Wilderness, Nevada (R4)



In 2002, the United States Congress designated 47,279 acres as the La Madre Mountain Wilderness to be managed by the Bureau of Land Management and the Forest Service. The area contains a rugged complex of canyons, ridges and mountain peaks. La Madre Mountain dominates the area with spectacular cliffs and steep canyons occurring on its southeast flanks. Elevations range from 3,600 feet in Brownstone Basin to 9,600 feet at La Madre Mountain. Though only 12-miles from Las Vegas, the area has yet to receive much recreation use due primarily to the absence of recreation trails and facilities.

- Testing dates: April 17 – 21, 2006
- Pilot test type: Phase I
- Pilot test contact(s): Amy Meketi
- Number of test participants: 9 (2-wilderness staff, 7-other resources)
- Number of relevant measures: 18 out of 34 (15 were “highly relevant”)
- Estimate of local workload: 28.5 hours

### San Gorgonio Wilderness, California (R5)



One of the original wildernesses established by the Wilderness Act of 1964, this Wilderness is located in the southeast portion of the San Bernardino Mountains on lands administered by the San Bernardino National Forest and the Bureau of Land Management. Most of the Wilderness is above the 7,000 foot level. Two small lakes, several meadows, and large, heavily forested areas provide a beautiful sub-alpine oasis in the dry lands that surround the mountain range. The isolated environment contains many threatened and endangered plant and animal species, as well as bear, deer, mountain lions and bighorn sheep.

- Testing dates: June 5 – 9, 2006
- Pilot test type: Phase II
- Pilot test contact(s): Bob Wood, Sharon Barfknecht
- Number of test participants: 10 (2-wilderness, 7-other resources, 1-district ranger)
- Number of relevant measures: 25 out of 34 (18 were “highly relevant”)
- Estimate of local workload: 64.5 hours

### Alpine Lakes Wilderness, Washington (R6)



From wet forests of Douglas fir, cedar, and western hemlock on the west side of the crest, to dry forestland of ponderosa pine and lodgepole pine on the east side, “diverse” is the word that best describes the Alpine Lakes Wilderness. This large, complex wilderness (362,789 acres) is jointly managed by the Okanogan-Wenatchee and Mt. Baker-Snoqualmie National Forests and contains some of the most spectacular scenery in the Cascade Mountains, receiving heavy recreation use from nearby Seattle and the Puget Sound Region.

- Testing dates: March 20 – 24, 2006
- Pilot test type: Phase I
- Pilot test contact(s): Jim Archambeault, Gary Paull
- Number of test participants: 18 (5-wilderness staff, 12-other resources, 1-district ranger)
- Number of relevant measures: 32 out of 34 (22 were “highly relevant”)
- Estimate of local workload: 149.5 hours

### Dugger Mountain Wilderness, Alabama (R8)



The Dugger Mountain Wilderness was established in 2001, making it one of the most recent additions to the National Wilderness Preservation System. The area encompasses approximately 9,200 acres and contains some of the most rugged mountainous terrain in Alabama, culminating at the peak of Dugger Mountain (2,140'), the second highest point in the state. The wilderness provides refugia for numerous threatened and endangered plant communities.

- Testing dates: February 7 – 9, 2006
- Pilot test type: Phase I
- Pilot test contact(s): Billy Goodson
- Number of test participants: 7 (2-wilderness staff, 5-other resources)
- Number of relevant measures: 25 out of 34 (13 were “highly relevant”)
- Estimate of local workload: 57.5 hours

### Round Island Wilderness, Michigan (R9)



Round Island Wilderness, at 378 acres, is one of the smallest units in the system and is unique due to its location in Lake Huron, near the intersection with Lake Michigan. Though the island receives little use today, several prehistoric and historic sites are evident. Despite the relative tranquility on the island, nearby Mackinac Island receives heavy boat traffic.

- Testing dates: June 12 – 16, 2006
- Pilot test type: Phase II
- Pilot test contact(s): Martie Schramm, Patty Verwiebe
- Number of test participants: 8 (1-wilderness, 7-other resources)
- Number of relevant measures: 17 out of 34 (0 were “highly relevant”)
- Estimate of local workload: 12.5 hours

## Kootznoowoo Wilderness, Alaska (R10)



This large Alaskan wilderness on Admiralty Island near Juneau contains over 900,000 acres and represents some of the wildest country in the National Wilderness Preservation System. The wilderness consists of dense spruce forests, sphagnum bogs and rocky peaks and is perhaps best known for the exceptional brown bear viewing at Pack Creek.

- Testing dates: January 23 – 27, 2006
- Pilot test type: Phase I
- Pilot test contact(s): John Neary
- Number of test participants: 6 (2-wilderness staff, 4-other resources)
- Number of relevant measures: 29 out of 34 (12 were “highly relevant”)
- Estimate of local workload: 54 hours

## **Primary Findings:**

- 1. All local pilot tests participants felt implementation of the protocol would improve their understanding of wilderness character.**

At the debriefing session, held at the end of the test, each local wilderness manager was asked if the protocol accurately represented what they felt wilderness character was on the ground, and if it would help them better understand how wilderness character was changing in their wilderness. All nine managers answered positively to both questions. A number of these managers voiced concerns about how they believed wilderness character was degrading and wanted to tool to defensibly show this decline, whereas a couple of managers believed that wilderness character was actually improving due to their intentional stewardship actions, and they were looking forward to implementation of the protocol because it would demonstrate the progress they were making.

- 2. All but one of the local pilot test participants felt wilderness character monitoring was worthwhile.**

At the debriefing session the wilderness manager was asked “Is this monitoring of wilderness character worth your time and effort?” Eight of the nine people asked this question said “yes.” These responses echoed several recurrent themes about the benefits of the protocol:

- *The protocol will yield useful information for guiding their stewardship actions.* Current approaches, such as NEPA decisions and Minimum Requirement Decision Guide analyses look at discrete actions, whereas wilderness character monitoring looks at the cumulative effect of all of these activities.
- *The protocol provides visibility to the wilderness program,* which is sorely lacking on some forests and it provides a wonderful opportunity for engaging line officers on the topic of wilderness stewardship.
- *The protocol provides a powerful tool for encouraging integration with other resources.* It will help to dispel the notion that wilderness is only of interest to recreation managers. It should be noted that this point is not only important for other resource programs that have a role in wilderness, but for wilderness managers themselves.

The one wilderness manager who responded negatively to this question felt that although the protocol would be useful for showing trends in wilderness character, this issue was not at the top of their list of priority topics.

**3. Not all measures were relevant in every wilderness, but all measures had relevance in a majority of wildernesses.**

One of the more important aspects of the pilot testing from the development perspective was validating whether the proposed indicators and measures made sense in wildernesses across the country. Clearly not all measures made sense everywhere, which was expected. Those wildernesses without grazing allotments, for example, could not respond to the measure “# of acres of active grazing allotments.” What was found through the pilot testing, however, was that all measures had relevance in the majority of wildernesses. As a result of pilot testing, two new measures were added: “# of lakes and other water bodies stocked with fish” and “# of acres of inholdings.”

**4. Despite the diversity of wilderness across the country, the rationale for this monitoring made sense and was applicable across the entire system of 407 Forest Service wildernesses.**

The criteria that were developed to identify pilot test wildernesses ensured that the protocol would be evaluated in areas representative of the breadth and diversity of units in the system – from a small, rural wildernesses in the South to a large island wilderness in Alaska – and everything in between. Pilot testing affirmed that the process used to disaggregate wilderness character into four qualities, and then further into monitoring questions, indicators, and measures was logical and defensible.

**5. The completeness and accuracy of data currently stored in corporate and external information systems varies greatly.**

The current state of data in corporate information systems varies from one forest to the next. Pilot testing indicated a few major deficiencies:

- Not all corporate information systems are used uniformly. An objective of pilot testing was to check on the availability and quality of data stored in “corporate information systems”, which primarily means Infra and NRIS (Natural Resource Information System). These two systems have different purposes, so comparisons may be unfair. The testing showed that Infra is used everywhere, though the completeness and quality of the data vary widely. However, none of the units visited during pilot testing were using NRIS, though several mentioned they did have future plans to do so. As a result, those measures in the Natural Quality which were going to rely on NRIS data, such as “% of wilderness acres with invasive plant species that are not indigenous to the wilderness,” will need to rely on professional estimation instead.
- Data quality varies greatly. The quality of data varies from excellent to poor, sometimes on forests sharing management of an individual wilderness. For

example, all forests have been instructed to identify which segments of trails are inside wilderness in the Infra-Trails module. However, a couple of the wildernesses visited had not yet completed this task, despite the fact that this requirement has been in place for several years and is considered the standard for trails data. Even data from external sources is not immune to these issues. During the testing it was discovered that a dam from the Army Corps of Engineers National Inventory of Dams was located on the wrong side of the cascade crest.

**6. All pilot test participants felt the protocol was do-able and the anticipated workload was reasonable.**

At the debriefing session, each wilderness manager expressed their view that the expectations for implementing the protocol were reasonable and that the workload was not too onerous. This opinion was typically voiced with two caveats: (1) that funds be provided to cover their salary while committed to wilderness character monitoring tasks; and (2) that adequate lead-time be provided so that forests could plan appropriately to minimize the impacts to their regular duties.

All forest staff involved in pilot testing were uniformly responsive and professional in conducting tasks in a timely manner. This finding bodes well for implementation. It's worth repeating that forests did not volunteer for this test but rather were selected through established criteria.

**7. The Technical Guide was well organized and clearly written, though the need for a shorter, more user friendly version was voiced by many.**

All pilot test sites praised the thoroughness and breadth of the Technical Guide, though many also voiced concern that the field needs a simpler document which skips over much of the background material. "Just tell us what needs to get done" was a common comment.

**8. Staff preferred to receive training in different formats, including both classroom and remote offerings.**

Staff were asked about their preference for how they would like to receive training, either in a classroom setting or remotely at their home units. The respondents said that both methods were needed. The interest for training offered in classrooms was somewhat unanticipated, considering the current lack of travel funds and time to attend training. However, several staff offered that they learned much better in classroom training and that training taken remotely from their home unit was often less than successful because of their inability to focus on the subject at hand. Others said they preferred to receive their training remotely.

**9. The proposal to have centralized project staff made sense and was supported by the test participants.**

Pilot test participants were asked if they supported the proposal of establishing centralized staff to remove some of the workload burden, and this concept was unanimously supported. Field staff want to minimize their role to the extent possible, providing input into the process that cannot be provided elsewhere.

## **Actions Resulting from Pilot Testing:**

The “Quality Leads” for the Technical Guide Development Team met in Ft. Collins, CO during the week of July 24, 2006 to review the pilot test results and develop recommendations for implementation.

The most important question was “did we learn anything from pilot testing that would suggest we not advance a proposal for implementation?” and the answer was “no.” The need for the protocol was strongly supported, the approach used to identify national core measures by tiering back to the Wilderness Act made sense, and the workload associated with implementing the protocol was reasonable – which was quite remarkable considering the current over-worked state of many field wilderness managers.

Review of the existing list of measures and components of certain measures showed that all were relevant in a majority of wildernesses and should remain. As previously noted, two additional measures were added as a result of feedback received during pilot testing. The total list of measures and measure components is now 34. The team felt that wilderness character is an incredibly complex concept, and the more measures used to inform staff about its status and trends, the more scientifically defensible it is. Clearly this “more is better” approach needs to be tempered by workload and cost, and test participants felt that the current list was reasonable.

Though concerns about the adequacy of existing data were known prior to testing, the test results confirmed and somewhat amplified these fears. This reality confirms the approach already used in the protocol of having local staff validate all data from corporate systems prior to their use in the protocol. It would be folly to assume data from these systems were suitable without first being reviewed. Additionally, the technical guide will be modified to better track the adequacy of the data (in terms of “quantity” and “quality”) used for each measure for use in the interpretation process.

If implementation of the protocol is approved, a field-oriented version of the Technical Guide will be developed – as was the plan prior to pilot testing. The document, known as the “Desk Guide,” will provide step-by-step instructions for completing the field requirement for implementation of the protocol.

## **Lessons Learned About Pilot Testing**

A number of lessons were learned during this pilot testing that may have some relevance to future national monitoring protocol pilot tests.

1. The administrative workload associated with conducting nine pilot tests was substantial. This realization led to an expanded and more realistic view of the centralized workload associated with national implementation (80+ wildernesses a year).
2. Having funds to cover salary of the local pilot test leads, as well as travel costs for other participants, was key for conducting the tests on the selected wildernesses. Without these funds, volunteer sites would have been solicited, which would have biased the results.
3. Scheduling time for all of the participants needs to be done well in advance. This project scheduled the time of the local pilot test lead several months ahead of the test, but the other resources specialists were not contacted until the week before, or in some cases, at the start of the pilot test week. The need for advance scheduling is particularly true for line officers.
4. The amount of work expected to be accomplished in a single week of testing was not realistic. Test participants did not have adequate time to do all of the aspects of the review initially anticipated. This realization became painfully obvious after the first test, and priorities for the testing were then established for subsequent tests. What survived was the testing of the technical guide, and the relevance of the indicators and measures, the adequacy of the existing data, and the workload associated with getting them into the system. What did not survive was the hands-on testing of the Infra-WILD Wilderness Character module and supporting user documentation.
5. Clear, upfront communication about the goals of the monitoring protocol is key. Though the local pilot test leads had been briefed on these goals before pilot testing started, several other resource specialists were discouraged to learn during the actual testing that the protocol did not contain new field data collection in their area of specialty, and as a result, left with a less than satisfied opinion.

**Appendices:**

**A - Table of Measure Relevance by Pilot Test**

**B - Guide to Phase II Pilot Testing**

**C - Task List for Phase II Pilot Testing**

**D - Debriefing Questions for Phase II Pilot Testing**

**E - Resolution of Issues Raised During Pilot Testing**

APPENDIX A

Pilot Test Relevance of Wilderness Character Monitoring Measures in All FS Regions, July 2006

QUALITY OF WILDERNESS	MEASURE	IS THE MEASURE RELEVANT LOCALLY? (NO, LOW, HIGH)									
		R1	R2	R3	R4	R5	R6	R8	R9	R10	MEASURE TOTALS
Untrammeled	# of actions to manage:										
	• Vegetation	High	High	Low	High	High	Low	High	Low	Low	High = 5 Low = 4 No = 0
	• Fish, wildlife, insects and disease	High	High	High	Low	High	High	High	Low	Low	High = 6 Low = 3 No = 0
	• Soil and water	Low	High	High	No	Low	Low	Low	Low	No	High = 2 Low = 5 No = 2
	• Fire	High	Low	Low	No	Low	No	Low	Low	No	High = 1 Low = 5 No = 3
	% of naturally-ignited fires that are not managed as wildland fire use	High	High	High	No*	Low	High	High	Low	Low	High = 5 Low = 3 No = 1*
	# of lakes and other water bodies stocked with fish	High	High	No	No	No	High	No	No	High	High = 4 Low = 0 No = 5

\* = Measure is currently of no relevance at the La Madre Mountain Wilderness but is expected to be of high relevance in the near future when the new wilderness plan is implemented.

QUALITY OF WILDERNESS	MEASURE	IS THE MEASURE RELEVANT LOCALLY? (NO, LOW, HIGH)									MEASURE TOTALS
		R1	R2	R3	R4	R5	R6	R8	R9	R10	
<b>Natural</b>	Ozone exposure statistic N100	Low	Low	Low	High	High	Low	High	Low	Low	High = 3 Low = 6 No = 0
	Ozone exposure statistic W126	Low	Low	Low	High	High	Low	High	Low	Low	High = 3 Low = 6 No = 0
	Concentration of sulfur in wet deposition	High	Low	Low	High	High	High	Low	Low	Low	High = 4 Low = 5 No = 0
	Concentration of nitrogen in wet deposition	High	Low	Low	High	High	High	Low	Low	Low	High = 4 Low = 5 No = 0
	# of dams inside wilderness	High	No	High	No	No	High	No	No	Low	High = 3 Low = 1 No = 5
	% of wilderness acres with invasive plant species that are not indigenous to the wilderness	High	High	High	High	High	High	High	Low	High	High = 8 Low = 1 No = 0
	# of non-plant species of concern that are not indigenous to the wilderness	No	High	High	High	High	High	High	No	High	High = 7 Low = 0 No = 2
	# of acres of active grazing allotment	No	High	High	No	No	Low	No	No	No	High = 2 Low = 1 No = 6
	Average sum of anthropogenic fine nitrate and sulfate	High	Low	High	High	High	High	High	Low	Low	High = 6 Low = 3 No = 0

QUALITY OF WILDERNESS	MEASURE	IS THE MEASURE RELEVANT LOCALLY? (NO, LOW, HIGH)									
		R1	R2	R3	R4	R5	R6	R8	R9	R10	MEASURE TOTALS
	Average deciview	High	Low	High	High	High	High	High	Low	Low	High = 6 Low = 3 No = 0
	# of indigenous plant and animal species that have been extirpated	Low	No	High	No*	High	High	High	No	High	High = 5 Low = 1 No = 3*

\* = Measure is currently of no relevance at the La Madre Mountain Wilderness but is expected to be of high relevance in the near future when the new wilderness plan is implemented.

QUALITY OF WILDERNESS	MEASURE	IS THE MEASURE RELEVANT LOCALLY? (NO, LOW, HIGH)									MEASURE TOTALS
		R1	R2	R3	R4	R5	R6	R8	R9	R10	
Undeveloped	Index of physical development:										
	• Buildings	High	No	No	No	No	Low	No	No	High	High = 2 Low = 1 No = 6
	• System trails and features	High	High	High	No*	High	High	High	No	Low	High = 6 Low = 1 No = 2*
	• Dams & instream structures	High	No	High	No	No	High	No	No	Low	High = 3 Low = 1 No = 5
	• Roads	No	No	No	Low	No	No	High	No	No	High = 1 Low = 1 No = 7
	• Utility infrastructure	Low	No	No	No	Low	Low	No	No	Low	High = 0 Low = 4 No = 5
	• Mines	Low	High	Low	No	Low	Low	Low	No	Low	High = 1 Low = 6 No = 2
	• Fixed instrument sites	No	No	No	No	No	Low	No	No	Low	High = 0 Low = 2 No = 7
	# of mechanical transport use days authorized	High	High	Low	High	High	High	Low	No	Low	High = 5 Low = 3 No = 1

QUALITY OF WILDERNESS	MEASURE	IS THE MEASURE RELEVANT LOCALLY? (NO, LOW, HIGH)									
		R1	R2	R3	R4	R5	R6	R8	R9	R10	MEASURE TOTALS
	# of motorized equipment use days authorized	High	High	High	High	High	High	Low	No	High	High = 7 Low = 1 No = 1
	# of acres of inholdings	High	High	No	No	No	High	High	No	High	High = 5 Low = 0 No = 4

\* = Measure is currently of no relevance at the La Madre Mountain Wilderness but is expected to be of high relevance in the near future when the new wilderness plan is implemented.

QUALITY OF WILDERNESS	MEASURE	IS THE MEASURE RELEVANT LOCALLY? (NO, LOW, HIGH)									
		R1	R2	R3	R4	R5	R6	R8	R9	R10	MEASURE TOTALS
<b>Outstanding opportunities for solitude or a primitive and unconfined type of recreation</b>	# of acres of wilderness away from access and travel routes	High	High	High	High	High	High	Low	Low	High	High = 7 Low = 2 No = 0
	# of parties visiting a wilderness during the primary use season	High	Low	High	No	High	High	No	Low	High	High = 5 Low = 2 No = 2
	# of adult wilderness users residing in the service area	High	High	No	High	Low	Low	Low	No	High	High = 4 Low = 3 No = 2
	NVUM annual wilderness visits per region	High	No	High	Low	Low	High	Low	Low	High	High = 4 Low = 4 No = 1
	Index of recreation facilities	Low	Low	High	No	No	High	No	No	High	High = 3 Low = 2 No = 4
	# of trail miles in developed condition classes (classes 3 to 5)	Low	Low	High	High	High	High	Low	No	High	High = 5 Low = 3 No = 1
	Index of restrictions on visitor behavior	Low	High	High	High	High	High	Low	Low	High	High = 6 Low = 3 No = 0

## APPENDIX B

### GUIDE TO PHASE II PILOT TESTING WILDERNESS CHARACTER MONITORING

Ultimately, in this pilot test we'll be asking you to answer 3 different sets of questions:

- Questions about the functionality of the Technical Guide; these questions are in the "Task list for pilot testing" file and are highlighted in italics.
- Questions about the measures that will be monitored; these questions are in the "Pilot test comments on measures" file at the top of the table.
- Questions about the overall monitoring protocol; these questions are in the "Debriefing questions" file.

#### Prepare for the pilot test

1. Review the Tentative Schedule to see the approximate timing for the week's tasks.

2. Briefly review the Technical Guide:

- Review the Table of Contents to see what's included
- In the Table of Contents, note how each quality of wilderness character (Untrammelled, Natural, Undeveloped, and Outstanding opportunities for solitude or a primitive and unconfined type of recreation) is divided into "monitoring questions," "indicators," and "measures."
- Thumb through and read the section headings, but don't read in detail unless you want to, the Key Concepts, pages 8-12.
- Thumb through, but don't read in detail, one of the measures to see the type of information the Technical Guide offers for each measure. For example, on page 54 the measure for "fires suppressed" has the following sections:
  - Why is this measure important?
  - What are the attributes of this measure?
  - How will the data be collected?
  - How complete are these data?
  - How will the data be processed and analyzed?
  - What are the cautions about this measure?

3. Briefly review the Task List:

- This is the step-by-step set of tasks that you can use as a checklist for this pilot test
- Thumb through the entire Task List, noting that:
  - Major sections in the Task List are shown in bold text
  - Within each section, measures are shown in underlined text
  - Specific questions to be answered are shown in italics
  - Specific tables and page numbers in the Technical Guide are given that you'll need to refer to while you're doing this pilot test

- Within the Task List, other files are mentioned that you'll need to use throughout this pilot test. These other files are:
  - "Pilot test comments on measures" – this is for entering your answers to the questions about the measures.
  - "Centralized data" – these are data that our data analyst has pulled from national data sets for your wilderness
  - "5yr trends analysis" – this file shows how we are thinking about reporting the data for your wilderness

#### 4. Things to keep in mind:

- There is no actual data entry for any of the measures; instead, we're asking for your thoughts about things such as how complete the Technical Guide is, how relevant a measure is to your wilderness, and how well the Infra data capture what you know is happening on the ground.
- To answer some of the questions you may need to consult a Forest or District resource specialist. But, if you have the knowledge to answer these questions there is no need to consult with the resource specialist unless you would like that person to validate your answers.
- If you need help accessing Infra data, contact Steve.

#### Conduct the pilot test

1. Review the table of measures to identify resource specialists who need to be consulted, then scheduled throughout the week. If someone can't meet the week of the pilot test, you can email them the table of questions about the measures they would have input on, and they can just fill out the table and return it to you later on.

2. Begin testing one of the qualities (doesn't matter which one):

- Start with the first item on the Task List for that quality, which will be to review key items in the Technical Guide to prepare you for answering the questions about that quality. Continue following the numbered Task List for that quality.
- For each underlined measure in the Task List, refer to the Table in the Technical Guide as shown in the Task List.
  - Answer the questions in the Task List either directly in the Task List, or copy and paste the question into a separate file and answer it.
  - Fill in the Pilot Test Comments table.

3. After completing pilot testing for all the qualities, refer to the end of the Task List for directions on pilot testing:

- Analysis and presentation of data
- Synthesis rules
- Reporting
- Training

4. After completing all pilot testing, answer the questions in the Debriefing Questions file.
5. After the debriefing session at the end of the pilot test, email to Steve and Peter the following files:
  - Debriefing Questions with your answers
  - Pilot Test Comments on Measures with your answers
  - Task List with your answers to the questions, OR a separate file with just the questions and your answers

## APPENDIX C

### TASK LIST FOR PHASE II PILOT TESTING

The following instructions are a step-by-step guide to conducting this pilot test, with the understanding that the order of testing the measures will vary depending on the availability of the additional resource specialists. Page numbers in the Technical Guide (in parentheses) are given for each specific task. Specific questions we would like you to answer are given in italics; please either embed your answers below each question here or create a separate document that you copy and paste the questions into.

#### **Identify and schedule additional resource specialists**

1. Review table of indicators, measures, and data sources to identify specific resource specialists and other staff experts from each forest who will need to be consulted throughout this pilot test.
2. Contact each resource specialist to determine availability. The time required is very person-dependent, but will likely average about 30 minutes per person. The order of testing the different measures will be largely determined by the availability of these resource specialists. Unless they were at the briefing presentation on Monday, for each of the resource specialists you will likely need to introduce the purpose of this monitoring and what specific types of feedback from them we're looking for.
3. *What is the name, administrative unit, and title for all the resource specialists giving input at this pilot test?*

#### **Pilot test the untrammelled quality**

4. Review the sections on the one monitoring question (page 40) and the one indicator (page 41) for this quality.
5. Review the Measure 1 "management actions" (page 43) and how management "actions" are identified (page 45).
6. Pilot test the components of the Measure: actions that trammel.
  - A. Review "actions that manage vegetation" component with the vegetation resource specialist.
    - i. Review Table 7 (page 46). *Have any types of action occurred in this wilderness that are not covered in this table? If yes, what were these?*
    - ii. Fill in the Pilot Test Comments table for this component.
  - B. Review the "actions that manage fish, wildlife, insects, and disease" component with the wildlife, fish, or other resource specialist.
    - i. Review Table 8 (page 48). *Have any types of action occurred in this wilderness that are not covered in this table? If yes, what were these?*
    - ii. Fill in the Pilot Test Comments table for this component.
  - C. Review the "actions that manage soil and water" component with the soils and hydro resource specialist.

- i. Review Table 9 (page 49). *Have any types of action occurred in this wilderness that are not covered in this table? If yes, what were these?*
  - ii. Fill in the Pilot Test Comments table for this component.
- D. Review the “actions that manage fire” component with the fire and fuels resource specialist.
  - i. Review Table 10 (page 51). There are only two types of actions that could occur under this component.
  - ii. Fill in the Pilot Test Comments table for this component.
- 7. Review and pilot test the Measure: fires not managed as wildland fire use (page 53) with the fire and fuels resource specialist or the fire management officer.
  - A. Review Table 11 (page 54). *Can these ancillary data be collected (e.g., from dispatch)?*
  - B. Fill in the Pilot Test Comments table for this measure.
- 8. Review and pilot test the Measure: fish stocking (page 55) with the fisheries resource specialist.
  - A. Review Table 12 (page 56).
  - B. Fill in the Pilot Test Comments table for this measure.

#### **Pilot test the natural quality**

- 9. Review the discussion about the two monitoring questions in the Summary (page 57).
- 10. Review the discussion in the section “How will the indicators be used to answer this question?” about the three indicators that comprise the first monitoring question (page 59).
- 11. Review all four measures of air pollutants (pages 63, 69, 70, 82) together with the air resource specialist.
  - A. Pilot test the selection of monitoring sites in the Word document “Superstition centralized data” (provided as a separate file) with the air resource specialist. *Are these monitoring sites the appropriate ones to use for this wilderness?*
  - B. Fill in the Pilot Test Comments table for all four air pollutant measures. NOTE: these data will already be put into Infra so there is no time recorded for gathering or entering the data, but do record time for validating the monitoring sites selected.
- 12. Review and pilot test the Measure: dams (page 85) with the forest hydrologist.
  - A. Fill in the Pilot Test Comments table for this measure. NOTE: these data will already be entered into Infra Wilderness Character Module under the undeveloped quality so there is no time recorded for gathering, entering, or validating the data here.
- 13. Review the non-indigenous species indicator and that it is composed of three measures (pages 88)
- 14. Review and pilot test the Measure: non-indigenous plants (page 89) with the forest ecologist or botanist. Explain that the data requested is admittedly crude but it’s all that can be asked for at present. *Does it make more sense to use the broad percent categories, or a direct estimate of # of acres?*
  - A. Review Table 19 (page 90). *Do the thresholds for separating the different categories make sense, or should other thresholds be used?*
  - B. Fill in the Pilot Test Comments table for this measure.

15. Review and pilot test the Measure: other non-indigenous species (page 94) with the wildlife biologist, fisheries biologist, forest ecologist, or other appropriate resource staff.
  - A. Review Table 20 (page 94).
  - B. Fill in the Pilot Test Comments table for this measure.
16. Review and pilot test the Measure: grazing allotments (page 95) with the range staff specialist or wilderness staff.
  - A. Review Table 21 (page 96).
  - B. Fill in the Pilot Test Comments table for this measure.
17. For the Monitoring Question on Conditions Sensitive to Threats, review the first paragraph of the section "How will the indicators be used to answer the monitoring question" (pages 97 - 98).
18. Review the two air quality measures (pages 101, 104) together with the air resource specialist.
  - A. Pilot test the selection of monitoring sites in the Word document "Superstition centralized data" (provided as a separate file) with the air resource specialist. *Are these monitoring sites the appropriate ones to use for this wilderness?*
  - B. Fill in the Pilot Test Comments table for the two air quality measures. NOTE: these data will already be put into Infra so there is no time recorded for gathering or entering the data, but do record time for validating the monitoring sites selected.
19. Review and pilot test the Measure: extirpated plants and animals (page 107) with the forest ecologist/botanist and wildlife biologist.
  - A. Review Table 27 (page 108).
  - B. Fill in the Pilot Test Comments table for this measure.

### **Pilot test the undeveloped quality**

20. Review the three monitoring questions in the Summary (pages 111 - 112).
21. Review the indicator for the first monitoring question (page 114).
  - A. Review Table 30 on page 116. *Do you support the notion of assigning differential weights or do you think all types of physical evidence should be given the same weight?*
  - B. *Do these inherent weights make sense or would you recommend different values?*
22. Review and pilot test components of the Measure: physical evidence (page 118)
  - A. Review the "buildings" component (page 118) with the facilities engineer, or other staff responsible for structures, such as the special uses coordinator.
    - i. Review the data currently stored in the Infra-Buildings module. *Is this a current listing of all buildings in this wilderness?*
      - (a) *If no, would it be a reasonable expectation to enter the missing structures?*
    - ii. The relative weight for buildings keys off of the amount of time the building was occupied. *Do you support this decision, and if so, do the three values on the top of page 121 seem appropriate?*
    - iii. Fill in the Pilot Test Comments table for this component.
  - B. Review the "system trails & major trail features" component (page 121) with the trails manager and bridge engineer.

- i. Review the system trails data currently stored in the Infra-Trails module. *Is this a current listing of all system trails in this wilderness, and are the attributes in Table 32 (page 122), such as trail class and trail status entered correctly?*
    - (a) *If no, why not, and is it a reasonable expectation for these data to be entered?*
  - ii. The relative weight for system trails keys off of trail class. *Do you support this decision, and if so, do the three values for system trails on page 124 seem appropriate?*
  - iii. This protocol only counts trail bridges, stairways, boardwalks, docks and puncheon as “major trail features.” *Do you agree with this decision? Should any of these types be dropped or others added?*
  - iv. Review the major trail features data currently stored in the Infra-Trails module. *Is this a current listing of all major trail features in this wilderness, and are the attributes in Table 33 (page 122), such as “material” entered correctly?*
    - (a) *If no, why not, and is it a reasonable expectation for these data to be entered?*
  - v. The relative weight for major trail features keys off of the materials used to construct the specific feature. *Do you support this decision, and if so, do the three values for major trail features on page 124 seem appropriate?*
  - vi. Fill in the Pilot Test Comments table for this component.
- C. Review the “dams” component (page 124) with the dams engineer.
- i. Review the listing of wilderness dams in Infra-Dams and from the National Inventory of Dams (the NID data are included in the Word document “Superstition centralized data”) that is provided separately. *Is this listing complete?*
    - (a) *Are the needed attributes, particularly material type, correctly entered?*
    - (b) *How many dam records exist in Infra-Dams but are not currently linked to the wilderness they are located in?*
  - ii. The relative weight for dams keys off of both size and material type. *Do you support this decision, and if so, do the three values on page 128 seem appropriate?*
  - iii. This measure component may be broadened out to include “other instream structures” which also alter natural stream flow, such as weirs and fish ladders. *Would you support this expansion, and if so, what are the types of instream structures you would be interested in tracking?*
  - iv. Fill in the Pilot Test Comments table for this component.
- D. Review the “roads” component (page 128) with the roads engineer.
- i. Review the listing of roads in wilderness in the Infra-Roads module. Though there is presently no way to directly link these roads to wilderness, we need to assess whether or not they even have been entered into Infra. *Have all system roads inside of this wilderness been entered into Infra-Roads?*
    - (a) *Have the needed attributes been entered correctly (of greatest concern are “status” and “operational maintenance level”)?*
  - ii. The relative weight for roads keys off of whether or not the road has been decommissioned as well as the operational maintenance level. *Do you support this decision, and if so, do the three values on page 130 seem appropriate?*
  - iii. Fill in the Pilot Test Comments table for this component.

- E. Review the “utility infrastructure” component (page 130) with the staff responsible for utilities, typically staff in engineering as well as the special uses coordinator.
- i. In most cases, utility infrastructure will be authorized through a special use permit. *Do records exist in SUDS for the utility infrastructure you are aware of?*
    - (a) *What types of non-FS utility infrastructure exist in your wilderness?*
    - (b) *Is the listing of use codes on page 132 complete?*
    - (c) *Have these records already been linked to your wilderness in Infra?*
  - ii. In other cases, utility infrastructure may be owned by the FS. *Do records exist in the Infra-Features module for these features?*
    - (a) *What types of FS-owned utility infrastructure exist in your wilderness?*
    - (b) *Is the listing of feature types on page 132 complete?*
  - iii. The relative weight for utility infrastructure keys off of the size of the feature. *Do you support this decision, and if so, do the three values on page 133 seem appropriate?*
  - iv. Fill in the Pilot Test Comments table for this component.
- F. Review the “mines” component (page 134) with the mining engineer, geologist and/or archaeologist.
- i. *How many mines occur in your wilderness?*
  - ii. Review the list of attributes in Table 39 on page 134. *Would you be able to populate these attributes for all mines in your wilderness? If no, why not?*
  - iii. The relative weight for mines keys off of the activity level and size of the mine. *Do you support this decision, and if so, do the three values on page 136 seem appropriate?*
  - iv. Fill in the Pilot Test Comments table for this component.
- G. Review the “fixed instrumentation sites” component (page 136) with the special uses coordinator.
- i. In most cases, fixed instrumentation sites will be authorized through a special use permit. *Do records exist in SUDS for the fixed instrumentation sites you are aware of?*
    - (a) *What types of non-FS utility infrastructure exist in your wilderness? Is the listing of use codes on page 137 complete?*
    - (b) *Have these records already been linked to your wilderness in Infra?*
  - ii. In other cases, fixed instrumentation may be owned by the FS. *Do records exist in the Infra-Features module for these features?*
    - (a) *What types of FS-owned utility fixed instrumentation exist in your wilderness?*
    - (b) *Is the listing of feature types on page 138 complete?*
  - iii. Fill in the Pilot Test Comments table for this component.
23. Review the indicator for the second monitoring question (page 139). *Is it clear in the Technical Guide why this indicator is included in the Undeveloped Quality?*
24. Review and pilot test the Measure: mechanical transport use (page 141) with appropriate staff (wilderness, fire, law enforcement, etc.).
- A. This measure uses “mechanical transport use days” (defined on pages 142 - 143) as the unit which is reported. *Is this unit adequately described in the Technical Guide?*
  - B. *Will you be able to report this unit for all mechanical transport use authorizations?*
  - C. Fill in the Pilot Test Comments table for this measure.

25. Review and pilot test the Measure: motorized equipment use (page 143) with appropriate staff (wilderness, fire, law enforcement, etc.).
  - A. This measure uses “motorized equipment use days” (defined on page 144) as the unit which is reported. *Is this unit adequately described in the Technical Guide? Will you be able to report this unit for all motorized equipment use authorizations?*
  - B. Fill in the Pilot Test Comments table for this measure.
  - C. For these last two measures (mechanical transport and motorized equipment) it has been suggested that this monitoring track the “# of authorizations” instead of the “# of authorized use days.” *Which of these two alternatives would you prefer, and why?*
26. Instead of requesting the specific number of “use days” for the above two measures, the technical guide may be modified to request reporting of mechanical transport and motorized equipment by categories of the amount of use, such as:
  - One piece, one day
  - Multiple pieces, one day
  - One piece, up to one week
  - Multiple pieces, up to one week
  - One piece, more than a week
  - Multiple pieces, more than a week

*Would you prefer the continued use of “# of use days” or the above categories of use to report mechanical transport and motorized equipment use?*
27. Review the indicator for the third monitoring question (page 145).
28. Review the Measure: inholdings (page 146) with the lands staff.
  - A. *Is it clear in the Technical Guide why this indicator is included in the Undeveloped Quality?*
  - B. Data from the Automated Lands Project (ALP) will be used to initially populate the inholding information. *Are you aware if the data in ALP will accurately report the acres of inholdings in your wilderness?*
  - C. Fill in the Pilot Test Comments table for this measure.

**Pilot test the “outstanding opportunities” quality.**

29. Review the three monitoring questions in the Summary (pages 149 - 150).
30. Review the two indicators that comprise the first monitoring question (page 153).
31. Review and pilot test the Measure: # of acres away from access and travel routes (page 155). Refer to the Word document “Superstition centralized data” for a map and data.
  - A. *Do the different buffering distances on page 156 make sense to you?*
  - B. Fill in the Pilot Test Comments table for this measure.
32. Review and pilot test the Measure: # of parties visiting a wilderness during the primary use season (page 160).
  - A. *Do you have a wilderness permit system in place which could be used to develop defensible estimates of wilderness visitation?*
  - B. Fill in the Pilot Test Comments table for this measure.
33. Review and pilot test the Measure: # of adult wilderness users residing in the service area (page 163). Refer to the Word document “Superstition centralized data” for these data.

- A. *Does this approach make sense to you and do you think this measure could be used as a surrogate for wilderness visitation?*
  - B. Fill in the Pilot Test Comments table for this measure. (NOTE: no gathering or entering time is needed for this measure because the data will come directly from the wilderness character data analyst; please enter just the time needed to validate these data).
34. Review and pilot test the Measure: NVUM annual wilderness visits per region (page 168). Although the NVUM data does not provide wilderness specific estimates of visitation, it does provide meaningful numbers at the regional level. Refer to the Word document "Superstition centralized data" for these data.
- A. *Do you have confidence in the numbers generated for wilderness visitation on your forest? If yes, why? If no, why?*
  - B. Fill in the Pilot Test Comments table for this measure. (NOTE: no gathering or entering time is needed for this measure because the data will come directly from the wilderness character data analyst; please enter just the time needed to validate these data).
35. Review the two indicators that comprise the second monitoring question (page 171).
36. Review and pilot test the Measure: index of recreation facilities (page 172).
- A. *Is the listing of recreation facility types in Table 55 (page 173) complete? If no, what values need to be added?*
  - B. Fill in the Pilot Test Comments table for this measure.
37. Review and pilot test the Measure: # of trail miles in developed conditions classes (page 176).
- A. System trail miles in trail classes 1 and 2 can be added without affecting this measure. *Does focusing exclusively on trail miles in condition classes 3 through 5 make sense to you?*
  - B. Fill in the Pilot Test Comments table for this measure.
38. Review the indicator for the third monitoring question (pages 178 - 179).
39. Review and pilot test the Measure: index of restrictions on visitor behavior (page 179).
- A. This measure relies on the data currently stored in Infra-WILD. Please review the wilderness regulations already entered into Infra-WILD for your wilderness. *Are all of your wilderness regulations authorized through forest special order entered into Infra-WILD?*
  - B. *For those regulations which only apply for a portion of a wilderness, are they correctly entered (for example, regulations are entered for an administrative subdivision or a wilderness sub-area)?*
  - C. Differential weights are assigned to the different regulations, as described in Table 58 (page 182). *Do you have any suggested edits to this table?*
  - D. Fill in the Pilot Test Comments table for this measure.

### **Pilot test the analysis and presentation of results**

40. Review the Word document "5-yr trends analysis" (provided as a separate file) that shows an analysis of trends for the air pollutant measures.
- A. *Is this analysis and presentation of results helpful in understanding how the measures are changing over time?*
  - B. *Are there any other analysis and presentation tools that you would like to be used?*

### **Pilot test the synthesis rules**

41. Review the reasons and rules for synthesizing across all the different levels of this monitoring (measures, indicators, monitoring questions, and qualities of wilderness character) in the Chapter on Assessing Trends in Wilderness Character (pages 21 – 29).
  - A. *Were these rules for synthesizing from the level of the measure to wilderness character understandable and did they make sense to you?*
  - B. *Would the syntheses at each of the different levels (indicator, monitoring question, quality of wilderness character, wilderness character) help you improve your wilderness stewardship?*

### **Pilot test the national and local reports**

42. Review the National Report (pages 14 – 15) and the Local Report (pages 16 – 17).
  - A. *Is the Local Report organized and presented in a way that would be useful to you?*
  - B. *Are there any other types of presentations or summaries you would like to see in the Local Report?*
  - C. *Would you want to see the National Report in addition to the Local Report? Why?*
  - D. *Would the Local and National reports help you in discussions with your line officer?*

### **Feedback on training**

43. There are several different ways that training for this monitoring could be conducted, such as face-to-face regional training, SameTime computer-based training with a trainer who would be on the phone, no formal training other than the help screens that would be part of the application.
  - A. *What are your preferences for training?*

## APPENDIX D

### **Debriefing Questions Phase II Pilot Testing**

#### Technical Guide:

Was the Technical Guide well organized and written clearly so you could find and understand the information easily?

Would you prefer having a paper copy of the Technical Guide, or would online be sufficient?

#### Measures:

Would this set of measures help you understand how wilderness character is changing in the wilderness you manage?

Would data on this set of measures help you improve your wilderness stewardship?

#### Training:

What type of training for this wilderness character monitoring would you prefer (choices would be attending face-to-face regional training, Sametime or NetMeeting session with a trainer, using the online help without formal training, or some combination)?

#### Overall:

Would this monitoring of trends in wilderness character reflect what you feel is happening on the ground, and help you improve your wilderness stewardship? Why?

Is this monitoring of wilderness character worth your time and effort?

Any other comments, thoughts, impressions are welcome:

## APPENDIX E

### **RESOLUTION OF ISSUES RAISED DURING PILOT TESTING July 2006, Fort Collins, CO**

Note: When “communication” is used as a resolution below, the issue raised during pilot testing required no change other than clarifying our original intent.

ISSUE RAISED	RESOLUTION
<b>General Issues</b>	
1. How does wilderness character monitoring complement or conflict with the 10-Year Wilderness Stewardship Challenge?	<p><i>Communication via FAQ, text in TG:</i> There is a single strategy: performance elements for program accomplishments (10YWSC) and outcomes (WCM)</p> <ul style="list-style-type: none"> <li>• Functional differences: 10YWSC is monitoring are we doing what we’re supposed to be doing, i.e., monitoring program elements, in a professional program of wilderness stewardship, versus WCM is monitoring the outcomes of wilderness stewardship</li> <li>• Time differences: 10YWSC = results will complete by 2014, versus WCM which will begin to yield national results in 2018.</li> </ul>
2. Will there be a pared down, shorter version of the Technical Guide?	<p><i>Decision:</i> Yes (we had already decided to do this)</p> <p><i>Tasks:</i> There will be a</p> <ul style="list-style-type: none"> <li>• Pared down version of TG that includes what, why, and how to gather the data, all organized by measure [Chris Barns already developed most of this in his “Reader’s Digest” version];</li> <li>• DeskGuide that includes step-by-step instructions for how to gather and enter the data [to be developed only if implementation is approved];</li> <li>• 1-page Executive Summary for general communication purposes (e.g., to give to line offices and help resource people understand why they are being asked to help) [completed]</li> </ul>
3. How do the results of this monitoring relate to future funding?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• Clarify how this is an accountability system, not a funding system, therefore a degradation might mean a change in policy is needed, and not necessarily new funding.</li> <li>• Clarify how results are being used at different administrative levels, from District to Washington Office.</li> <li>• Clarify how funding is allocated in general (via Forest Plan), and that funding is tied to accountability so the wilderness program needs defensible data to back up its program needs.</li> <li>• Bottom line: weaken (break) tie to funding</li> </ul>
4. For new and pristine wildernesses, this monitoring can only show degradation so why would we want to do it?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• Can only show degradation initially, but there are opportunities for improvement</li> <li>• Will show managers the impacts of their decisions</li> </ul>

5. Are we comparing trends in wilderness character across different wildernesses?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• We are <u>not</u> comparing <u>status</u> of WC among wildernesses because every wilderness is unique</li> <li>• The protocol <u>will</u> allow comparing <u>trends</u> among wildernesses because trends derived in nationally consistent way</li> </ul>
<b>Indicator and Measure Issues</b>	
1. Why are we monitoring all these things that have nothing to do with recreation?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• Need to explicitly state that wilderness management goes far beyond recreation</li> </ul>
2. Is the quality of data within Infra adequate to be used in this monitoring of wilderness character?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• Glass is half full because: (1) WCM provides incentive to accomplish data reporting that is required by the wilderness program; (2) this also promotes integration among programs; (3) makes clear how the data are being used</li> <li>• To accomplish the separate programs need to provide funding to put these data into Infra.</li> <li>• This is the biggest problem for Trails and should be much less a problem in the other program areas</li> <li>• Some program areas had problems in the pilot test but the problem is fixed by linking the element with the wilderness, which is relatively easy to do.</li> </ul> <p><i>Tasks:</i></p> <ul style="list-style-type: none"> <li>• Establish links for certifying data are OK</li> <li>• Establish links for wilderness within several different Infra elements and make sure this is explicit in the DeskGuide</li> </ul>
3. Is there internal consistency in scope and scale across all measures and indicators?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• Yes, indicators and measures were selected and then reviewed for internal consistency</li> </ul> <p><i>Decision on defining and including “ancillary attributes”:</i> We will not use separate “core” and “ancillary” attributes; instead use just “attributes” to avoid confusion. Reduce the number of what were ancillary attributes to the absolute minimum needed to compute the measure. Recommendations will be made for what to include in the cuff notes accompanying each measure.</p>
4. Is it OK to use professional judgment (PJ) and is there internal consistency in how professional judgment is used across the different indicators and measures?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• PJ represents best available data and is used the same as other measures for which we have quantitative data.</li> <li>• Use PJ about status (e.g., coverage of weeds) but not effects or trends for selected indicators.</li> <li>• Criteria for using professional judgment: <ul style="list-style-type: none"> <li>○ Use when indicator is needed for protocol and there’s no other data available</li> <li>○ Do not use PJ when there are sound reasons that it is grossly inadequate.</li> </ul> </li> <li>• When PJ is used we need to provide clear direction for what needs to be added to cuff notes</li> <li>• Stress importance of cuff notes to address concerns re using</li> </ul>

	professional judgment
5. Why are some indicators and measures being used that we don't have agency control of?	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• All the measures currently included in this monitoring are a part of our management responsibility, e.g., including air quality because of the agency's affirmative responsibility to manage air pollutants</li> <li>• There is a scale of influence with greater and less influence but we do have management responsibility for all measures</li> </ul>
<b>Data Entry Issues</b>	
1. Who is responsible for doing what, both within a Forest/District and for those cases where multiple Forests/Districts have responsibility for a wilderness?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• These responsibilities will be laid out in the TG in Roles and Responsibilities section <ul style="list-style-type: none"> <li>○ Lead Forest for each wilderness has already been identified and this Forest is responsible for gathering and entering all the data for this wilderness</li> <li>○ Lead Forest is responsible for identifying person who will be responsible</li> </ul> </li> <li>• Time-line and scheduling would be spelled out in an annual letter from the WO</li> </ul>
2. Are cuff notes required along with data entry? Will we provide suggestions for cuff notes?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• No, but in TG provide general comments on purpose of cuff notes to help with creating a legacy for reason why particular data were entered; and provide consistency over time when management staff changes; add this as section IV in the Assessing Trends section of TG</li> <li>• Yes, in DeskGuide provide recommendations for what to include in cuff notes for each measure to help local staff understand and interpret results; and provide consistency over time when management staff changes <ul style="list-style-type: none"> <li>○ For measures based on professional judgment we will provide direction for cuff notes to include basis of assessment, i.e., reliability (sources, extent of coverage, accuracy) of knowledge</li> </ul> </li> </ul>
<b>Synthesis and Reporting Issues</b>	
1. Why just show the trend in wilderness character without showing its status? For example, the trend could be stable while the status is terrible.	<p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• Explain that status is responsibility of local wilderness manager and local staff can assess status in context of Forest Plan direction; but at national level we can't assess status because every wilderness is unique.</li> <li>• Local staff can see status because they have the raw data to use</li> </ul>
2. Can we incorporate some local indicators into the synthesis process?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• We will add campsites as a national core measure</li> </ul> <p><i>Communication via FAQ, text in TG:</i></p> <ul style="list-style-type: none"> <li>• Using national core indicators allows consistency in compiling responses from every wilderness. This consistency allows evaluating regional and national trends that are critical to evaluating the effectiveness of policy.</li> <li>• We want to allow ability of local staff to add some measures but this would introduce systematic bias when data from</li> </ul>

	<p>different wilderness are compiled to provide regional and national trends.</p> <ul style="list-style-type: none"> <li>• We recognize that national core indicators do not capture local/place-dependent indicators and we strongly encourage each wilderness to develop local indicators that fit under each of the 4 qualities of wilderness character.</li> </ul>
3. Will there be standard narrative questions for the national/regional report?	<p><i>Decision:</i> Yes, as a task for the centralized staff; suggestions for these standard questions are already included in mock-up report in the TG</p>
<b>Untrammeled Quality Issues</b>	
1. How about changing the second measure from % fires managed as wildland fire use to % natural fires suppressed?	<p><i>Decision:</i> Use “% of natural fire starts that are suppressed”</p>
2. Are certain actions counted every year?	<p><i>Communication via text in TG:</i></p> <ul style="list-style-type: none"> <li>• Clarify wording re counting, especially the notion of “continuous” action and how these are counted.</li> <li>• Clarify definition of “action”</li> </ul>
<b>Natural Quality Issues</b>	
1. Why is professional judgment being used for the measure about weeds but not for altered water flow?	<p><i>Communication via text in TG:</i></p> <ul style="list-style-type: none"> <li>• We will use it for weeds because we don’t have any other data, whereas for altered water flow we have dam data as an indicator for altered flow.</li> <li>• Refer to issue about professional judgment and internal consistency above; stress importance of cuff notes to address concerns re qualitative.</li> </ul>
<b>Undeveloped Quality Issues</b>	
1. Should weighting for trails be applied to “trail class” or “current maintenance level”?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• Keep as currently configured in TG</li> <li>• Add checkbox to acknowledge discrepancy</li> </ul>
2. How to deal with trail features that are not mile-posted?	<p><i>Decisions:</i></p> <ul style="list-style-type: none"> <li>• Keep as currently configured in TG</li> <li>• Add to TG discussion for those areas that do not have features mile-posted, they will provide total number of features within the wilderness within each of the three categories</li> </ul>
3. Should road measure include “user created” and “ghost” roads?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• Yes, include non-system roads</li> </ul> <p><i>Task:</i></p> <ul style="list-style-type: none"> <li>• Develop process for including</li> <li>• Decide on ancillary attributes/cuff note direction</li> </ul>
4. How to track motorized/mechanized uses: - use days? - authorizations?	<p><i>Decisions:</i></p> <ul style="list-style-type: none"> <li>• Want to track magnitude therefore not track just authorizations</li> <li>• Separate admin from emergency uses and include both</li> <li>• Admin use is in use days (requires restructuring Infra reporting)</li> <li>• Emergency use is tracked in coarser categories</li> </ul>

- general categories?	<ul style="list-style-type: none"> <li>• Need to determine business rules for weighting both admin emergency uses <ul style="list-style-type: none"> <li>◦ Weight motorized equipment different from mechanical transport</li> </ul> </li> </ul>
5. Should other instream structures be included along with dams?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• Include</li> </ul> <p><i>Tasks:</i></p> <ul style="list-style-type: none"> <li>• Add to TG, develop use case (although this wouldn't be done until we have go ahead for implementation)</li> </ul>
6. Should activity to maintain a dam be included along with its presence?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• Steve will think about this more and make a decision</li> </ul>
<b>Outstanding Opportunities Quality Issues</b>	
1. Why doesn't this get at the two biggest issues in east: user-created trails and overflights?	<p><i>Communication via text in TG:</i></p> <ul style="list-style-type: none"> <li>• Clarify that non-system trails are a desired indicator but are not a current indicator because of a lack of data; there are no data for overflights.</li> </ul>
2. Why use visitation because it's not a good indicator for solitude?	<p><i>Communication via text in TG:</i></p> <ul style="list-style-type: none"> <li>• Agree and TG provides sufficient explanation for why visitation is used</li> </ul>
3. Why are three alternative measures for visitation used?	<p><i>Communication via text in TG:</i></p> <ul style="list-style-type: none"> <li>• Clarify that measure 1 and 2 are alternatives, and everyone reports on measure 3</li> </ul>
4. Use trail classes 2-5 instead of 3-5?	<p><i>Decision:</i></p> <ul style="list-style-type: none"> <li>• No, we'll stay with national guidelines currently in TG</li> </ul>