Summary Document

U.S. Forest Service, Department of Agriculture

Analysis of the Monitoring and Evaluation Framework

CAT
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Table of Contents

Executive Summary

Introduction

The following is a summary of comments received in response to the U.S. Forest Service, Department of Agriculture Monitoring and Evaluation Framework (the Framework) through the work of the Monitoring and Evaluation Team (MET). The Director of Ecosystem Management Coordination circulated a draft of the Framework widely for review and comment. Multiple Internal Reviewers, External Reviewers, and Line Officers were asked to comment. Several specific questions were suggested to reviewers as a framework for structuring their comments. Reviewers were also invited to offer additional comments and raise questions beyond those suggested.

The responses have been analyzed using a modified content analysis process, described briefly in the next section of this Executive Summary and in more detail in Appendix A, **Content Analysis Methodology**.

Summary Document Overview

Project work for the analysis of comment on the Monitoring and Evaluation Framework deviates from the traditional methods of content analysis refined by the Content Analysis Team (CAT). Respondents for this project were not self-selected, but received invitation to comment on the draft Framework. Comments were not expressed randomly or generally, as in typical CAT project work, but were guided by pre-developed questionnaires created by the Monitoring and Evaluation Team. This summary document creates two separate analytical tools, each placed in its own chapter, for systematic review and response on the Monitoring and Evaluation Framework. These chapters are described below.

Chapter 1, Questionnaire Summary, is organized into three sections. Section 1 contains comments submitted by Forest Service Line Officers. Section 2 contains comments submitted by Internal Reviewers. Section 3 contains comments submitted by External Reviewers. Each section begins with a summary highlighting pervasive themes specific to each group of reviewers.

Chapter 2, Resource Summary, is organized topically into sections corresponding to one of eight identified resource topics. **MET Framework** includes comments related to the scope of the MET document, purpose and need, methodology, and efforts toward achieving sustainability and desired conditions. **Funding** applies to comments that address funding for implementation and enforcement of the Framework, including monitoring cost estimates and budgeting. **Organization and Coordination** includes comments about the organization of monitoring programs and data resources, including coordination with other agencies/groups. **Applicability and Scale** includes comments related to the applicability and implementation of the MET Framework across various levels of Forest Service administration, e.g., national, regional, forest-level, and sub-forest level monitoring. **Standards and Measures** includes comments addressing the need for accuracy and consistency in monitoring through standardized monitoring questions, processes, indicators, plan components, and performance measures. **Natural**

Resource Management applies to comments about monitoring specific to natural resources, including wilderness and watersheds. **Socio-Economic Impact** applies to comments about monitoring specific to social/economic activities and actions, including recreation, resource extraction, and transportation. **Editorial** addresses problems related to spelling, grammar, clarity, consistency, formatting, and other deficiencies specific to the MET document.

Following each comment is a parenthetical identifying the letter number, organization, respondent's name, and the corresponding resource topic. Some comments in Chapter 2: Resource Summary are excerpted from larger responses to moderate redundancy.

General Overview of Comment

Comment on the Monitoring and Evaluation Framework is far-reaching, often highly detailed, and represents a variety of values and perspectives with respect to land management plan monitoring. Given this wide range of values and perspectives only broad generalizations are possible.

Chapter 1: Questionnaire Summary

Line Officer Comments

Line Officers express general satisfaction with the Framework, though appear to be comparatively hesitant about implementation of the Framework within individual forests and grasslands. This is due in part to questions about the availability of funding for the Framework and its potential impacts at the forest-level. One respondent writes, "A nationally-mandated layer of unfunded monitoring potentially places line officers in the position of choosing which locally-developed monitoring will not get done". Another concern common among line officers is the "added work at the ground level" required by the Framework and lack of emphasis on how it affects current Land Management Plan (LMP) monitoring.

Internal Review Comments

Internal Reviewers generally emphasize the Framework's potential value to national monitoring efforts, as opposed to its impact on individual forests. Comments are characteristically more technical and synthesize less clearly than those provided by line officers, though a few common concerns persist. Among them is the undetermined ability of the Framework to identify, collapse, and report information at the national level while addressing the need to "provide direction and focus" consistent with the 2005 planning rule. Several respondents also comment on the Framework's lack of specificity toward desired future conditions and other plan components.

External Review Comments

External Reviewers' comments are similar to those submitted by internal reviewers with regard to technicality and with reference to specific conditions and processes. Several respondents, however, commonly address the need for increased "outreach and coordination with the states [and other agencies] on data collection and reporting" in

order to facilitate improved resource assessment and planning. Others suggest more explicit direction on how outside agencies will be engaged in the monitoring process. External reviewers also appear to emphasize the role of standardized measures and indicators more persistently than other respondents.

Chapter 2: Resource Summary

MET Framework

Most respondents express general satisfaction with the framework, noting that it "provides focus" for monitoring plan development and some suggesting it be adopted as a basic component of land management planning. The Framework did not escape skepticism entirely, however. Respondents highlight numerous concerns with consistency, clarity, and specificity of desired condition statements and other plan components. For example, one person writes, "several of the themes have desired future conditions … that are so broad as to be meaningless". There was also some concern about potential impacts of the Framework on current monitoring conditions, data collection, reporting, and how the Framework will comply with current federal mandates.

Funding

Availability of funding for the Framework emerges as the most widespread issue among respondents. For instance, one person asks, "Once the Framework is agreed to, what will be the funding source?" Underscoring this concern are numerous recommendations for mitigating the costs implied in the Framework, such as reducing the "data rich" information environment, creating monitoring strategies that are locally relevant, and allowing parts of the Framework to be non-compulsory. Concern about monitoring costs being underestimated is also pervasive, including concerns related to budgeting for enforcement and oversight.

Organization and Coordination

Many respondents feel the Framework better facilitates prioritization and organization of individual monitoring programs and provides necessary guidance to Forest Service staff members. Others were more critical, noting that more direction is required for proper organization of monitoring data. A common suggestion for the Framework is to emphasize strengthened coordination with outside agencies/groups to "share costs, fill data gaps, improve [data accuracy], and aggregate the data for national reporting".

Applicability and Scale

Several respondents raise doubts about the Framework being drawn too broadly for forest-level LMP monitoring, while others speculate that the Framework "is workable at a forest level or larger". There is relative consensus, however, that the Framework is likely not appropriate at sub-forest levels and serves only as a partial solution to creating a "unifying, multi-scale Framework".

Standards and Measures

There is relative consensus among respondents on the need for the Framework to standardize monitoring questions and performance measures, including designation of monitoring triggers that are both relevant and consistently applied. Respondents make numerous suggestions on this issue, including greater incorporation of Environmental Management System (EMS) protocols, indicator lists that are shorter and more practicable, identification of ideal indicator criteria, and greater commitment to key measures over the long-term.

Natural Resource Management

A central issue surrounds the question of wilderness, specifically, the failure of the Framework to address resources, like wilderness, that integrate multiple monitoring sub-elements. One respondent argues, "wilderness character cuts across all of the ecological, social, and economic themes and sub-elements. How does such an integrated attribute work in this LMP Framework?" Other resources of concern include the monitoring of soils and water, species diversity, and the need for the Forest Service to take action within a larger, "eco-regional or global" context.

Socio-Economic Impacts

No shared concerns emerge among respondents in the analysis of comment, though comments include suggestions to expand transportation and recreation infrastructure, augment the Framework with recreation and timber sub-components, and add necessary sub-elements to prevent possible litigation.

Editorial

Respondents address problems related to spelling, grammar, clarity, consistency, formatting, and other deficiencies specific to the MET document.

Chapter 1: Questionnaire Summary

Section 1: Line Officer Comments

Summary

Section 1 consists of responses to questions asked of Line Officers by the Monitoring and Evaluation Team (MET). A total of six Line Officers responded. Question 1 asks Line Officers their opinion of the Framework in a multiple choice format. Respondents answered with one response of "Okay", and 5 responses of "Very Good", expressing general satisfaction with the Framework.

Question 2 asks Line Officers if the Framework will work on their forest/grassland. Respondents answered with 3 responses of "Maybe", 2 responses of "Generally", and 1 response of "Easily".

Question 3 asks Line Officers if they would use the Framework on their forest/grassland. Respondents answered "Will Consider It" and "Likely" with each receiving 3 responses.

Question 4 asks Line Officers to specify changes needed to improve the Framework. One respondent requests making a "menu of monitoring options" and not a mandatory set of national monitoring items. Others express concerns about the availability of funding.

Question 1: What is your opinion of the Framework for LMP monitoring and evaluation?

A) DISLIKE - 0 responses
B) OKAY - 1 response (Ltr 5)
C) GOOD - 0 responses
D) VERY GOOD – 5 responses (Ltrs 1, 2, 3, 4, 6)
E) OUTSTANDING - 0 responses

Question 2: Will it work on your forest/grassland?

A) NOT AT ALL – 0 responses
B) MAYBE – 3 responses (Ltrs 4, 5, 6)
C) PROBABLY – 0 responses
D) GENERALLY – 2 responses (Ltrs 1, 3)
E) EASILY – 1 response (Ltr 2)

Question 3: Would you use it on your forest/grassland?

A) NO WAY – 0 responses
B) WILL CONSIDER IT – 3 responses (Ltrs 4, 5, 6)
C) PROBABLY – 0 responses
D) LIKELY – 3 responses (Ltrs 1, 2, 3,)
E) ABSOLUTELY – 0 responses

Question 4: What changes are needed to the Framework so that your answers to questions 1-3 would be most productive?

A) EDIT WORDING

B) ADD SUB-ELEMENT(S)

C) DELETE SUB-ELEMENT(S)

D) OTHER CHANGES

C

[I] would not propose deleting sub-elements so much as reducing an implied "data rich" information environment, which many Forests do not have and cannot possibly fund. For example, items such as, "composition, abundance, structure, and distribution" of ecosystems and species' habitat components; economic status and trends relying on IMPLAN [Implementation Plan]; current status and trends for other sub-elements which imply high-data intensity. (Ltr 6, Fremont-Winema National Forest, Rine. **Funding**)

D

Delete the wording within the sub-elements that are not highlighted within circles. This is confusing as to whether they need addressed separately or are there as suggestions. Might be better to include in the text rather than the diagram. (Ltr 2, Land between the Lakes National Recreation; Hallisey. **Editorial**)

I may have misunderstood, but my understanding of the monitoring protocol was that it was designed to answer broad scale condition questions that may not also be sufficient for Forest level LMP monitoring and evaluation. I understood that there was hope they would mesh, but this is yet to be determined and the fate of this effort will be decided before we are able to answer that question. (Ltr 5, Region 4 Uinta National Forest; King. **Scale**)

Make it a menu of monitoring "options" and not a mandatory set of national monitoring items. NFIM [National Forest Monitoring and Inventory]/PN [Land Management Planning] funds do not and are not likely to support mandatory national monitoring and critical local monitoring commitments made through the collaborative planning process. And there is much other activity/work dependent on NFIM/PN funds besides plan monitoring. (Ltr 6, Fremont-Winema National Forest; Rine. **Monitoring**)

Question 5: Please provide any other comments you might have on this monitoring and evaluation effort.

You can see that changes in the Framework took place following interviews with folks. Overall efforts seems a bit more useful to the District level in not requiring additional work to monitor. (Ltr 1, Douglas Ranger District Coronado National Forest; Hardy. **Scale**)

Appreciate the examples. Most sections are explained thoroughly, making this easy to follow. (Ltr 2, Land between the Lakes National Recreation; Hallisey. **Editorial**)

I appreciate the attempt to consolidate our monitoring and evaluation efforts. This Framework should help us by providing a consistent picture of how to characterize our efforts toward achieving desired conditions and sustainability. (Ltr 3, Ashley National Forest; Elliot. **Monitoring/Framework**)

We will need to think very strategically as an agency about how to accomplish the elements of this Framework. Our foray into monitoring under our last set of Forest Plans was only partially successful.

This Framework could require substantially more effort with fewer resources. (Ltr 4, Humboldt-Toiyabe National Forest; Monnig. **Monitoring/Framework**)

I support the objectives and desires for this kind of information on the broader scale and for gaining support from our publics for necessary work and focus, but I think it's erroneous to believe that other work and monitoring is going to go away or be satisfied by this information. We need to tighten up the best we can and utilize this information at the ground level the best we can, but we also need to be realistic and know that this is added work at the ground level to what we are currently doing with LMP monitoring. (Ltr 5, Region 4 Uinta National Forest; King. **Monitoring/Framework**)

Generally, the requirements of the 2005 planning rule should be commensurate with the anticipated level of funds to administer plans revised under the 2005 rule. The collaborative planning process elevates local commitments made during the plan revision to greater importance in earning the trust necessary to reduce the planning process burden intended by the new rule.

A nationally mandated layer of unfunded monitoring potentially places line officers in the position of choosing which locally-developed monitoring will not get done. If the Monitoring Framework provides a menu of monitoring options to consider in developing local monitoring strategies, such monitoring could have stronger local support. It may preclude the opportunity to sense national conditions and trends but it would engender more local support to the revised plan. (Ltr 6, Fremont-Winema National Forest; Rine. **Funding**)

Section 2: Internal Review Comments

Summary

Section 2 consists of responses to questions asked of Internal Reviewers. A total of thirteen Internal Reviewers responded. Question 1 (A&B) asks Internal Reviewers their opinion of the Monitoring and Evaluation Framework (Framework), and how it would help in monitoring efforts. Some respondents feel it is a good Framework and that it will contribute to effective management plan monitoring. Others state that the document provides focus for developing monitoring plans related to the new planning rule. Some respondents cite that monitoring questions should address desired conditions and provide more formalized direction and resources to help determine what kind of data should be used.

Question 2 asks Internal Reviewers if there are foreseeable flaws with using the Framework widely in the Forest Service. Some respondents state that the Framework has broad applicability, while others are less certain of the Framework's applicability because no quality assurance, oversight, or review process is offered. One respondent suggests the need to incorporate the Environmental Management System (EMS) to contribute to the overall monitoring scheme

Question 3 asks Internal Reviewers what would prevent them from using the Framework. Respondents express concern about whether the Framework is too specific for their forest areas, while others feel lack of funding would restrict effective implementation.

Question 4 asks Internal Reviewers to specify the benefits and opportunities of the Framework. Some respondents are confident the Framework provides a consistent set of sub-elements and directs forests how to monitor and document desired conditions in a logical way. Others feel the Framework is a good start, but does not allow enough time for the work to be properly completed. Some respondents feel that the Framework will help prioritize and organize individual monitoring programs.

Other comments not specific to the questions address socio-economic concerns, including potential effects to visitor centers, campgrounds, and lodges. Several editorial comments are made, including suggestions to "weed" confusing statements out of the document. Other recommendations include creating an "assumptions" section that clearly identify the "context, need, use and hope" of the MET document.

Question 1A: What is your opinion of the Framework? Specifically, will the proposed Framework for LMP monitoring and evaluation help our LMP efforts monitor progress towards Desired Conditions?

> It is a good idea to have a consistent organizational pattern for monitoring. [Region 5] had a Regional outline that all monitoring reports from forests had to use. It makes it easier to find information and to get a sense of larger scale trends. (Ltr 10, Region 5 EP; Burmark. **Organization**)

> Yes and No. Yes the themes, sub-elements and generic desired conditions will provide a good Framework for LMP monitoring. However, I am concerned about the monitoring questions provided – even if they are only used as examples. The monitoring questions should address the desired condition through measuring achievement of the objectives. This step is bypassed in the MET Framework.

Therefore, the monitoring questions provided should neither be used as the standard nor necessarily as good examples. (Ltr 7, Region 10; Friberg. **Monitoring/Framework**)

This Framework looks like it would work for specific resources, but I don't understand how it would work for resources that are integrated across several or all of the attributes of desired conditions. For example, the key wilderness attribute that the agency is mandated by law and policy to preserve is wilderness character. But wilderness character cuts across all of the ecological, social, and economic themes and sub-elements. How does such an integrated attribute work in this LMP Framework? (Ltr 8, Aldo Leopold Wilderness Research Institute; Landres. **Natural Resource Management**)

My understanding of the Framework is:

Provides forest planners with the monitoring themes (sub-elements) that best meet the intent of the planning rule. If all forests use these as a core set then it would serve to provide consistency at the highest level of forest plan monitoring.

The table used to document the components of each sub-element will be useful to forest planners as it directs them to document the appropriate steps in moving from their desired condition (DC) to monitoring questions and performance measures.

The Framework will help LMP efforts monitor progress towards [desired conditions] by defining these two components of their monitoring programs. (Ltr 9, Washington Office Watershed, Fish, and Wildlife; Henderson. **Monitoring/Framework**)

No. There is the consistent theme that currently existing datasets will be able to answer all questions at all scales at the desired levels of precision. There is no formalized direction or resources that are proposed to be available to decide if existing or new data is needed. (Ltr 11, Pacific SW Research Station; Baldwin. **Organization**)

"The themes and sub-elements of the M&E Framework provide the architecture for envelopment of LMP desired conditions and related performance measures. The themes of the M&E Framework summarize key forest management legislation that guides and regulates management on the NFS." I suspect that I will not be the first to point this out, but this is calls into question the title and stated title of this Framework – is it to develop a plan or is it to monitor and evaluate the influence of that plan? (Ltr 19, SPF COOPRTV FOR; Higgs. **Monitoring/Framework**)

The Framework to develop monitoring questions would provide direction to the Forests. I like the thought process that they used. The document provides focus for developing monitoring plan related to the new planning rule. However, I would have a couple of concerns with implementing a national strategy of this sort. First, the desired conditions are very detailed in the M&E strategy and in some cases may even be objectives. There appears to be need, at the national level, for some consistency on direction for specificity of desired conditions between different groups of the agency. Also, given the structure of the Forest Plan, the link to objectives would be useful. (Ltr 20, Humboldt-Toiyabe National Forest; Baggs. **Monitoring/Framework**)

The basic Framework of six categories of monitoring makes sense and is likely to be broadly applicable. While the Framework itself seems sound, it has not been linked in the document to any kind of implementation strategy. Some comments that come to mind: Who will be the responsible or accountable person or group for implementing the Framework? What is the intended cycle of Monitoring & Evaluation (M&E)? Will every unit be responsible for every element on every acre? Or will there be a menu of standard elements?

In the diagram on p. 1, we don't understand how the bulleted items fit in (e.g., Soil Productivity). Are they sub-sub-elements? Or are they standard elements? Seems like this scheme could be infinite. It could be helpful for providing a consistent structure for our LMP revisions. It remains unclear whether the Framework will lead to enough consistency to allow results to be aggregated to address questions at

multiple scales. One thing we have learned in the past couple of decades is that the ecosystems often operate outside our administrative boundaries. It is therefore important that we critically think about which monitoring items must be collected for sharing outside the boundaries of a Forest.

We suggest you add a section focused on information needed to make effective decisions about monitoring investments. Resources are limited. We always want more data than we can possibly acquire. Some data needs to be collected so that it can be shared with neighboring units, other landowners, and upward in the FS. How does a line officer decide what is essential, what needs to be shared, and what is not needed? How do we get to the essential few needed at the national, regional, sub-regional, or national forest level?

A key factor that affects the costs of monitoring investments is data quality. It is important for staff to inform line [officers] about the quality of data and associated costs prior to asking line for a decision. We suggest you add a row after possible data sources that address data quality. The monitoring questions should not begin with the word "how", but rather simply ask the question. Starting with the word "how" implies an assumption about the question being asked. (Ltr 23, Region 6; Freedman. **Scale, Monitoring/Framework, Editorial**)

Question 1B: Will the proposed Framework for LMP monitoring and evaluation work at multiple scales and provide an integrated assessment of progress towards Desired Conditions?

Maybe. How the information would be collapsed and reported at the national level has yet to be shown. This should be included in the Framework. Again, it will be very difficult to come up with a standard set of monitoring questions since the LMP objectives will be very specific. If you could get all forests to agree on THE SET of standard monitoring questions and PERMFORMANCE MEASURES then maybe it would work. But even then you need more than just standard performance measure; you will also need standard protocols. One approach that might work is to ask each forest to indicate whether they are trending towards, away, or achieving the general desired condition based on whatever it is they choose to measure for their more specific desired condition and objectives. This is a bit like the approach of the FMC, but there would be supporting data behind the answer. (Ltr 7, Region 10; Friberg. **Standards and Measures**)

At the forest scale, it provides a framework for structuring their monitoring programs as described in 1a. The Framework is less useful at the regional and national levels, although consistency among forests in using the sub-elements and associated terminology would help regions and national staff convey forest plan monitoring to others.

I don't think the Framework can effectively aggregate forest results up to regional and national levels for each sub element since the DCs [desired conditions] will vary by Forest. For example, we will not be able to say watershed health is improving on XX% of watersheds if each forest defines watershed health differently.

My largest concern is that the document does not clearly lay out whether the DCs, monitoring questions, and performance measures are required, recommended, or only examples. This is partially due to conflicting language in the document.

Page 1 says "Each sub-element has a standard desired condition that can be augmented by forests" and the "Framework features an example set of desired condition statements, core monitoring questions, performance measures, and requisite data needs.

In the introductory letter for this review it says "The FS Monitoring and Evaluation Team (MET) has developed a unifying, multi-scale Framework for monitoring and evaluating forest, regional, and national progress toward achieving standard and unique desired conditions on forests and grasslands within the National Forest System (NFS)."

A more extreme example is in Appendix 1, where the MET charter directs the Framework to include "a core set of monitoring questions and related performance measures that flow from DCs".

The phrases I underlined contradict each other. The MET team and leadership need to clarify whether they want the MET Framework to require standard DCs, monitoring questions and/or performance measures, consider these recommendations, or just provide examples.

Similarly, I was confused by the tables for each sub-element in terms of whether MET is requiring, suggesting, or providing examples. It is not clear that each consists of 1) a standard or recommended DC and 2) examples for each of the other columns in the table (at least that is my understanding of the tables). I feel the document would convey a clearer message if 1) the list of recommended DCs for each theme is listed in a single table and 2) 1 or 2 examples of a completed table. (Ltr 9, Washington OFC Watershed, Fish, and Wildlife; Henderson. **Scale, Editorial**)

No. For example, FIA [Forest Inventory and Analysis] data is suggested as one of the data sources for many issues. However, FIA is good at the State scale but certainly not at the National Forest scale or below.

I don't see any "integrated assessment". Who will look at the required reports? What will be done with those? Where is the oversight of the process both on the day-to-day implementation and for the longer term annual and 5-year reports? (Ltr 11, Pacific SW Research Station; Baldwin. **Scale**)

Question 2: Are there fatal flaws with using this widely in the Forest Service? If so, please describe them and suggest resolutions.

I am not a lawyer, but no I don't think we would lose in court over guidance or even direction. In addition, the 2005 rule does not even require NEPA on making changes to the monitoring component of the 2005 rule LMPs. Requiring implementation of the full Framework as it is today would be fatal in that it would do more harm than good in that it would reduce the efficiency and effectiveness of our forest plan monitoring. This again relates back to the monitoring questions and performance measures. (Ltr 7, Region 10; Friberg. **Standards and Measures**)

I'd suggest that the major problem and challenge is to provide a monitoring Framework for resources that cut across and integrate the distinct themes and sub-elements. The example of wilderness character is already described. I don't [think] this is a fatal flaw, but it is a serious issue that needs to be resolved. (Ltr 8, Aldo Leopold Wilderness Research Institute; Landres. **Natural Resource Management**)

I do not see any flaws in having forests use the sub-elements and general table structure for each sub-element. (Ltr 9, Washington OFC Watershed, Fish, and Wildlife; Henderson. **Monitoring/Framework**)

It will take several years to be implemented. I think that forests will use this as they undergo plan revision. If they have to go back and adjust existing monitoring plans to this format, there will be a lot of resistance to the time and budget this would require.

There is strong commitment to existing monitoring schemes, especially where significant efforts have been made, such as the Sierra Nevada Framework monitoring, Northwest Plan monitoring, Survey and Manage EIS, Quincy Library Group EIS, Sequoia Mediated Settlement Agreement, etc. Public expectations are high to implement these monitoring schemes. Commitments have been made with Research and University scientists over long-term monitoring work. Perhaps over time these could be steered into a national monitoring Framework.

The document needs to incorporate EMS [Environmental Management System]. EMS should be referenced in the overall flowchart and throughout the document. It needs to show how EMS can contribute to the overall, larger forest monitoring scheme. It needs to explain where EMS fits and how work will not be duplicated between EMS and other monitoring systems. (Ltr 10, Region 5; Burmark. **Monitoring/Framework, Standards and Measures**)

There is no mention [of] quality assurance, oversight, review process (other than the review of this document), legitimate sampling procedures (i.e., probabilistic sampling), measures of precision

associated with the results of data analysis, enough personnel trained to perform analyses, data management, etc. There is just a single sentence on efforts being "Scientifically sound." How can this effort be considered scientifically sound with just a single sentence? (Ltr 11, Pacific SW Research Station; Baldwin. **Standards and Measures**)

One goal of this Framework is said to be a "unifying multi-scale Framework" for monitoring forest, regional and national conditions. It is a laudable goal, one the agency has deemed for years. However, in my opinion I believe the Framework as it is presented is only a partial solution. Even if the forests are collecting data under the same topic, until protocol for data collection and reporting are established, the system will be for naught. Implementation of data collection and reporting protocols will require a level of disipline the agency has been reluctant to impose on the field. (Ltr 17, USDA FS Int'l Program; Hendricks. **Scale, Standards and Measures**)

I just want you to know that as an atypical FS forester, there are clearly some places where the word/logic choices finally selected will be problematic with our critics and elicit questions from potential allies. Know that if there was one change I could make, it would be to make is shorter and an easier read. (Ltr 19, SPF COOPRTV FOR; Higgs. **Editorial**)

Conservation and Maintenance of Soil, Water, and Air Resources - This, in my opinion, may be the Achilles heel of this effort – soils, and water, and air/etc. deserve sub-elements – the current reference to the eco-function of a watershed is subject to claims that it is not consistent with the promise of the theme. More importantly, lack of specific address of the multiple and significantly important particulars of the role of soils and the role (both terrestrially and aquatically) of water will put even our own specialists' teeth on edge. (Ltr 19, SPF COOPRTV FOR; Higgs. **Natural Resource Management**)

Maintenance and Enhancement of Social Systems - A literal over promise, how about something simpler, both concept and implication wise --- Sustainable provision of NFS social benefits to the American people. (Ltr 19, SPF COOPRTV FOR; Higgs. **Socio-Economic**)

In setting up the monitoring program, my concern would be the level of direction on what would have to be monitored and the methods used. Efforts to standardize inventory for rare plants has been successful at the national level, but monitoring is more difficult to standardize methods. This effort has removed some local flexibility. In addition, given declining budgets, the Forest may only be able to address national monitoring needs. The longer document was not clear on how exactly this strategy would be implemented including level of direction that would be given to the Forests. (Ltr 20, Humboldt-Toiyabe National Forest; Baggs. **Standards and Measures**)

One of the subjects that concern nearly everyone is MET reporting – who does it? Are the answers derived from existing data bases or do they require new data entries? If they are new what are the methods? Where are the data housed and who maintains them. There should be some expression of expectations about this in the report.

I am less cynical about the value of MET now, given the latest version of the report and our conversations, however, regional office and forest staff are buried in new monitoring ideas and expectations whether from revised plans, new plan rules, etc. The last thing anyone wants is a new idea that appears to be in addition to everything else. This report needs to assuage that concern by making it clear what the MET is and is not, and how it is integrated and will compliment and draw from things we are already doing. It has to make monitoring easier not harder. (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

This Framework cannot be implemented without a standard approach to defining Reference Conditions. We currently inventory and monitor a number of traditional products, goods, and services. These should be ranked for importance and linked to specific themes and sub-questions. What is the role of Science in

the Framework process? The report makes no mention of it. The 2005 planning rule requires that the Forest plan monitoring program take into account the best available science. How can M&E information and results be scaled up or down, as the document indicates is desirable? No guidance is provided.

Several of the themes have DFC [desired future condition] and Monitoring Questions that are so broad as to be meaningless—Watershed Health, Social Systems, Economic Systems. To what degree would implementing the MET process require new data to be collected or developed?

The inference that we need a cohesive Framework to meet regional and national reporting needs (first paragraph on page 1) is not consistent with the 2005 planning rule. The rule calls for a monitoring program identified by the Responsible Official and developed with public participation that takes into account financial and technical capabilities, and takes into account key social, economic and ecological performance measures relevant to the plan area (36 CFR 219.6(b)1). The MET product does none of these.

Some of the example desired condition statements in the MET Framework are not consistent with National guidance on plan components, e.g., the example LMP desired conditions under the "Maintenance of Land Health and Vitality" theme on page 7 are clearly 'objectives' rather than 'desired conditions'. This is also true of the example desired conditions on pages 10, 13 and 17.

It appears that some of the costs on page 30 are substantially underestimated given the performance measures in the previous sections. For example, one of the performance measures under Maintenance of Land Health and Vitality (page 7) is "Change in ecosystem and species diversity in infested areas". We are not aware of a peer-reviewed protocol for monitoring changes in ecosystem diversity or species diversity, and we are especially concerned that, even if such a protocol existed, it would cost substantially more than the $1.6 million annual estimate. Similarly, the watershed LMP performance measures on page 11, based on our experience, could not be monitored on a single Forest in a statistically sound manner for $.8 million, much less on the entire national forest system. We suggest that cost estimates be removed or revised based on peer reviewed monitoring protocols.

Some of the questions seem difficult or impossible to answer in any consistent manner, such as on page 7 (Maintenance of Land Health and Vitality), "Change in ecosystem and species diversity in infested areas." How would over 100 different forests answer that consistently over time? Other questions could be improved by editing, such as "How effective were our management activities including partnerships in preventing or controlling targeted invasive species (some of which may e species of interest)?" We suggest it be edited as follows "How effective were our management activities, including partnerships, in reducing the impact of…." It is hard to say that any activity can actually prevent or control certain invasive species, but we might be able to reduce their impact. We need questions that are realistic.

Similar edits are needed on other monitoring questions, such as on page 13 (Maintenance and Enhancement of Social Systems), we aren't sure what you mean by the first question, suggest deleting the second and third questions, and add the question "Is the Forest making progress toward socio-economic desired conditions?"

On page 15 (Maintenance and Enhancement of Economic Systems) we suggest deleting the monitoring questions and replacing them with something like these: What is the level of goods and services provided from NFS unit and their contribution to the plan area's supply of goods and services? What is the level of employment and labor income attributable to NFS goods and services and their contribution to the plan area's economy? The monitoring questions on page 17 (Infrastructure Capacity) are very different than the style of questions in the other themes. We suggest making sure the style and intent is similar throughout. In addition, it seems it would be very costly to collect data to answer the four questions posed. (Ltr 23, Region 6; Freedman. **Monitoring/Framework, Funding, Standards and Measures, Editorial)**

I may have missed it, but in both the MET assumptions and discussion, the report needs to clearly show the links or absence of links to other monitoring type efforts or requirements, such as EMS [Environmental Management System], Keys' Standards Data Management Systems, Solem's Adaptive Management System, legal requirements (T&E, Water…), 5 year Comprehensive Evaluation Reports, and administrative items like FACTS [Federal Agencies Centralized Trial-Balance System], budgets, accomplishment reporting, and work planning. (Ltr 24, Region 9. **Standards and Measures**)

Question 3: If this was to be implemented Service-wide, what would prevent you from using it?

The [lack of] specificity beyond the themes, sub-elements, and generic desired conditions. (Ltr 7, Region 10; Friberg. **Editorial**)

It's very hard to understand how this LMP Framework will be implemented without specific funding and specific ties to local relevance. Another unfunded mandate will not fly in these reduced budget times. (Ltr 8, Aldo Leopold Wilderness Research Institute; Landres. **Funding**)

Planning funds (NFIM [National Forest Monitoring and Inventory] and NFPN [Land Management Planning]) have been on a steady decline. My priority would be to adopt the national monitoring strategy as we do plan revisions. I would not want to divert funding from this to go back and rework existing monitoring plans to fit this scheme if the forest was not in revision. This document suggests that all of these themes and elements will be populated with monitoring information. The document should have some kind of implementation scheme, suggestions for priority setting, etc. that lead decision makers into developing responsible work plans and realistic promises made. The document is written in a technical style. It would help to have it re-written to make it more interesting and appealing to a wider audience. It needs to better say what the problem is that this will fix and how it will benefit resource management, the environment, adaptive management, etc. I am not certain that all monitoring commitments fit into this scheme. There needs to be some flexibility to make changes or add on to the basic scheme. (Ltr 10, Region 5 EP; Burmark. **Funding, Editorial**)

I'm not in NFS but if I was, where is the enforcement of the policy? Without any oversight the Forest Service is being set up for failure. We will lose court cases because it will be found that folks didn't follow existing policy – all because there was no enforcement/oversight described or budgeted. (Ltr 11, Pacific SW Research Station; Baldwin. **Funding**)

I would suggest an illustration of the need for coordinated inventory and monitoring and the obvious application at each level of management. I suggest the folowing: RPA [Resources Planning Act] national level - % of ecosystems restored or maintained, National LMP level -- % of DFC [desired future condition] obtained, state level - % of forest in Aspen, and forest DFC - % of land in Aspen.

This provides some sense of what is being monitored. The forest is interested in acres covered in Aspen. There is no way the national LMP office would have a target, but it is likely they should be monitoring the achivement of plan DFCs (or someone should be). If there is a coorrespending RPA goal, it will be very broad and will likely be related just to forest ecosytems, rather than Aspen. (Ltr 17, USDA FS Int'l Program; Hendricks. **Standards and Measures**)

I recommend that each example be read very carefully by a resource specialist from that area. I do not believe many of the examples make strict sense. Given the size of the audience for this document, national direction statements must be very tightly crafted if there we are to avoid a multitude of interpretations of them, or just plain confusion. (Ltr 17, USDA FS Int'l Program; Hendricks. **Editorial**)

Overall, I think this is a good start to where we need to go as an agency, and helps document how these various targets and issues can be seen as an integrated whole. I think that the approach is workable at a forest scale or larger. I do not know whether it works across the board at sub-forest scales. That would depend on the geographic scale of the data across most or all elements. (Ltr 18, Visitor Use Monitoring; English. **Scale**)

The level of specificity and scale could be an issue. For example, right now, our best data set gives us dominant species cover only for uplands. On over 6 million acres, addressing species composition at the community level (if selected as an indicator) could be overwhelming especially using statistically valid

techniques and sampling. Range long-term monitoring will begin to provide that information for communities impacted by livestock grazing. The document identifies many data sources but many are not populated with information specific enough to answer the monitoring questions. (Ltr 20, Humboldt-Toiyabe National Forest; Baggs. **Scale, Editorial**)

Once this Framework is agreed to, what will be the funding source? NFIM [National Forest Monitoring and Inventory] (a fund code that seems to be dwindling and needed to support completion of remaining Forest Plan Revisions...along with NFPN [Land Management Planning])? Resource funds (NFTM [Timber Management], NWFW [National Watershed, Fish, and Wildlife], etc)? My concern is enormous effort and expense being put into new guidance, expectations for monitoring at several levels, and at least my inability to see how we pay for and pull it off. (Ltr 21, Region 6 Fremont-Winema National Forest; Shimamoto. **Funding**)

What would it cost to adopt the MET Framework? What current work would we give up to accomplish it? What would the requirements for implementing the MET Framework imply for other monitoring requirements (e.g. EMS [Environmental Management System])? Would both have to be done? Even with the underestimated costs, it appears that the cost of implementing the MET Framework on a Forest would likely exceed the total funding available for Plan monitoring, precluding answering questions of local interest. (Ltr 23, Region 6; Freedman. **Funding**)

I believe the MET report should also include an Assumptions section that clearly identifies the context, need, use and hope of the MET – what is it, and what it is not. (Ltr 24, Region 9. **Monitoring/Framework**)

Question 4: What benefits and opportunities does this Framework provide over our current approach to monitoring?

Providing good examples of monitoring questions and performance measures will be extremely valuable. This Framework could get the ball rolling toward standardizing the process for developing LMP monitoring components. In so doing the products will be somewhat standardized. The Framework draws attention to the need for better coordinated monitoring efforts and efficiencies. The proof of concept work with the Forests you have selected will be extremely valuable. This Framework hopefully will be a touchstone that will lead the agency to dedicating the right type and amount of resources to LMP monitoring. (Ltr 7, Region 10; Friberg. **Standards and Measures**)

As discussed in 1a, the benefit is that it provides a consistent set of sub-elements and directs forests a logical way to document how they will monitor the DCs [desired conditions]. (Ltr 9, Washington OFC Watershed, Fish, and Wildlife; Henderson. **Monitoring/Framework**)

This provides guidance to revising forests on how to organize their monitoring schemes. This is more efficient than starting from scratch. Consistent inventory schemes could be developed and put into corporate data bases in a like manner that would make it easier to develop reports that would roll up results. This would help with cumulative effects analysis. It should be possible to make evaluations on habitat trends over areas larger than a forest. Activity tracking data base systems such as FACTS [Federal Agencies Centralized Trial-Balance System] could be used to assist in reporting on real time conditions (again, through consistent use of data bases). (Ltr 10, Region 5 EP; Burmark. **Organization**)

It is a very good start but still inadequate with respect to the necessary details to implement the policy. Giving less than 2 weeks to perform this review suggests that getting this done rather than getting this done right is at work. (Ltr 11, Pacific SW Research Station; Baldwin. **Monitoring/Framework**)

I am pleased that the NVUM [National Visitor Use Monitoring] program is seen as being able to contribute to a number of these monitoring issues and topics. That was always one of the primary goals for the program, as a key monitoring effort of human use of the forests for recreation. I think there are some additional ways that the NVUM program could contribute, but those would involve work and discussions beyond the scope of this general Framework document. (Ltr 18, Visitor Use Monitoring; English. **Monitoring/Framework**)

The MET (Monitoring) Framework is a valuable tool to organize our Region's work in monitoring, who is doing the work (National, Regional or Forest level), how we're funding the work (NFIM [National Forest Monitoring and Inventory] or other), the tie to the LMP component, and the tie to EMS [Environmental Management System], etc. I'm hoping that we can use the Framework in R1 to reach common understanding, evaluate, schedule, and fund future work. It is also in line with the 2005 Planning Rule.

I do believe strongly that the MET themes and sub-themes will help our forest staff prioritize and organize their individual monitoring programs, identify and nurture partners, and be better prepared to consolidate and evaluate monitoring information. The Mark Twain NF is already doing some of this consolidation in their efforts to work with FS Research (particularly FIA [Forest Inventory and Analysis] staff) to identify existing sources and future monitoring needs. (Ltr 22, Inventory and Monitoring Coordinators. **Organization**)

While the MET product represents thinking that will be very useful as Responsible Officials develop their monitoring programs, the MET product should be a discretionary tool rather than required in National direction. (Ltr 23, Region 6; Freedman. **Monitoring/Framework**)

Other comments:

In the LMP Monitoring and Evaluation table on Page 1, the watershed health sub-element lists soil productivity and air resources. These are only 2 of the plethora of possible components of watershed health. The important components are really dependent on the DC [desired condition] chosen by the Forest so I am uncertain what to add, subtract, etc. I would delete these sub-components since 1) they do not add anything to the table and 2) they are only included for some elements.

I have talked with several WFW staff and we feel that the "conservation and maintenance of soil, water, and air resources" sub-element table needs editing as the text in the different sections do not always link in a coherent manner. For example, we feel the monitoring questions should specifically link to the DC in order to provide reviewers with a usable example for this sub-element. If MET plans to continue using this table then we would like the opportunity to further develop this table.

Appendix 9 Data Currency - The first sentence describes "proposed monitoring questions". Again, I understood that the monitoring questions in the sub-element tables were only examples. Need to more clearly describe what the table is displaying. For example are the cost estimates for developing protocols; protocols and corporate databases; annual training and implementation; etc? My concern is 1) the numbers for watershed health do not make sense and 2) given our leaderships concern over monitoring costs we need to clearly define the scope of monitoring cost estimates. (Ltr 9, Washington OFC Watershed Fish Wildlife; Henderson. **Funding, Monitoring/Framework, Editorial**)

"The Framework was developed for application NFS-wide to serve as the foundation of a NFS monitoring and evaluation program. If implemented properly, it will serve as a unifying Framework to launch discussions of progress". This implies that will be forest, regional, and national level discussions. Is this true? (Ltr 17, USDA FS Int'l Program. **Monitoring/Framework**)

What does financial efficiencies" mean? What ever it is, it seems very internal FS oriented. Would something like "community employment, etc. be more meaningful with regard to the title of the theme. (Ltr 17, USDA FS Int'l Programs. **Editorial**)

"Desired Trend Statement" - Drop this requirement. Forests will be listing that obvious. The "planned" trend will always be toward DFC. The issue will be whether the observed trend is toward the DFC [desired future condition]. (Ltr 17, USDA FS Int'l Programs. **Monitoring/Framework**)

"The composition, structure, abundance and distribution of vegetation move toward the levels identified in the LMP desired conditions". If this is to be an example, I suggest you carry the example through out the entire [Framework]. Resist the temptation to use all of our bureaucratic phrases. (Ltr 17, USDA FS Int'l Programs. **Editorial**)

"Current condition and trend for forest types: composition, structure, abundance, distribution, vegetation, and successional processes identified in the DC…" Seems like "composition" is not needed. A forest is by definition a defined assembly of plants. The exception may be in heavily browsed areas. The forest is not conducting research. Vegetation composition within a forest type is very predictable. Succession is not needed because any particular succession stage is, by definition, a cover type. (Ltr 17, USDA FS Int'l Programs. **Monitoring/Framework**)

"This sub-element addresses the composition, structure, abundance, distribution, and successional processes…" This [document] did not monitor "successional processes. Weed these kinds of statements out of the document, because they create confusion. (Ltr 17, USDA FS Int'l Programs. **Editorial**)

I want to suggest a detail change -- in the Maintenance and Enhancement of Social Systems, the LMP performance measures mention 'visitor days'. That metric for recreation use is no longer valid or supported. The correct metric would be 'recreation visits'.

It seems that the way the Social and Economic Systems portion of this is presented, the Social systems focus more on non-use benefits, and the Economic systems focus on use benefits. That is, the Social systems portion monitors the provision of the set of socially desired (or desirable) opportunities from which Economic benefits could be derived but only through some usage of those opportunities. Included in the Economic benefits would be both market (jobs and income) and non-market (economic value) benefits. Since the majority of the benefits from recreational use (health, wellness, etc) are non-market, that is an important inclusion. It might be clearer to users to outline the difference between Social and Economic Systems in that way.

I think that the NVUM program could contribute data to the Infrastructure (Roads and Trails) element -- - there are questions in the NVUM survey that ask respondents to rate their overall satisfaction with the condition of forest roads and signage, and the level of importance they attach to these. I think that could address at least one of the monitoring questions indicated in that theme.

It seems to me that the infrastructure capacity should be expanded to include more than just roads and trails. Access can be provided through boat launches, airstrips, and navigable waterways. It would also seem that infrastructure could include recreation facilities (visitor centers, campgrounds, lodges), and administrative infrastructure (work centers, staff oversights, ranger stations, etc). It seems that the location, condition, and capacity of these all relate to the forest's ability to manage its resources. (Ltr 18, Visitor Use Monitoring; English. **Socio-Economic**)

Maintenance of Land Health and Vitality - The words in this theme promise to address elements that are not raised, e.g., land implicitly addresses soils (fertility, structure, stability and status re: historic variability), water, gas, organism dynamics, etc. Yes, I know soils and water are addressed elsewhere, but it is not impossible to imagine that both novice and scientist would read the word land health and have trouble thinking of just the sub-elements you mention, or more to the point, not thinking about soil, water, etc.

I can't get past the reality that as measures of our performance, these words have to have a common sense meaning not just to our troops in the field, but to all sorts in all walks of life, who take the time or have the job, to judge what/how we do! (Ltr 19, SPF COOPRTV FOR; Higgs. **Natural Resource Management**)

"National Forest/Grassland ecosystems have the capacity for renewal and recovery from outbreaks caused by native insects and pathogens while meeting values, uses, products, and services consistent with the LMP desired conditions…" There is logic for extreme caution when using the word value in this instance, because while a bug-killed snag may have no commercial value, it could be the key to the value assigned to "vittles" or habitat it provides critters dependent thereon. Think red-cockaded woodpecker and red-rot. (Ltr 19, SPF COOPRTV FOR; Higgs. **Natural Resource Management**)

Roads and Trails - While there are tons of reasons to make this road/access centric, there is also more than enough logic to either expand this single sub-element, or add additional sub-elements to illustrate our accountability for all of our built/intellectual capacity, e.g. administration, public outreach/education, disaster response (fire, et al) communication, technical expertise, fund provision, etc. (Ltr 19, SPF COOPRTV FOR; Higgs. **Natural Resource Management**)

The MET report should include an "assumptions" section that clearly identifies the context, need, use and hope of the MET – What is it? And what it is not? How will it most likely be utilized? I may have missed it, but in both the MET assumptions and discussion, the report needs to clearly show the links or absence of links to other monitoring type efforts or requirements, such as EMS, Keys' Standards Data Management Systems, Solem's Adaptive Management System, legal requirements (T&E, Water…), 5 year Comprehensive Evaluation Reports, and administrative items like FACTS, budgets, accomplishment reporting, and work planning. (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

The greatest value we can add to the monitoring programs of our forests is by digging into the information needs they identify along with their public and partners and assist them in forming and delivering better monitoring programs. I recommend that the Framework should be used, tested and improved as a tool in this process, but not "enforced" until it is clear that it meets the needs at the forest level. (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

The Framework seems less meaningful to the Zones' or Forests' LMP Monitoring Program....at least it appears that way because their products seem to be the itemized monitoring questions by their Plan's plan components (by specific DC [desired condition], objective, guideline). There may also be some hesitancy to organize by themes like "ecosystem diversity" and "species diversity". But with that given, their monitoring questions still crosswalk fairly well to the Framework. (See KIPZ-MET-Draft Monitoring Elements_081406.xls.) Would forests' monitoring chapters look different if the MET were in place before the plans were revised? I think they would, and if so will the MET become a de facto template for future revisions and amendments? (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

On page 22, Appendix 3, there is a statement that "there is broad Line Officer support for the WO to take the lead on developing the M&E Framework." Only 17 of the 127 Forest Supervisors (15%) were interviewed, how many of those 17 gave support? A 15% sampling probably can't be construed as "broad support" across the agency. Perhaps rephrase your statement as "Of the17 line officers interviewed, xx of them support the WO taking the lead…" (Ltr 23, Region 6; Freedman. **Editorial**)

On page 28 you refer to aggregation and flexibility and state that indicators should be designed in a manner that facilitates aggregation at a range of scales for different purposes. It would be helpful to specify the potential purposes. (Ltr 23, Region 6; Freedman. **Editorial**)

Section 3: External Review Comments

Summary

Section 3 consists of responses to questions asked of External Reviewers. A total of five External Reviewers responded. Question 1 (A&B) asks External Reviewers their opinion of the Framework, how the Framework helps monitor progress toward Desired Conditions, and whether the Framework is applicable on multiple scales. Some respondents approve of the Framework's assurance of higher quality data collection and reporting that will result from increased agency coordination. However, others are less certain how effective the Framework can be. Several respondents state that plan objectives will be difficult to achieve because desired condition statements lack specificity.

Question 2 asks External Reviewers for suggestions to improve the Framework. Some respondents suggest explicitly addressing the goals of the Multiple-Use Sustained-Yield Act and National Forest Management Act within the Framework. Others suggest adding recreation and economic benefits as sub-elements.

Question 3 (A&B) asks External Reviewers how their work with the Forest Service would be affected by the Framework and if it would help them work with the agency to address shared interests. Some respondents recommend coordinating with the Forest Service to create performance measures that track trends in key indicators, while others stress the importance of working together to prevent "dueling data sets" among cooperating agencies. Some respondents request explicit information about how partners will engage in the desired condition and measures process.

Other comments not specific to the questions include a request to adopt the Framework as the basic structure for all land management plans. Another respondent feels the Framework needs to identify the role of measures in improving understanding of ecological and social processes. Several respondents submit editorial suggestions.

Question 1A: What is your opinion of the Framework for Land Management Plan (LMP) monitoring and evaluation? Specifically, will the proposed Framework for LMP monitoring and evaluation help our LMP efforts monitor progress towards Desired Conditions?

> The basic monitoring Framework mirrors the Criteria for Sustainable Forest Management developed through the Montreal Process. We also use this Framework for planning and strongly support the use of this Framework for planning on National Forest System lands. Collectively the Forest Service and state forestry agencies have a story to tell about forest management. Recent plans and policy changes are moving us toward sustainability, but the story of sustainability cannot be told on a single ownership. Private lands are predominantly producing sustainable timber supplies while federal lands are concentrating on providing pieces essential to biological diversity and ecosystem health. To address sustainability you must look across ownerships and across the landscape. Therefore, we must work together to effectively tell the story of sustainability. Adopting a Framework that is compatible with the Montreal Process is an essential step that will facilitate our ability to coordinate data collection and reporting. (Ltr 14, Oregon Dep't of Forestry; Birch. **Monitoring/Framework**)

> Benefits to the USFS in using the system include the assurance that staff from other agencies is continually adding to the information included in the system, and that much of the data is of high quality

and currency. Links can be found in the system to other organizations, shortening the time and effort needed by USFS personnel to locate information that may be difficult to find. Note that the information is certainly about water as a primary focus, but can also include other data such as ecology that is relevant to a given watershed. (Ltr 15, USGS Water Roundtable; Smith. **Organization**)

Question 1B: Will the proposed Framework for LMP monitoring and evaluation work at multiple scales and allow an integrated assessment of progress towards Desired Conditions?

Clarity of Land Management Plan Desired Condition Statements. Articulating clear, measurable Desired Condition statements will be critical to the success of implementing this monitoring and evaluation Framework. The Report includes some great examples of very clear and measurable Desired Condition statements (e.g., the aspen ecosystem in the "Conservation of Biological Diversity" theme) but also includes a few examples of vague and difficult to measure Desired Condition statements (e.g., the goods and services example in "Maintenance and Enhancement of Economic Systems" theme). (Ltr 12, Nature Conservancy, Milkman. **Editorial**)

Desired conditions & performance measures. DCs [desired conditions] and performance measures need to be connected- i.e., DCs should be stated in terms similar to performance measures. The Report implies this in the description of performance measures, but then uses an example performance measure that is not tied to the DC (it uses "Acres and kind of treatment by vegetation type" as an example performance measure, yet the example DC does not say anything about how much area per unit time is desired to be treated). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Depending on the desired condition, the trend statement is general and may not adequately measure change, i.e., moving toward could have the added term of significantly and reference a specific "goal" in the desired condition. There are some very specific desired conditions mentioned in some examples (e.g., see the LMP desired condition for Invasive Species, p. 7) and if these are represented, then the trend statements can be more specific. If the desire conditions are not very specific then it may be difficult to achieve the objectives of the Framework, i.e., providing good feedback for the adaptive management circle(s). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Question 2: Based on your knowledge of Forest Service land management planning and the 2005 planning rule, what suggestions for improvement would you offer?

A key concern raised by this strategy is that it is not clear whether or to what degree the information to be provided during the evaluation of individual forests / plans can be aggregated upward. As I read this, the only type of statements that can be derived from an aggregation of these individual plan evaluations is of the nature of “XX percent of units are meeting the goals set forth in their plans.” I think this is derived from the fact that the individual plans and the individual evaluations are derived from the highly variable plan objectives from each forest or planning unit. (Please excuse me if I get the names of the components of the FS planning process incorrect….)

This diversity is necessary to ensure that each plan is targeted on issues relevant to that unit. However, it would be highly useful – and I suspect highly interesting to FS constituents – if, for example, there were standard reporting elements dealing with the number and direction of change in some key variables – various T&E species categories, trends in non-native plant species coverage and infestation area for non-native animals, and some metric dealing with vegetation diversity (perhaps the percent in range of natural variability?).

I’m not qualified to identify or suggest the specific metrics, but I do think it is important to design the monitoring and evaluation scheme so that it incorporates more information than whether a plan is meeting its goals or not. This is the fundamental flaw – finally being addressed – in water quality reporting under Section 305b of the Clean Water Act. States only had to report what percent of their waters were meeting their standards. Since the standards were different and could change over time

(read: since the plans goals are different and can change over time) there was no way to tell what the conditions or trends in overall water quality are. Designing a process that incorporates SOME level of key ecological variables in absolute terms would greatly strengthen this model. (Ltr 13, H. John Heinz III Center for Science, Economics, and the Environment; O'Malley. **Monitoring/Framework, Standards and Measures**

The proposed Framework should be modified slightly to explicitly address the goals of the Multiple-Use Sustained-Yield Act and National Forest Management Act. (Ltr 14, Oregon Dep't of Forestry; Birch. **Monitoring/Framework**)

The proposed Framework specifically lacks components for recreation and timber production. (Ltr 14, Oregon Dep't of Forestry; Birch. **Socio-Economic**)

To avoid providing fertile grounds for litigation, we suggest that the Framework specifically include Recreation as a sub-element under Social Benefits and Timber as a sub-element under Economic Benefits. (Ltr 14, Oregon Dep't of Forestry; Birch. **Socio-Economic**)

One of the biggest public issues here in Oregon is whether the Forest Service has been over-harvesting the timber on its lands. Not including this issue as a separate sub-element in the Framework may leave the impression with the public that the Forest Service is trying to hide something. We suggest greater outreach and coordination with states on data collection and reporting. 16 U.S.C. § 1610 requires that "in carrying out this subchapter, the Secretary of Agriculture shall utilize information and data available from other Federal, State, and private organizations and shall avoid duplication and overlap of resource assessment and program planning efforts of other Federal agencies." (Ltr 14, Oregon Dep't of Forestry; Birch. **Organization**)

Devising a reasonably short list of indicators is a continuing goal of analysts. For policy makers, a lengthy list may be comprehensive, but it is very difficult to use in any practical way, especially in handling tradeoffs among indicators. On the other hand, a list which is too short may fail the test of being sufficiently comprehensive to describe the problem area. This is a difficult balancing act. The 2005 SWRR Preliminary Report includes a list of 17 indicators, culled from an underlying list of hundreds. Clearly, more work is necessary. (Ltr 15, USGS Water Roundtable; Smith. **Standards and Measures**)

I'm a little disappointed at the scope of the external review of the economics part. I don't think using "academic institutions & research stations" or an FS contractor like Headwater Economic Consultants meets the standard for critical external review. MET is about applied monitoring which academics and researchers are poorly equipped to address. Asking a contractor to comment is silly on many levels. (Ltr 16, MIG Inc; Alward. **Monitoring/Framework**)

From a technical viewpoint, I don't see any obstacles to actually doing the economic monitoring; protocols have been in place for several years and it been tested on a few Forests. The limitations to economics monitoring are due to a lack of time, personnel and commitment to systematically carry it out. An untapped solution is to subscribe to economic monitoring data services (which surprisingly my company offers) rather than attempt to build up economics skills at the Forest level. (Ltr 16, MIG Inc; Alward. **Monitoring/Framework**)

Direction for analyzing monitoring information at the appropriate ecological level needs to be a part of the core Framework (i.e., the exec summary we were asked to review). For example, in the "biological diversity" example for aspen on p.3, the DFC needs to also state where this DFC should be applied - across an entire NF, or where the NF has designated the potential habitat for aspen. The "What it tells

us" text under the fire resilience sub-element is a good example of how to describe the importance of appropriate analysis area. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework, Scale**)

Desired trend statement - this component will be not be useful if staff follow the examples. For example, some "Desired trend" statements say: "The composition, structure, abundance and distribution of vegetation move toward the levels identified in the LMP desired conditions." "The quantity and rate of invasive species infestations decline throughout the unit's plan area". This component would be more useful if it specified the specific, quantifiable rate of change expected or desired, which will allow NFs to know if they're acting at the right scale and intensity. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Possible Data Sources. The Framework should also emphasize that for many measures to be meaningful and sensitive, they need a long-term commitment. Where existing data sources are not supported over the long-term, or existing data sources don't exist, the Framework needs a mechanism to ensure that measures will be supported for a time period adequate to detect desired change. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

The USFS needs to consider the issue of linking USFS action to the greater context of how the USFS lands fit into the eco-regional or global picture. My experience with the USFS shows that on many fronts individual forest's thinking has been limited to the lands that they own, and threats and problems addressed at the scale of that ownership. However, many desired future conditions should be linked in many instances to landscape-scale ecosystems or threats that may be bigger than the local forest context. This calls for looking at how the USFS begins to think about analysis on a national scale that will place local forests into the larger context of habitat, ecosystems, and threats. This would allow for the USFS to take actions that apply at the scale of the ecosystem or threat, and allow for a cumulative roll-up of individual LMPs measures to overall effect at the eco-regional or national scale. As it stands now, most individual forests have no way of assessing how they fit into the larger ecological context and would by default not design actions that go beyond the local forest. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

USFS may want to be more specific - and potentially identify requirements - about how forests should integrate the monitoring and evaluation (M&E) Framework into their Land Management Plans and Comprehensive Evaluation Reports. Specifically and most important, USFS may want to identify particular monitoring questions and performance measures that all applicable forests must integrate into land management plans and/or comprehensive evaluation reports. This would enable the potential roll-up of monitoring information across multiple forests or regions, and therefore would enable observations about trends across forests or regions. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

USFS should consider including instructions for forests to develop definitions for each performance measure so that it is possible to identify (a) the appropriate degree and pace of progress toward desired conditions and (b) potential triggers for changes in management action. Alternatively or in addition, trend statements should identify the quantifiable rate of change. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Landscape integrity or context is a very important concept and can have dramatic impacts on the results observed on USFS lands and species populations. More attention to that subject would make the measures more meaningful and potential more able to fuel discussions about adaptive management in the context of local communities, state agencies, and many other partners. Under LMP measures there is often a degree of specificity that may make it difficult to roll up. This is particularly notable in areas of stand structure and composition. The degree that these are good and efficient indicators may benefit from some scrutiny. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Performance-based budgeting. It will be important for the USFS to consider how to build on the recognition that adaptive management should be rewarded, even if the actions did not achieve the desired results. For example, we sometimes hear that reward come only comes if it is there is achievement of targets as outlined. When you apply this approach to complex ecological issues and adaptive management, it could have a chilling effect on taking bold and innovative action, or on taking actions at a scale that would not guarantee success. For instance, if the best science and work with partners shows that treating an invasive through germination suppressant was the most cost effective and efficient management technique for Japanese stilt-grass, and the monitoring of actions taken by the USFS showed this to be false or led to better science, there should be a way of rewarding that finding, even thought the desired outcome would be delayed. To ensure buy-in from the field, the USFS will need to do training and support workshops, and should make funding available for that. It will also be critical for the USFS to build capacity at the district, National Forest and regional levels to ensure that this new approach is successful. (Ltr 12, Nature Conservancy, Milkman. **Funding**)

Question 3A: Can you leverage the results of implementing this Framework in the Forest Service? Specifically, how would your work with the Forest Service be affected by the application of this Framework for LMP monitoring and evaluation?

Since the State of Oregon is proposing to use the same basic Framework for monitoring forest conditions and trends (see attached Draft Oregon Indicators of Sustainable Forest Management), there is great potential leverage for both our organizations if we can agree on a common set of indicators and the data sources (metrics) to measure those indicators. Perhaps eventually this Framework could be expanded to other western states, similar to efforts in the Northeastern Area. There are many potential benefits from working collectively to develop a common set of sustainability indicators. Cooperating would allow us to share costs, fill data gaps, improve the accuracy of the data, and in some cases aggregate the data for national reporting. The potential benefits of cooperation include: accepted standards for indicators allows policy discussions to center on the causes of problems rather than data accuracy, to create accepted indicators many organizations must buy in and use the data, lower cost – no one organization can afford to collect data for all the indicators that are needed to describe forest sustainability, shared data allows agencies to cooperate on analysis or build on the work done by someone else, and developing a common language to explain to Congress, our citizens, and the rest of the world, to what extent our forest resources are sustainably managed

However, the key to achieving these benefits is fully committing to work together to find data that meets both our needs. If either agency decides to go it alone, the outcome could be “dueling data sets” that cause public confusion and create a lack of trust for both our agencies. (Ltr 14, Oregon Dep’t of Forestry; Birch. **Standards and Measures, Organization**)

Monitoring questions. Many of these ask "How are management actions driving conditions toward DCs [desired conditions]?” This assumes up front that management actions that are being implemented are the right ones. It's a subtle point, but a necessary question to ask first is "Are management actions causing a desired change toward DCs?" Managers have to be able to say no to this question and change implementation actions if needed. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

USFS may want to require the inclusion of one or more performance measures to track trends in the abundance or distribution of certain species-of-concern across all applicable forests. USFS, the Conservancy, and other partners could potentially work together at any or all levels of the agency (forest, region, national) to generate such a list. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures, Organization**)

Question 3B: Would Forest Service use of this Framework help you work with the agency to address shared interests?

For the Framework to help the work of partners like TNC, it needs to be explicit about how partners will engage in the DC and measures process, and what "engagement" means relative to true and effective collaboration. I don't see the Framework making best use of the leveraging capacity of monitoring to bring diverse partners together on assessing the success of landscape-level collective action. If the NFs are only one piece of the landscape, the monitoring Framework needs to lay out how NFs should assess their actions within the greater, ecologically-relevant context - i.e., the Framework does not talk much about how to link multi-partner efforts to ensure they are effectively adaptive within this larger context. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Other comments:

The Forest Service should adopt this Framework as the basic structure for all its Land Management Plans. (Ltr 14, Oregon Dep't of Forestry; Birch. **Monitoring/Framework**)

The characteristics of indicator criteria which GAO [Government Accounting Office] rates as most desirable include: measurable, relevance, geographic scale, understandable, data available, data quality, importance, temporal scale, comparability, and trend data available. Consult the source document at GAO for more discussion about exactly how these criteria should be used. (Ltr 15, USGS Water Roundtable; Smith. **Standards and Measures**)

The focus is too ambiguous, sometimes talking about monitoring trends in FS contributions to economic systems and other times talking about monitoring trends in providing goods and services. (Ltr 16, MIG Inc; Alward. **Editorial**)

I'm left wondering where the MET proposal for monitoring trends in FS contributions to economic systems ends up. If it isn't required (I'd argue it practically is) then it is obviously a very good and useful idea. So, will the monitoring be done or will you stop at an agreement that it is a good idea? (Ltr 16, MIG Inc; Alward. **Monitoring/Framework**)

The USFS might consider reviewing some of this material associated with results chains for adaptation and adoption within their monitoring and evaluation system for tracking the effectiveness of management actions. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

The Framework needs to identify the role of measures in improving our understanding of ecological and related social processes and the effects of our management actions on ecological and social values. This is key to adaptive management - understanding that we must act on incomplete information, and must use monitoring to help improve this understanding and action. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Very good format and likely to be useful at multiple (all) scales. Performance is best guided by meaningful goals and/or objectives. If there is no concern over quantity or rate, then generic goals are adequate. However, if quantify, size, rate, or some specific measure is desired to achieve success -- not just some progress -- in the planning time frame, then some of the measures and statements would benefit from specificity. This may be difficult in a "Framework" document, but the examples set in this document will be repeated at the local level and should be as specific as possible. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Conservation of Biological Diversity - Species Diversity. This sub-element is misleading. It does not address species diversity, but rather addresses conservation of T&E and sensitive species, and avoiding species listing (as required under the planning rule). If this is the intention, the Report should not imply

it's a broader ecological concept. I assume the "Ecosystem Diversity" sub-element is designed to capture the need to measure more general species diversity. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

Examples relative to FRCC [Fire Regime Condition Class], the report needs to recognize that FRCC as mapped right now via LANDFIRE will not tell you if the current fire frequency or severity is within the range of natural variation - which is really important to sustaining resilience to fire. LANDFIRE FRCC maps right now only will tell you if the vegetation structure and composition is within the reference condition range (a proxy for fire regime condition). The LANDFIRE reference condition models (that TNC is developing) will tell you generally what the fire frequency and severity should be and measures should be sure to capture this important element of the fire regime. An example of monitoring questions to ask (that will show how NFs need to supplement FRCC to get at the true fire characteristics) would help (e.g., what is the current fire frequency and severity and how far is it from desired conditions for these factors?). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Native Insects and Pathogens. Sub-element needs a stronger tie to reference conditions, much like fire has with FRCC [Fire Regime Condition Class]. Measures should move the NFs toward understanding. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

The measurement of species diversity is covered under 3 topics: T & E species, avoidance of listing of SOC [Species of Concern] (Note that this is not a scientific way to deal with SOC since listing is usually done too late to have much of an effect, i.e., achieving ecological functionality for the species), and SOI [Species of Interest]. How are the processes of determining the above-referenced lists related to the planning cycle and performance such that changes in the status of species can be incorporated? This should occur under adaptive management steps, but I am wondering if the life of the lists are the same as the planning cycle. Many species can change status within that time frame. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

The Performance Measures are very general and probably would not be informative as worded. One measure refers to % change while the desired condition refers to miles. This may be confusing. Previous performance measure is very general and would benefit from greater specificity. (Ltr 12, Nature Conservancy, Milkman. **Editorial**)

Chapter 2: Resource Summary

Section 1: MET Framework

Summary

Respondents express concern about the Monitoring and Evaluation Framework. These include concerns about the scope of the MET document, its purpose and methodology, and efforts toward achieving sustainability and desired conditions.

Line Officer Comments

I appreciate the attempt to consolidate our monitoring and evaluation efforts. This Framework should help us by providing a consistent picture of how to characterize our efforts toward achieving desired conditions and sustainability. (Ltr 3, Ashley National Forest; Elliot. **Monitoring/Framework**)

We will need to think very strategically as an agency about how to accomplish the elements of this Framework. Our foray into monitoring under our last set of Forest Plans was only partially successful. This Framework could require substantially more effort with fewer resources. (Ltr 4, Humboldt Toiyabe National Forest; Monnig. **Monitoring/Framework**)

I support the objectives and desires for this kind of information on the broader scale and for gaining support from our publics for necessary work and focus, but I think it's erroneous to believe that other work and monitoring is going to go away or be satisfied by this information. We need to tighten up the best we can and utilize this information at the ground level the best we can, but we also need to be realistic and know that this is added work at the ground level to what we are currently doing with LMP monitoring. (Ltr 5, Region 4 Uinta National Forest; King. **Monitoring/Framework**)

Internal Review Comments

Yes and No. Yes the themes, sub-elements and generic desired conditions will provide a good Framework for LMP monitoring. However, I am concerned about the monitoring questions provided – even if they are only used as examples. The monitoring questions should address the desired condition through measuring achievement of the objectives. This step is bypassed in the MET Framework. Therefore, the monitoring questions provided should neither be used as the standard nor necessarily as good examples. (Ltr 7, Region 10; Friberg. **Monitoring/Framework**)

My understanding of the Framework is:

Provides forest planners with the monitoring themes (sub-elements) that best meet the intent of the planning rule. If all forests use these as a core set then it would serve to provide consistency at the highest level of forest plan monitoring.

The table used to document the components of each sub-element will be useful to forest planners as it directs them to document the appropriate steps in moving from their desired condition (DC) to monitoring questions and performance measures.

The Framework will help LMP efforts monitor progress towards [desired conditions] by defining these two components of their monitoring programs. (Ltr 9, Washington Office Watershed Fish and Wildlife; Henderson. **Monitoring/Framework**)

"The themes and sub-elements of the M&E Framework provide the architecture for envelopment of LMP desired conditions and related performance measures. The themes of the M&E Framework summarize key forest management legislation that guides and regulates management on the NFS." I

suspect that I will not be the first to point this out, but this is calls into question the title and stated title of this Framework – is it to develop a plan or is it to monitor and evaluate the influence of that plan? (Ltr 19, SPF COOPRTV FOR; Higgs. **Monitoring/Framework**)

The Framework to develop monitoring questions would provide direction to the Forests. I like the thought process that they used. The document provides focus for developing monitoring plan related to the new planning rule. However, I would have a couple of concerns with implementing a national strategy of this sort. First, the desired conditions are very detailed in the M&E strategy and in some cases may even be objectives. There appears to be need, at the national level, for some consistency on direction for specificity of desired conditions between different groups of the agency. Also, given the structure of the Forest Plan, the link to objectives would be useful. (Ltr 20, Humboldt-Toiyabe National Forest; Baggs. **Monitoring/Framework**)

The basic Framework of six categories of monitoring makes sense and is likely to be broadly applicable. While the Framework itself seems sound, it has not been linked in the document to any kind of implementation strategy. Some comments that come to mind: Who will be the responsible or accountable person or group for implementing the Framework? What is the intended cycle of Monitoring & Evaluation (M&E)? Will every unit be responsible for every element on every acre? Or will there be a menu of standard elements?

We suggest you add a section focused on information needed to make effective decisions about monitoring investments. Resources are limited. We always want more data than we can possibly acquire. Some data needs to be collected so that it can be shared with neighboring units, other landowners, and upward in the FS. How does a line officer decide what is essential, what needs to be shared, and what is not needed? How do we get to the essential few needed at the national, regional, sub-regional, or national forest level?

A key factor that affects the costs of monitoring investments is data quality. It is important for staff to inform line [officers] about the quality of data and associated costs prior to asking line for a decision. We suggest you add a row after possible data sources that address data quality. (Ltr 23, Region 6 OFC; Freedman. **Monitoring/Framework,** excerpt from larger comment)

I do not see any flaws in having forests use the sub-elements and general table structure for each sub-element. (Ltr 9, Washington OFC Watershed, Fish, and Wildlife; Henderson. **Monitoring/Framework**)

It will take several years to be implemented. I think that forests will use this as they undergo plan revision. If they have to go back and adjust existing monitoring plans to this format, there will be a lot of resistance to the time and budget this would require.

There is strong commitment to existing monitoring schemes, especially where significant efforts have been made, such as the Sierra Nevada Framework monitoring, Northwest Plan monitoring, Survey and Manage EIS, Quincy Library Group EIS, Sequoia Mediated Settlement Agreement, etc. Public expectations are high to implement these monitoring schemes. Commitments have been made with Research and University scientists over long-term monitoring work. Perhaps over time these could be steered into a national monitoring Framework. (Ltr 10, Region 5; Burmark. **Monitoring/Framework, Standards and Measures**)

One of the subjects that concern nearly everyone is MET reporting – who does it? Are the answers derived from existing data bases or do they require new data entries? If they are new what are the methods? Where are the data housed and who maintains them. There should be some expression of expectations about this in the report.

I am less cynical about the value of MET now, given the latest version of the report and our conversations, however, regional office and forest staff are buried in new monitoring ideas and expectations whether from revised plans, new plan rules, etc. The last thing anyone wants is a new idea

that appears to be in addition to everything else. This report needs to assuage that concern by making it clear what the MET is and is not, and how it is integrated and will compliment and draw from things we are already doing. It has to make monitoring easier not harder. (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

What is the role of Science in the Framework process? The report makes no mention of it. The 2005 planning rule requires that the Forest plan monitoring program take into account the best available science. How can M&E information and results be scaled up or down, as the document indicates is desirable? No guidance is provided.

Several of the themes have DFC [desired future condition] and Monitoring Questions that are so broad as to be meaningless—Watershed Health, Social Systems, Economic Systems. To what degree would implementing the MET process require new data to be collected or developed?

The inference that we need a cohesive Framework to meet regional and national reporting needs (first paragraph on page 1) is not consistent with the 2005 planning rule. The rule calls for a monitoring program identified by the Responsible Official and developed with public participation that takes into account financial and technical capabilities, and takes into account key social, economic and ecological performance measures relevant to the plan area (36 CFR 219.6(b)1). The MET product does none of these.

Some of the example desired condition statements in the MET Framework are not consistent with National guidance on plan components, e.g., the example LMP desired conditions under the "Maintenance of Land Health and Vitality" theme on page 7 are clearly 'objectives' rather than 'desired conditions'. This is also true of the example desired conditions on pages 10, 13 and 17. (Ltr 23, Region 6; Freedman. **Monitoring/Framework,** excerpt from larger comment)

I believe the MET report should also include an Assumptions section that clearly identifies the context, need, use and hope of the MET – what is it, and what it is not. (Ltr 24, Region 9. **Monitoring/Framework**)

As discussed in 1a, the benefit is that it provides a consistent set of sub-elements and directs forests a logical way to document how they will monitor the DCs [desired conditions]. (Ltr 9, Washington OFC Watershed, Fish, and Wildlife; Henderson. **Monitoring/Framework**)

It is a very good start but still inadequate with respect to the necessary details to implement the policy. Giving less than 2 weeks to perform this review suggests that getting this done rather than getting this done right is at work. (Ltr 11, Pacific SW Research Station; Baldwin. **Monitoring/Framework**)

I am pleased that the NVUM [National Visitor Use Monitoring] program is seen as being able to contribute to a number of these monitoring issues and topics. That was always one of the primary goals for the program, as a key monitoring effort of human use of the forests for recreation. I think there are some additional ways that the NVUM program could contribute, but those would involve work and discussions beyond the scope of this general Framework document. (Ltr 18, Visitor Use Monitoring; English. **Monitoring/Framework**)

While the MET product represents thinking that will be very useful as Responsible Officials develop their monitoring programs, the MET product should be a discretionary tool rather than required in National direction. (Ltr 23, Region 6; Freedman. **Monitoring/Framework**)

In the LMP Monitoring and Evaluation table on Page 1, the watershed health sub-element lists soil productivity and air resources. These are only 2 of the plethora of possible components of watershed health. The important components are really dependent on the DC [desired condition] chosen by the Forest so I am uncertain what to add, subtract, etc. I would delete these sub-components since 1) they

do not add anything to the table and 2) they are only included for some elements. We feel the monitoring questions should specifically link to the DC in order to provide reviewers with a usable example for this sub-element. If MET plans to continue using this table then we would like the opportunity to further develop this table. (Ltr 9, Washington Office - Watershed Fish Wildlife; Henderson. **Monitoring/Framework,** excerpt from larger comment)

"The Framework was developed for application NFS-wide to serve as the foundation of a NFS monitoring and evaluation program. If implemented properly, it will serve as a unifying Framework to launch discussions of progress". This implies that will be forest, regional, and national level discussions. Is this true? (Ltr 17, USDA FS Int'l Program. **Monitoring/Framework**)

"Desired Trend Statement" - Drop this requirement. Forests will be listing that obvious. The "planned" trend will always be toward DFC. The issue will be whether the observed trend is toward the DFC [desired future condition]. (Ltr 17, USDA FS Int'l Programs. **Monitoring/Framework**)

The MET report should include an "assumptions" section that clearly identifies the context, need, use and hope of the MET – What is it? And what it is not? How will it most likely be utilized? I may have missed it, but in both the MET assumptions and discussion, the report needs to clearly show the links or absence of links to other monitoring type efforts or requirements, such as EMS, Keys' Standards Data Management Systems, Solem's Adaptive Management System, legal requirements (T&E, Water…), 5 year Comprehensive Evaluation Reports, and administrative items like FACTS, budgets, accomplishment reporting, and work planning. (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

The greatest value we can add to the monitoring programs of our forests is by digging into the information needs they identify along with their public and partners and assist them in forming and delivering better monitoring programs. I recommend that the Framework should be used, tested and improved as a tool in this process, but not "enforced" until it is clear that it meets the needs at the forest level. (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

The Framework seems less meaningful to the Zones' or Forests' LMP Monitoring Program....at least it appears that way because their products seem to be the itemized monitoring questions by their Plan's plan components (by specific DC [desired condition], objective, guideline). There may also be some hesitancy to organize by themes like "ecosystem diversity" and "species diversity". But with that given, their monitoring questions still crosswalk fairly well to the Framework. (See KIPZ-MET-Draft Monitoring Elements_081406.xls.) Would forests' monitoring chapters look different if the MET were in place before the plans were revised? I think they would, and if so will the MET become a de facto template for future revisions and amendments? (Ltr 22, Inventory and Monitoring Coordinators. **Monitoring/Framework**)

External Review Comments

The basic monitoring Framework mirrors the Criteria for Sustainable Forest Management developed through the Montreal Process. We also use this Framework for planning and strongly support the use of this Framework for planning on National Forest System lands. Collectively the Forest Service and state forestry agencies have a story to tell about forest management. Recent plans and policy changes are moving us toward sustainability, but the story of sustainability cannot be told on a single ownership. Private lands are predominantly producing sustainable timber supplies while federal lands are concentrating on providing pieces essential to biological diversity and ecosystem health. To address sustainability you must look across ownerships and across the landscape. Therefore, we must work together to effectively tell the story of sustainability. Adopting a Framework that is compatible with the Montreal Process is an essential step that will facilitate our ability to coordinate data collection and reporting. (Ltr 14, Oregon Dep't of Forestry; Birch. **Monitoring/Framework**)

Achieving a balance between implementing strategies, strategy effectiveness monitoring, and status monitoring. The Framework points to the need for tracking the status of Desired LMP Conditions (which may or may not involve the need for management action - I refer to this as "status monitoring") and the need to track the effectiveness of management actions being implemented (I refer to this as "strategy effectiveness monitoring"). The allocation of limited resources among status monitoring needs, strategy effectiveness monitoring needs, and the need and cost of implementing the management actions themselves is a vexing challenge for most land management agencies and organizations (including TNC). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Desired conditions & performance measures. DCs [desired conditions] and performance measures need to be connected- i.e., DCs should be stated in terms similar to performance measures. The Report implies this in the description of performance measures, but then uses an example performance measure that is not tied to the DC (it uses "Acres and kind of treatment by vegetation type" as an example performance measure, yet the example DC does not say anything about how much area per unit time is desired to be treated). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Depending on the desired condition, the trend statement is general and may not adequately measure change, i.e., moving toward could have the added term of significantly and reference a specific "goal" in the desired condition. There are some very specific desired conditions mentioned in some examples (e.g., see the LMP desired condition for Invasive Species, p. 7) and if these are represented, then the trend statements can be more specific. If the desire conditions are not very specific then it may be difficult to achieve the objectives of the Framework, i.e., providing good feedback for the adaptive management circle(s). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

A key concern raised by this strategy is that it is not clear whether or to what degree the information to be provided during the evaluation of individual forests / plans can be aggregated upward. As I read this, the only type of statements that can be derived from an aggregation of these individual plan evaluations is of the nature of “XX percent of units are meeting the goals set forth in their plans.” I think this is derived from the fact that the individual plans and the individual evaluations are derived from the highly variable plan objectives from each forest or planning unit. (Ltr 13, H. John Heinz III Center for Science, Economics, and the Environment; O’Malley. **Monitoring/Framework,** excerpt from larger comment)

The proposed Framework should be modified slightly to explicitly address the goals of the Multiple-Use Sustained-Yield Act and National Forest Management Act. (Ltr 14, Oregon Dep’t of Forestry; Birch. **Monitoring/Framework**)

I'm a little disappointed at the scope of the external review of the economics part. I don't think using "academic institutions & research stations" or an FS contractor like Headwater Economic Consultants meets the standard for critical external review. MET is about applied monitoring which academics and researchers are poorly equipped to address. Asking a contractor to comment is silly on many levels. (Ltr 16, MIG Inc; Alward. **Monitoring/Framework**)

From a technical viewpoint, I don't see any obstacles to actually doing the economic monitoring; protocols have been in place for several years and it been tested on a few Forests. The limitations to economics monitoring are due to a lack of time, personnel and commitment to systematically carry it out. An untapped solution is to subscribe to economic monitoring data services (which surprisingly my company offers) rather than attempt to build up economics skills at the Forest level. (Ltr 16, MIG Inc; Alward. **Monitoring/Framework**)

Direction for analyzing monitoring information at the appropriate ecological level needs to be a part of the core Framework (i.e., the exec summary we were asked to review). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework,** excerpt from larger comment)

Desired trend statement - this component will be not be useful if staff follow the examples. For example, some "Desired trend" statements say: "The composition, structure, abundance and distribution of vegetation move toward the levels identified in the LMP desired conditions." "The quantity and rate of invasive species infestations decline throughout the unit's plan area". This component would be more useful if it specified the specific, quantifiable rate of change expected or desired, which will allow NFs to know if they're acting at the right scale and intensity. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Monitoring questions. Many of these ask "How are management actions driving conditions toward DCs [desired conditions]?" This assumes up front that management actions that are being implemented are the right ones. It's a subtle point, but a necessary question to ask first is "Are management actions causing a desired change toward DCs?" Managers have to be able to say no to this question and change implementation actions if needed. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

For the Framework to help the work of partners like TNC, it needs to be explicit about how partners will engage in the DC and measures process, and what "engagement" means relative to true and effective collaboration. I don't see the Framework making best use of the leveraging capacity of monitoring to bring diverse partners together on assessing the success of landscape-level collective action. If the NFs are only one piece of the landscape, the monitoring Framework needs to lay out how NFs should assess their actions within the greater, ecologically-relevant context - i.e., the Framework does not talk much about how to link multi-partner efforts to ensure they are effectively adaptive within this larger context. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

The Forest Service should adopt this Framework as the basic structure for all its Land Management Plans. (Ltr 14, Oregon Dep't of Forestry; Birch. **Monitoring/Framework**)

I'm left wondering where the MET proposal for monitoring trends in FS contributions to economic systems ends up. If it isn't required (I'd argue it practically is) then it is obviously a very good and useful idea. So, will the monitoring be done or will you stop at an agreement that it is a good idea? (Ltr 16, MIG Inc; Alward. **Monitoring/Framework**)

The USFS might consider reviewing some of this material associated with results chains for adaptation and adoption within their monitoring and evaluation system for tracking the effectiveness of management actions. (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Examples relative to FRCC [Fire Regime Condition Class], the report needs to recognize that FRCC as mapped right now via LANDFIRE will not tell you if the current fire frequency or severity is within the range of natural variation - which is really important to sustaining resilience to fire. LANDFIRE FRCC maps right now only will tell you if the vegetation structure and composition is within the reference condition range (a proxy for fire regime condition). The LANDFIRE reference condition models (that TNC is developing) will tell you generally what the fire frequency and severity should be and measures should be sure to capture this important element of the fire regime. An example of monitoring questions to ask (that will show how NFs need to supplement FRCC to get at the true fire characteristics) would help (e.g., what is the current fire frequency and severity and how far is it from desired conditions for these factors?). (Ltr 12, Nature Conservancy, Milkman. **Monitoring/Framework**)

Section 2: Funding

Summary

Respondents express concerns about funding for implementation and enforcement of the Framework, including monitoring cost estimates and budgeting.

Line Officer Comments

Would not propose deleting sub-elements so much as reducing an implied "data rich" information environment, which many Forests do not have and cannot possibly fund. For example, items such as, "composition, abundance, structure, and distribution" of ecosystems and species' habitat components; economic status and trends relying on IMPLAN [Implementation Plan]; current status and trends for other sub-elements which imply high-data intensity. (Ltr 6, Fremont-Winema National Forest, Rine. **Funding**)

Make it a menu of monitoring "options" and not a mandatory set of national monitoring items. NFIM [National Forest Monitoring and Inventory]/PN [Land Management Planning] funds do not and are not likely to support mandatory national monitoring and critical local monitoring commitments made through the collaborative planning process. And there is much other activity/work dependent on NFIM/PN funds besides plan monitoring. (Ltr 6, Fremont-Winema National Forest; Rine. **Funding**)

Generally, the requirements of the 2005 planning rule should be commensurate with the anticipated level of funds to administer plans revised under the 2005 rule. The collaborative planning process elevates local commitments made during the plan revision to greater importance in earning the trust necessary to reduce the planning process burden intended by the new rule.

A nationally mandated layer of unfunded monitoring potentially places line officers in the position of choosing which locally-developed monitoring will not get done. If the Monitoring Framework provides a menu of monitoring options to consider in developing local monitoring strategies, such monitoring could have stronger local support. It may preclude the opportunity to sense national conditions and trends but it would engender more local support to the revised plan. (Ltr 6, Fremont-Winema National Forest; Rine. **Funding**)

Internal Review Comments

It appears that some of the costs on page 30 are substantially underestimated given the performance measures in the previous sections. For example, one of the performance measures under Maintenance of Land Health and Vitality (page 7) is "Change in ecosystem and species diversity in infested areas". We are not aware of a peer-reviewed protocol for monitoring changes in ecosystem diversity or species diversity, and we are especially concerned that, even if such a protocol existed, it would cost substantially more than the $1.6 million annual estimate. Similarly, the watershed LMP performance measures on page 11, based on our experience, could not be monitored on a single Forest in a statistically sound manner for $.8 million, much less on the entire national forest system. We suggest that cost estimates be removed or revised based on peer reviewed monitoring protocols. (Ltr 23, Region 6; Freedman. **Funding,** excerpt from larger comment**)**

It's very hard to understand how this LMP Framework will be implemented without specific funding and specific ties to local relevance. Another unfunded mandate will not fly in these reduced budget times. (Ltr 8, Aldo Leopold Wilderness Research Institute; Landres. **Funding**)

Planning funds (NFIM [National Forest Monitoring and Inventory] and NFPN [Land Management Planning]) have been on a steady decline. My priority would be to adopt the national monitoring strategy as we do plan revisions. I would not want to divert funding from this to go back and rework existing monitoring plans to fit this scheme if the forest was not in revision (Ltr 10, Region 5 EP; Burmark. **Funding,** excerpt from larger comment)

I'm not in NFS but if I was, where is the enforcement of the policy? Without any oversight the Forest Service is being set up for failure. We will lose court cases because it will be found that folks didn't follow existing policy – all because there was no enforcement/oversight described or budgeted. (Ltr 11, PAC SW Research Station; Baldwin. **Funding**)

Once this Framework is agreed to, what will be the funding source? NFIM [National Forest Monitoring and Inventory] (a fund code that seems to be dwindling and needed to support completion of remaining Forest Plan Revisions...along with NFPN [Land Management Planning])? Resource funds (NFTM [Timber Management], NWFW [National Watershed, Fish, and Wildlife], etc)? My concern is enormous effort and expense being put into new guidance, expectations for monitoring at several levels, and at least my inability to see how we pay for and pull it off. (Ltr 21, Region 6 Fremont-Winema National Forest; Shimamoto. **Funding**)

What would it cost to adopt the MET Framework? What current work would we give up to accomplish it? What would the requirements for implementing the MET Framework imply for other monitoring requirements (e.g. EMS)? Would both have to be done? Even with the underestimated costs, it appears that the cost of implementing the MET Framework on a Forest would likely exceed the total funding available for Plan monitoring, precluding answering questions of local interest. (Ltr 23, Region 6 OFC; Freedman. **Funding**)

External Review Comments

Performance-based budgeting. It will be important for the USFS to consider how to build on the recognition that adaptive management should be rewarded, even if the actions did not achieve the desired results. For example, we sometimes hear that reward come only comes if it is there is achievement of targets as outlined. When you apply this approach to complex ecological issues and adaptive management, it could have a chilling effect on taking bold and innovative action, or on taking actions at a scale that would not guarantee success. For instance, if the best science and work with partners shows that treating an invasive through germination suppressant was the most cost effective and efficient management technique for Japanese stilt-grass, and the monitoring of actions taken by the USFS showed this to be false or led to better science, there should be a way of rewarding that finding, even thought the desired outcome would be delayed. To ensure buy-in from the field, the USFS will need to do training and support workshops, and should make funding available for that. It will also be critical for the USFS to build capacity at the district, National Forest and regional levels to ensure that this new approach is successful. (Ltr 12, Nature Conservancy, Milkman. **Funding**)

Section 3: Organization and Coordination

Summary

Respondents express concerns about organization of monitoring programs and data resources, including coordination with other agencies/groups.

Internal Review Comments

It is a good idea to have a consistent organizational pattern for monitoring. R5 had a Regional outline that all monitoring reports from forests had to use. It makes it easier to find information and to get a sense of larger scale trends. (Ltr 10, Region 5 EP; Burmark. **Organization**)

No. There is the consistent theme that currently existing datasets will be able to answer all questions at all scales at the desired levels of precision. There is no formalized direction or resources that are proposed to be available to decide if existing or new data is needed. (Ltr 11, Pacific Southwest Research Station; Baldwin. **Organization**)

This provides guidance to revising forests on how to organize their monitoring schemes. This is more efficient than starting from scratch. Consistent inventory schemes could be developed and put into corporate data bases in a like manner that would make it easier to develop reports that would roll up results. This would help with cumulative effects analysis. It should be possible to make evaluations on habitat trends over areas larger than a forest. Activity tracking data base systems such as FACTS [Federal Agencies Centralized Trial-Balance System] could be used to assist in reporting on real time conditions (again, through consistent use of data bases). (Ltr 10, Region 5 EP; Burmark. **Organization**)

The MET (Monitoring) Framework is a valuable tool to organize our Region's work in monitoring, who is doing the work (National, Regional or Forest level), how we're funding the work (NFIM [National Forest Monitoring and Inventory] or other), the tie to the LMP component, and the tie to EMS [Environmental Management System], etc. I'm hoping that we can use the Framework in R1 to reach common understanding, evaluate, schedule, and fund future work. It is also in line with the 2005 Planning Rule.

I do believe strongly that the MET themes and sub-themes will help our forest staff prioritize and organize their individual monitoring programs, identify and nurture partners, and be better prepared to consolidate and evaluate monitoring information. The Mark Twain NF is already doing some of this consolidation in their efforts to work with FS Research (particularly FIA [Forest Inventory and Analysis] staff) to identify existing sources and future monitoring needs. (Ltr 22, Inventory and Monitoring Coordinators. **Organization**)

External Review Comments

Benefits to the USFS in using the system include the assurance that staff from other agencies is continually adding to the information included in the system, and that much of the data is of high quality and currency. Links can be found in the system to other organizations, shortening the time and effort needed by USFS personnel to locate information that may be difficult to find. Note that the information is certainly about water as a primary focus, but can also include other data such as ecology that is relevant to a given watershed. (Ltr 15, USGS Water Roundtable; Smith. **Organization**)

One of the biggest public issues here in Oregon is whether the Forest Service has been over-harvesting the timber on its lands. Not including this issue as a separate sub-element in the Framework may leave the impression with the public that the Forest Service is trying to hide something. We suggest greater outreach and coordination with states on data collection and reporting. 16 U.S.C. § 1610 requires that "in carrying out this subchapter, the Secretary of Agriculture shall utilize information and data available

from other Federal, State, and private organizations and shall avoid duplication and overlap of resource assessment and program planning efforts of other Federal agencies." (Ltr 14, Oregon Dep't of Forestry; Birch. **Organization**)

Cooperating would allow us to share costs, fill data gaps, improve the accuracy of the data, and in some cases aggregate the data for national reporting. The potential benefits of cooperation include: accepted standards for indicators allows policy discussions to center on the causes of problems rather than data accuracy, to create accepted indicators many organizations must buy in and use the data, lower cost – no one organization can afford to collect data for all the indicators that are needed to describe forest sustainability, shared data allows agencies to cooperate on analysis or build on the work done by someone else, and developing a common language to explain to Congress, our citizens, and the rest of the world, to what extent our forest resources are sustainably managed. However, the key to achieving these benefits is fully committing to work together to find data that meets both our needs. If either agency decides to go it alone, the outcome could be "dueling data sets" that cause public confusion and create a lack of trust for both our agencies. (Ltr 14, Oregon Dep't of Forestry; Birch. **Organization,** excerpt from larger comment)

USFS, the Conservancy, and other partners could potentially work together at any or all levels of the agency (forest, region, national) to generate such a list. (Ltr 12, Nature Conservancy, Milkman. **Organization,** excerpt from larger comment)

Section 4: Applicability and Scale

Summary

Respondents express concern about applicability and implementation of the Framework across various levels of Forest Service administration, e.g., national, regional, forest-level, and sub-forest level monitoring.

Line Officer Comments

I may have misunderstood, but my understanding of the monitoring protocol was that it was designed to answer broad scale condition questions that may not also be sufficient for Forest level LMP monitoring and evaluation. I understood that there was hope they would mesh, but this is yet to be determined and the fate of this effort will be decided before we are able to answer that question. (Ltr 5, Region 4 Uinta National Forest; King. **Scale**.)

You can see that changes in the Framework took place following interviews with folks. Overall efforts seems a bit more useful to the District level in not requiring additional work to monitor. (Ltr 1, Douglas Ranger District Coronado National Forest; Hardy. **Scale**)

Internal Review Comments

The basic Framework of six categories of monitoring makes sense and is likely to be broadly applicable. (Ltr 23, Region 6; Freedman. **Scale,** excerpt from larger comment)

At the forest scale, it provides a Framework for structuring their monitoring programs as described in 1a. The Framework is less useful at the regional and national levels, although consistency among forests in using the sub-elements and associated terminology would help regions and national staff convey forest plan monitoring to others.

I don't think the Framework can effectively aggregate forest results up to regional and national levels for each sub element since the DCs [desired conditions] will vary by Forest. For example, we will not be able to say watershed health is improving on XX% of watersheds if each forest defines watershed health differently.

(Ltr 9, Washington OFC Watershed, Fish, and Wildlife; Henderson. **Scale,** excerpt from larger letter)

No. For example, FIA [Forest Inventory and Analysis] data is suggested as one of the data sources for many issues. However, FIA is good at the State scale but certainly not at the National Forest scale or below.

I don't see any "integrated assessment". Who will look at the required reports? What will be done with those? Where is the oversight of the process both on the day-to-day implementation and for the longer term annual and 5-year reports? (Ltr 11, Pacific SW Research Station; Baldwin. **Scale**)

One goal of this Framework is said to be a "unifying multi-scale Framework" for monitoring forest, regional and national conditions. It is a laudable goal, one the agency has deemed for years. However, in my opinion I believe the Framework as it is presented is only a partial solution. (Ltr 17, USDA FS Int'l Program; Hendricks. **Scale,** excerpt from larger letter)

Overall, I think this is a good start to where we need to go as an agency, and helps document how these various targets and issues can be seen as an integrated whole. I think that the approach is workable at a forest scale or larger. I do not know whether it works across the board at sub-forest scales. That would depend on the geographic scale of the data across most or all elements. (Ltr 18, Visitor Use Monitoring; English. **Scale**)

The level of specificity and scale could be an issue. For example, right now, our best data set gives us dominant species cover only for uplands. On over 6 million acres, addressing species composition at the community level (if selected as an indicator) could be overwhelming especially using statistically valid techniques and sampling. (Ltr 20, Humboldt-Toiyabe National Forest; Baggs. **Scale,** excerpt from larger letter)

External Review Comments

Direction for analyzing monitoring information at the appropriate ecological level needs to be a part of the core Framework (i.e., the exec summary we were asked to review). The "What it tells us" text under the fire resilience sub-element is a good example of how to describe the importance of appropriate analysis area. (Ltr 12, Nature Conservancy, Milkman. **Scale,** excerpt from larger letter)

Section 5: Standards and Measures

Summary

Respondents express concern about the need for standardized monitoring questions, processes, indicators, plan components, and performance measures.

Internal Review Comments

Maybe. How the information would be collapsed and reported at the national level has yet to be shown. This should be included in the Framework. Again, it will be very difficult to come up with a standard set of monitoring questions since the LMP objectives will be very specific. If you could get all forests to agree on THE SET of standard monitoring questions and PERMFORMANCE MEASURES then maybe it would work. But even then you need more than just standard performance measure; you will also need standard protocols. One approach that might work is to ask each forest to indicate whether they are trending towards, away, or achieving the general desired condition based on whatever it is they choose to measure for their more specific desired condition and objectives. This is a bit like the approach of the FMC, but there would be supporting data behind the answer. (Ltr 7, Region 10; Friberg. **Standards and Measures**)

I am not a lawyer, but no I don't think we would lose in court over guidance or even direction. In addition, the 2005 rule does not even require NEPA on making changes to the monitoring component of the 2005 rule LMPs. Requiring implementation of the full Framework as it is today would be fatal in that it would do more harm than good in that it would reduce the efficiency and effectiveness of our forest plan monitoring. This again relates back to the monitoring questions and performance measures. (Ltr 7, Region 10; Friberg. **Standards and Measures**)

The document needs to incorporate EMS [Environmental Management System]. EMS should be referenced in the overall flowchart and throughout the document. It needs to show how EMS can contribute to the overall, larger forest monitoring scheme. It needs to explain where EMS fits and how work will not be duplicated between EMS and other monitoring systems. (Ltr 10, Region 5 EP; Burmark. **Standards and Measures,** excerpt from larger letter)

There is no mention [of] quality assurance, oversight, review process (other than the review of this document), legitimate sampling procedures (i.e., probabilistic sampling), measures of precision associated with the results of data analysis, enough personnel trained to perform analyses, data management, etc. There is just a single sentence on efforts being "Scientifically sound." How can this effort be considered scientifically sound with just a single sentence? (Ltr 11, Pacific SW Research Station; Baldwin. **Standards and Measures**)

Implementation of data collection and reporting protocols will require a level of disipline the agency has been reluctant to impose on the field. (Ltr 17, USDA FS Int'l Program; Hendricks. **Standards and Measures,** excerpt form larger comment)

In setting up the monitoring program, my concern would be the level of direction on what would have to be monitored and the methods used. Efforts to standardize inventory for rare plants has been successful at the national level, but monitoring is more difficult to standardize methods. This effort has removed some local flexibility. In addition, given declining budgets, the Forest may only be able to address national monitoring needs. The longer document was not clear on how exactly this strategy would be implemented including level of direction that would be given to the Forests. (Ltr 20, Humboldt-Toiyabe National Forest; Baggs. **Standards and Measures**)

This Framework cannot be implemented without a standard approach to defining Reference Conditions. We currently inventory and monitor a number of traditional products, goods, and services. These should be ranked for importance and linked to specific themes and sub-questions. (Ltr 23, Region 6; Freedman. **Standards and Measures**, excerpt from larger comment)

I may have missed it, but in both the MET assumptions and discussion, the report needs to clearly show the links or absence of links to other monitoring type efforts or requirements, such as EMS [Environmental Management System], Keys' Standards Data Management Systems, Solem's Adaptive Management System, legal requirements (T&E, Water…), 5 year Comprehensive Evaluation Reports, and administrative items like FACTS, budgets, accomplishment reporting, and work planning. (Ltr 24, USDA FS Region 9. **Standards and Measures**)

I would suggest an illustration of the need for coordinated inventory and monitoring and the obvious application at each level of management. I suggest the folowing: RPA [Resources Planning Act] national level - % of ecosystems restored or maintained, National LMP level -- % of DFC [desired future condition] obtained, state level - % of forest in Aspen, and forest DFC - % of land in Aspen.

This provides some sense of what is being monitored. The forest is interested in acres covered in Aspen. There is no way the national LMP office would have a target, but it is likely they should be monitoring the achivement of plan DFCs (or someone should be). If there is a coorrespending RPA goal, it will be very broad and will likely be related just to forest ecosytems, rather than Aspen. (Ltr 17, USDA FS Int'l Program; Hendricks. **Standards and Measures**)

Providing good examples of monitoring questions and performance measures will be extremely valuable. This Framework could get the ball rolling toward standardizing the process for developing LMP monitoring components. In so doing the products will be somewhat standardized. The Framework draws attention to the need for better coordinated monitoring efforts and efficiencies. The proof of concept work with the Forests you have selected will be extremely valuable. This Framework hopefully will be a touchstone that will lead the agency to dedicating the right type and amount of resources to LMP monitoring. (Ltr 7, Region 10; Friberg. **Standards and Measures**)

External Review Comments

It is not clear to me how the LMP measures will relate back to the broader information in the Generic Desired Condition, i.e., the other values and uses. Where does this occur in the Framework? (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

It would be highly useful – and I suspect highly interesting to FS constituents – if, for example, there were standard reporting elements dealing with the number and direction of change in some key variables – various T&E species categories, trends in non-native plant species coverage and infestation area for non-native animals, and some metric dealing with vegetation diversity (perhaps the percent in range of natural variability?).

I'm not qualified to identify or suggest the specific metrics, but I do think it is important to design the monitoring and evaluation scheme so that it incorporates more information than whether a plan is meeting its goals or not. This is the fundamental flaw – finally being addressed – in water quality reporting under Section 305b of the Clean Water Act. States only had to report what percent of their waters were meeting their standards. Since the standards were different and could change over time (read: since the plans goals are different and can change over time) there was no way to tell what the conditions or trends in overall water quality are. Designing a process that incorporates SOME level of key ecological variables in absolute terms would greatly strengthen this model. (Ltr 13, H. John Heinz III Center for Science, Economics, and the Environment; O'Malley**. Standards and Measures)**

Devising a reasonably short list of indicators is a continuing goal of analysts. For policy makers, a lengthy list may be comprehensive, but it is very difficult to use in any practical way, especially in handling tradeoffs among indicators. On the other hand, a list which is too short may fail the test of

being sufficiently comprehensive to describe the problem area. This is a difficult balancing act. The 2005 SWRR Preliminary Report includes a list of 17 indicators, culled from an underlying list of hundreds. Clearly, more work is necessary. (Ltr 15, USGS Water Roundtable; Smith. **Standards and Measures**)

Possible Data Sources. The Framework should also emphasize that for many measures to be meaningful and sensitive, they need a long-term commitment. Where existing data sources are not supported over the long-term, or existing data sources don't exist, the Framework needs a mechanism to ensure that measures will be supported for a time period adequate to detect desired change. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

USFS may want to be more specific - and potentially identify requirements - about how forests should integrate the monitoring and evaluation (M&E) Framework into their Land Management Plans and Comprehensive Evaluation Reports. Specifically and most important, USFS may want to identify particular monitoring questions and performance measures that all applicable forests must integrate into land management plans and/or comprehensive evaluation reports. This would enable the potential roll-up of monitoring information across multiple forests or regions, and therefore would enable observations about trends across forests or regions. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

USFS should consider including instructions for forests to develop definitions for each performance measure so that it is possible to identify (a) the appropriate degree and pace of progress toward desired conditions and (b) potential triggers for changes in management action. Alternatively or in addition, trend statements should identify the quantifiable rate of change. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Landscape integrity or context is a very important concept and can have dramatic impacts on the results observed on USFS lands and species populations. More attention to that subject would make the measures more meaningful and potential more able to fuel discussions about adaptive management in the context of local communities, state agencies, and many other partners. Under LMP measures there is often a degree of specificity that may make it difficult to roll up. This is particularly notable in areas of stand structure and composition. The degree that these are good and efficient indicators may benefit from some scrutiny. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Since the State of Oregon is proposing to use the same basic Framework for monitoring forest conditions and trends, there is great potential leverage for both our organizations if we can agree on a common set of indicators and the data sources (metrics) to measure those indicators. Perhaps eventually this Framework could be expanded to other western states, similar to efforts in the Northeastern Area. (Ltr 14, Oregon Dep't of Forestry; Birch. **Standards and Measures**)

USFS may want to require the inclusion of one or more performance measures to track trends in the abundance or distribution of certain species-of-concern across all applicable forests. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures,** excerpt from larger letter)

The characteristics of indicator criteria which GAO [Government Accounting Office] rates as most desirable include: measurable, relevance, geographic scale, understandable, data available, data quality, importance, temporal scale, comparability, and trend data available. Consult the source document at GAO for more discussion about exactly how these criteria should be used. (Ltr 15, USGS Water Roundtable; Smith. **Standards and Measures**)

The Framework needs to identify the role of measures in improving our understanding of ecological and related social processes and the effects of our management actions on ecological and social values. This

is key to adaptive management - understanding that we must act on incomplete information, and must use monitoring to help improve this understanding and action. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Very good format and likely to be useful at multiple (all) scales. Performance is best guided by meaningful goals and/or objectives. If there is no concern over quantity or rate, then generic goals are adequate. However, if quantify, size, rate, or some specific measure is desired to achieve success -- not just some progress -- in the planning time frame, then some of the measures and statements would benefit from specificity. This may be difficult in a "Framework" document, but the examples set in this document will be repeated at the local level and should be as specific as possible. (Ltr 12, Nature Conservancy, Milkman. **Standards and Measures**)

Section 6: Natural Resource Management

Summary

Respondents express concerns about monitoring specific to natural resources, including wilderness values, forest health, and watersheds.

Internal Review Comments

This Framework looks like it would work for specific resources, but I don't understand how it would work for resources that are integrated across several or all of the attributes of desired conditions. For example, the key wilderness attribute that the agency is mandated by law and policy to preserve is wilderness character. But wilderness character cuts across all of the ecological, social, and economic themes and sub-elements. How does such an integrated attribute work in this LMP Framework? (Ltr 8, Aldo Leopold Wilderness Research Institute; Landres. **Natural Resource Management**)

I'd suggest that the major problem and challenge is to provide a monitoring Framework for resources that cut across and integrate the distinct themes and sub-elements. The example of wilderness character is already described. I don't [think] this is a fatal flaw, but it is a serious issue that needs to be resolved. (Ltr 8, Aldo Leopold Wilderness Research Institute; Landres. **Natural Resource Management**)

Conservation and Maintenance of Soil, Water, and Air Resources - This, in my opinion, may be the Achilles heel of this effort – soils, and water, and air/etc. deserve sub-elements – the current reference to the eco-function of a watershed is subject to claims that it is not consistent with the promise of the theme. More importantly, lack of specific address of the multiple and significantly important particulars of the role of soils and the role (both terrestrially and aquatically) of water will put even our own specialists' teeth on edge. (Ltr 19, SPF COOPRTV FOR; Higgs. **Natural Resource Management**)

Maintenance of Land Health and Vitality - The words in this theme promise to address elements that are not raised, e.g., land implicitly addresses soils (fertility, structure, stability and status re: historic variability), water, gas, organism dynamics, etc. Yes, I know soils and water are addressed elsewhere, but it is not impossible to imagine that both novice and scientist would read the word land health and have trouble thinking of just the sub-elements you mention, or more to the point, not thinking about soil, water, etc.

I can't get past the reality that as measures of our performance, these words have to have a common sense meaning not just to our troops in the field, but to all sorts in all walks of life, who take the time or have the job, to judge what/how we do! (Ltr 19, SPF COOPRTV FOR; Higgs. **Natural Resource Management**)

"National Forest/Grassland ecosystems have the capacity for renewal and recovery from outbreaks caused by native insects and pathogens while meeting values, uses, products, and services consistent with the LMP desired conditions…" There is logic for extreme caution when using the word value in this instance, because while a bug-killed snag may have no commercial value, it could be the key to the value assigned to "vittles" or habitat it provides critters dependent thereon. Think red-cockaded woodpecker and red-rot. (Ltr 19, SPF COOPRTV FOR; Higgs. **Natural Resource Management**)

External Review Comments

The USFS needs to consider the issue of linking USFS action to the greater context of how the USFS lands fit into the eco-regional or global picture. My experience with the USFS shows that on many fronts individual forest's thinking has been limited to the lands that they own, and threats and problems addressed at the scale of that ownership. However, many desired future conditions should be linked in many instances to landscape-scale ecosystems or threats that may be bigger than the local forest context.

This calls for looking at how the USFS begins to think about analysis on a national scale that will place local forests into the larger context of habitat, ecosystems, and threats. This would allow for the USFS to take actions that apply at the scale of the ecosystem or threat, and allow for a cumulative roll-up of individual LMPs measures to overall effect at the eco-regional or national scale. As it stands now, most individual forests have no way of assessing how they fit into the larger ecological context and would by default not design actions that go beyond the local forest. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

Conservation of Biological Diversity - Species Diversity. This sub-element is misleading. It does not address species diversity, but rather addresses conservation of T&E and sensitive species, and avoiding species listing (as required under the planning rule). If this is the intention, the Report should not imply it's a broader ecological concept. I assume the "Ecosystem Diversity" sub-element is designed to capture the need to measure more general species diversity. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

Native Insects and Pathogens. Sub-element needs a stronger tie to reference conditions, much like fire has with FRCC [Fire Regime Condition Class]. Measures should move the NFs toward understanding. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

The measurement of species diversity is covered under 3 topics: T & E species, avoidance of listing of SOC (Note that this is not a scientific way to deal with SOC since listing is usually done too late to have much of an effect, i.e., achieving ecological functionality for the species), and SOI. How are the processes of determining the above-referenced lists related to the planning cycle and performance such that changes in the status of species can be incorporated? This should occur under adaptive management steps, but I am wondering if the life of the lists are the same as the planning cycle. Many species can change status within that time frame. (Ltr 12, Nature Conservancy, Milkman. **Natural Resource Management**)

Section 7: Socio-Economic Impact

Summary

Respondents express concerns about monitoring specific to socio-economic activities and impacts, including recreation, resource extraction, and transportation.

Internal Review Comments

Maintenance and Enhancement of Social Systems - A literal over promise, how about something simpler, both concept and implication wise --- Sustainable provision of NFS social benefits to the American people. (Ltr 19, SPF COOPRTV FOR; Higgs. **Socio-Economic**)

I want to suggest a detail change -- in the Maintenance and Enhancement of Social Systems, the LMP performance measures mention 'visitor days'. That metric for recreation use is no longer valid or supported. The correct metric would be 'recreation visits'.

It seems that the way the Social and Economic Systems portion of this is presented, the Social systems focus more on non-use benefits, and the Economic systems focus on use benefits. That is, the Social systems portion monitors the provision of the set of socially desired (or desirable) opportunities from which Economic benefits could be derived but only through some usage of those opportunities. Included in the Economic benefits would be both market (jobs and income) and non-market (economic value) benefits. Since the majority of the benefits from recreational use (health, wellness, etc) are non-market, that is an important inclusion. It might be clearer to users to outline the difference between Social and Economic Systems in that way.

I think that the NVUM program could contribute data to the Infrastructure (Roads and Trails) element --- there are questions in the NVUM survey that ask respondents to rate their overall satisfaction with the condition of forest roads and signage, and the level of importance they attach to these. I think that could address at least one of the monitoring questions indicated in that theme.

It seems to me that the infrastructure capacity should be expanded to include more than just roads and trails. Access can be provided through boat launches, airstrips, and navigable waterways. It would also seem that infrastructure could include recreation facilities (visitor centers, campgrounds, lodges), and administrative infrastructure (work centers, staff oversights, ranger stations, etc). It seems that the location, condition, and capacity of these all relate to the forest's ability to manage its resources. (Ltr 18, Visitor Use Monitoring; English. **Socio-Economic**)

Roads and Trails - While there are tons of reasons to make this road/access centric, there is also more than enough logic to either expand this single sub-element, or add additional sub-elements to illustrate our accountability for all of our built/intellectual capacity, e.g. administration, public outreach/education, disaster response (fire, et al) communication, technical expertise, fund provision, etc. (Ltr 19, SPF COOPRTV FOR; Higgs. **Socio-Economic**)

External Review Comments

The proposed Framework specifically lacks components for recreation and timber production. (Ltr 14, Oregon Dep't of Forestry; Birch. **Socio-Economic**)

To avoid providing fertile grounds for litigation, we suggest that the Framework specifically include Recreation as a sub-element under Social Benefits and Timber as a sub-element under Economic Benefits. (Ltr 14, Oregon Dep't of Forestry; Birch. **Socio-Economic**)

Section 8: Editorial Comments

Summary

Respondents address problems related to spelling, grammar, clarity, consistency, formatting, and other deficiencies specific to the MET document.

Line Officer Comments

Delete the wording within the sub-elements that are not highlighted within circles. This is confusing as to whether they need addressed separately or are there as suggestions. Might be better to include in the text rather than the diagram. (Ltr 2, Land between the Lakes National Recreation; Hallisey. **Editorial**)

Appreciate the examples. Most sections are explained thoroughly, making this easy to follow. (Ltr 2, Land between the Lakes National Recreation; Hallisey. **Editorial**)

Internal Review Comments

We suggest you add a row after possible data sources that address data quality. The monitoring questions should not begin with the word "how", but rather simply ask the question. Starting with the word "how" implies an assumption about the question being asked. (Ltr 23, Region 6; Freedman. **Editorial**, excerpt from larger comment)

My largest concern is that the document does not clearly lay out whether the DCs, monitoring questions, and performance measures are required, recommended, or only examples. This is partially due to conflicting language in the document.

Page 1 says "Each sub-element has a standard desired condition that can be augmented by forests" and the "Framework features an example set of desired condition statements, core monitoring questions, performance measures, and requisite data needs.

In the introductory letter for this review it says "The FS Monitoring and Evaluation Team (MET) has developed a unifying, multi-scale Framework for monitoring and evaluating forest, regional, and national progress toward achieving standard and unique desired conditions on forests and grasslands within the National Forest System (NFS)."

A more extreme example is in Appendix 1, where the MET charter directs the Framework to include "a core set of monitoring questions and related performance measures that flow from DCs".

The phrases I underlined contradict each other. The MET team and leadership need to clarify whether they want the MET Framework to require standard DCs, monitoring questions and/or performance measures, consider these recommendations, or just provide examples.

Similarly, I was confused by the tables for each sub-element in terms of whether MET is requiring, suggesting, or providing examples. It is not clear that each consists of 1) a standard or recommended DC and 2) examples for each of the other columns in the table (at least that is my understanding of the tables). I feel the document would convey a clearer message if 1) the list of recommended DCs for each theme is listed in a single table and 2) 1 or 2 examples of a completed table. (Ltr 9, Washington OFC Watershed, Fish, and Wildlife; Henderson. **Editorial**, excerpt from larger comment)

I just want you to know that as an atypical FS forester, there are clearly some places where the word/logic choices finally selected will be problematic with our critics and elicit questions from potential allies. Know that if there was one change I could make, it would be to make is shorter and an easier read. (Ltr 19, SPF COOPRTV FOR; Higgs. **Editorial**)

Some of the questions seem difficult or impossible to answer in any consistent manner, such as on page 7 (Maintenance of Land Health and Vitality), "Change in ecosystem and species diversity in infested

areas." How would over 100 different forests answer that consistently over time? Other questions could be improved by editing, such as "How effective were our management activities including partnerships in preventing or controlling targeted invasive species (some of which may e species of interest)?" We suggest it be edited as follows "How effective were our management activities, including partnerships, in reducing the impact of…." It is hard to say that any activity can actually prevent or control certain invasive species, but we might be able to reduce their impact. We need questions that are realistic.

Similar edits are needed on other monitoring questions, such as on page 13 (Maintenance and Enhancement of Social Systems), we aren't sure what you mean by the first question, suggest deleting the second and third questions, and add the question "Is the Forest making progress toward socio-economic desired conditions?"

On page 15 (Maintenance and Enhancement of Economic Systems) we suggest deleting the monitoring questions and replacing them with something like these: What is the level of goods and services provided from NFS unit and their contribution to the plan area's supply of goods and services? What is the level of employment and labor income attributable to NFS goods and services and their contribution to the plan area's economy? The monitoring questions on page 17 (Infrastructure Capacity) are very different than the style of questions in the other themes. We suggest making sure the style and intent is similar throughout. In addition, it seems it would be very costly to collect data to answer the four questions posed. (Ltr 23, Region 6; Freedman. **Editorial**, excerpt from larger comment**)**

The [lack of] specificity beyond the themes, sub-elements, and generic desired conditions. (Ltr 7, Region 10; Friberg. **Editorial**)

The document is written in a technical style. It would help to have it re-written to make it more interesting and appealing to a wider audience. It needs to better say what the problem is that this will fix and how it will benefit resource management, the environment, adaptive management, etc. I am not certain that all monitoring commitments fit into this scheme. There needs to be some flexibility to make changes or add on to the basic scheme. (Ltr 10, Region 5 EP; Burmark. **Editorial,** excerpt from larger comment)

I recommend that each example be read very carefully by a resource specialist from that area. I do not believe many of the examples make strict sense. Given the size of the audience for this document, national direction statements must be very tightly crafted if there we are to avoid a multitude of interpretations of them, or just plain confusion. (Ltr 17, USDA FS Int'l Program; Hendricks. **Editorial**)

The document identifies many data sources but many are not populated with information specific enough to answer the monitoring questions. (Ltr 20, Humboldt-Toiyabe National Forest; Baggs. **Editorial,** excerpt from larger comment)

Appendix 9 Data Currency - The first sentence describes "proposed monitoring questions". Again, I understood that the monitoring questions in the sub-element tables were only examples. Need to more clearly describe what the table is displaying. (Ltr 9, Washington OFC Watershed Fish Wildlife; Henderson. **Editorial,** excerpt from larger comment)

What does financial efficiencies" mean? What ever it is, it seems very internal FS oriented. Would something like "community employment, etc. be more meaningful with regard to the title of the theme. (Ltr 17, USDA FS Int'l Programs. **Editorial**)

"The composition, structure, abundance and distribution of vegetation move toward the levels identified in the LMP desired conditions". If this is to be an example, I suggest you carry the example through out the entire [Framework]. Resist the temptation to use all of our bureaucratic phrases. (Ltr 17, USDA FS Int'l Programs. **Editorial**)

"This sub-element addresses the composition, structure, abundance, distribution, and successional processes…" This [document] did not monitor "successional processes. Weed these kinds of statements out of the document, because they create confusion. (Ltr 17, USDA FS Int'l Programs. **Editorial**)

On page 22, Appendix 3, there is a statement that "there is broad Line Officer support for the WO to take the lead on developing the M&E Framework." Only 17 of the 127 Forest Supervisors (15%) were interviewed, how many of those 17 gave support? A 15% sampling probably can't be construed as "broad support" across the agency. Perhaps rephrase your statement as "Of the17 line officers interviewed, xx of them support the WO taking the lead…" (Ltr 23, Region 6; Freedman. **Editorial**)

On page 28 you refer to aggregation and flexibility and state that indicators should be designed in a manner that facilitates aggregation at a range of scales for different purposes. It would be helpful to specify the potential purposes. (Ltr 23, Region 6; Freedman. **Editorial**)

External Review Comments

Clarity of Land Management Plan Desired Condition Statements. Articulating clear, measurable Desired Condition statements will be critical to the success of implementing this monitoring and evaluation Framework. The Report includes some great examples of very clear and measurable Desired Condition statements (e.g., the aspen ecosystem in the "Conservation of Biological Diversity" theme) but also includes a few examples of vague and difficult to measure Desired Condition statements (e.g., the goods and services example in "Maintenance and Enhancement of Economic Systems" theme). (Ltr 12, Nature Conservancy, Milkman. **Editorial**)

The focus is too ambiguous, sometimes talking about monitoring trends in FS contributions to economic systems and other times talking about monitoring trends in providing goods and services. (Ltr 16, MIG Inc; Alward. **Editorial**)

The Performance Measures are very general and probably would not be informative as worded. One measure refers to % change while the desired condition refers to miles. This may be confusing. Previous performance measure is very general and would benefit from greater specificity. (Ltr 12, Nature Conservancy, Milkman. **Editorial**)

Appendix A

Content Analysis Methodology

Analysis of comment on the Monitoring and Evaluation Framework deviates from traditional processes used by the Content Analysis Team (CAT). Respondents were not self-selected, but received an invitation to comment from the Monitoring and Evaluation Team (MET). Respondents did not express comment in an unstructured format, as is typical of CAT project work. Instead, MET provided pre-developed questionnaires and invited three groups of respondents to comment on the Framework: Line Officers, Internal Reviewers, and External Reviewers. Questions were developed to identify concerns specific to each group of respondents, and their comments were returned in a format that generally followed the organization of the questionnaires.

Because information was gathered through the use of 3 separate questionnaires, it was necessary to provide a preliminary analysis of comments organized according to the MET questionnaires. This analysis helps reviewers and analysts to understand some dynamics from within the responding groups that are important. This analysis became the Chapter 1. Chapter 1 is organized precisely along the lines of the 3 questionnaires, and consolidates information from multiple respondents for each given question. Within Chapter 1, comments made by Line Officers are included in Section 1; Internal and External Reviewers are contained in Sections 2 and 3 respectively.

In reviewing the Chapter 1 analysis, it became apparent that presentation of information based primarily on the structure of the questionnaires would not allow reviewers to readily understand what pervasive themes cut across the comments from multiple reviewing groups. For example, did respondents from all three groups have similar concerns about the economics of implementing the framework? Where and in what context were these specific economic concerns raised? Because of the need to understand the information simply from this broader perspective, all of the data presented in Chapter 1 was reorganized and presented again in Chapter 2, only this time it was organized according to common concerns or resources, instead of being organized according to the questionnaires.

Because no formal coding structure was used, coding was based on the pervasive themes identified during the analysis and review of comment. Topical issues were categorized and referenced using coding criteria that identifies the letter number, organization, respondent's name, and resource topic (e.g., (Ltr 6, Fremont-Winema National Forest, Rine. Funding)). Topical issues were further refined and consolidated into the eight resource topics featured in this summary.

Appendix B

Questions Asked of Line Officers

1. What is your opinion of framework for LMP monitoring and evaluation?
    a. Dislike ____
    b. Okay ____
    c. Good ____
    d. Very good ____
    e. Outstanding ____

2. Will it work on your forest/grassland?
    a. Not at all ____
    b. Maybe ____
    c. Probably ____
    d. Generally ____
    e. Easily ____

3. Would you use it on your forest/grassland?
    a. No way ____
    b. Will consider it ____
    c. Probably ____
    d. Likely ____
    e. Absolutely ____

4. What changes are needed to the framework so that your answers to questions 1-3 would be most positive?
    a. Edit wording (provide suggested edits)
    b. Add sub-elements(s) (provide name and description)
    c. Delete sub-elements(s) (which one(s) and why)
    d. Other changes (provide specifics)

5. Please provide any other comments you might have on this monitoring and evaluation effort.

Appendix C

Questions Asked of Internal Reviewers

1. What is your opinion of the Framework: Specifically
    a. Will the proposed Framework for LMP monitoring and evaluation help our LMP efforts monitor progress towards Desired Conditions? Please explain.
    b. Will the proposed Framework for LMP monitoring and evaluation work at multiple scales and provide an integrated assessment of progress towards Desired Conditions?

2. Are there fatal flaws with using this widely in the Forest Service? If so, please describe them and suggest resolutions.

3. If this was to be implemented service-wide, what would prevent you from using it?

4. What benefits and opportunities does this Framework provide over our current approach to monitoring?

Appendix D

Questions Asked of External Reviewers

1. What is your opinion of the Framework for Land Management Plan (LMP) monitoring and evaluation? Specifically
    a. Will the proposed Framework for LMP monitoring and evaluation help our LMP efforts monitor progress towards Desired Conditions? Please explain.
    b. Will the proposed Framework for LMP monitoring and evaluation work at multiple scales and allow an integrated assessment of progress towards Desired Conditions? Please explain.

2. Based on your knowledge of Forest Service land management planning and the 2005 planning rule, what suggestions for improvement would you offer?

3. Can you leverage the results of implementing this Framework in the Forest Service? Specifically
    a. How would your work with the Forest Service be affected by the application of this Framework for LMP monitoring and evaluation? Please describe any benefits, opportunities, or concerns you have.
    b. Would Forest Service use of this Framework help you work with the agency to addressed shared interests?