April 29, 2013

Ecosystem Management Coordination Team
USDA Forest Service
Planning Directives Comments
P.O. Box 40088
Portland, OR 97240

Re: Forest Service Proposed Land Management Planning Directives

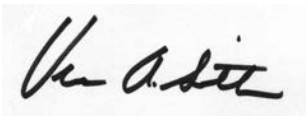
Dear Ecosystem Management Coordination Team:

On behalf of the undersigned organizations, I am submitting the attached comments on the Forest Service's proposed directives providing guidance on implementing the 2012 forest planning rule (78 Fed. Reg. 13316, Feb. 27, 2013). The comments are the product of a thorough review of the proposed directives conducted by an ad-hoc coalition of conservation organizations from across the nation. The individuals who drafted the comments have extensive experience and expertise in the scientific, legal, economic, and policy aspects of national forest planning (see Appendix).

Our coalition's comments cover 16 topics, some focusing on individual chapters of the planning directives and others covering several chapters. An executive summary provides a brief synopsis of our comments on each topic.

We trust that the Forest Service will carefully consider these comments and recommendations to improve the planning directives. We appreciate the opportunity to comment on the proposal, and look forward to working with the agency as you finalize the directives in the coming months.

Sincerely,



Vera Smith, Forest Planning and Policy Director
The Wilderness Society
1660 Wynkoop St., Suite 850
Denver, CO 80202
303.650.5818 x111
vera_smith@tws.org

On behalf of:

Bryan Bird
Wild Places Program Director
WildEarth Guardians
516 Alto St.
Santa Fe, NM 87501
bbird@wildearthguardians.org

Kristen L. Boyles, Staff Attorney
Earthjustice
705 Second Ave., Suite 203
Seattle, WA 98104
206.343.7340 x1033
kboyles@earthjustice.org

Susan Britting, Ph. D.
Executive Director
Sierra Forest Legacy
PO Box 244
Garden Valley, CA 95633
(530) 295-8210
britting@earthlink.net

Susan Jane M. Brown
Staff Attorney
Western Environmental Law Center
1216 Lincoln Street
Eugene, OR 97401
brown@westernlaw.org

Greg Costello
Executive Director
Wildlands Network
3432 SW Holly St.
Seattle, WA 98126
206.260.1177
www.twp.org

Greg Haller, Conservation Director
Pacific Rivers Council
317 SW Alder Street, Suite 900
Portland, OR 97204
503.228.3555
greg@pacificrivers.org

Peter Hart
Conservation Analyst/Staff Attorney
Wilderness Workshop
P.O. Box 1442
Carbondale, CO 81623
peter@wildernessworkshop.org

Marv Hoyt
Idaho Director
Greater Yellowstone Coalition
162 North Woodruff Ave.
Idaho Falls, ID 83401
mhoyt@greateryellowstone.org

Jeff Kuyper
Executive Director
Los Padres ForestWatch
P.O. Box 831
Santa Barbara, CA 93102
jeff@LPFW.org

Jay Lininger
Ecologist
Center for Biological Diversity
P.O. Box 11374
Portland, OR 97211
jlininger@biologicaldiversity.org

Lisa McGee
National Forests & Parks Program Director
Wyoming Outdoor Council
937 Sandcherry Way
Jackson, WY 83001
lisa@wyomingoutdoorcouncil.org

David Moryc
Senior Director River Protection Program
American Rivers
317 SW Alder, Suite
(503) 307-1137
dmoryc@americanrivers.org

Kevin Mueller
Program Director
Utah Environmental Congress
1817 South Main, Suite 10
Salt Lake City, Utah 84115
www.uec-utah.org
kevin@uec-utah.org
(801) 466-4055

Peter Nelson
Senior Policy Advisor for Federal Lands
Defenders of Wildlife
P.O. Box 1336
Bozeman, MT 59715
pnelson@defenders.org

Mary O'Brien
Utah Forests Program Director
Grand Canyon Trust
maryobrien10@gmail.com
HC 64 Box 2604
Castle Valley UT 84532
(435) 259-6205

Andrew J. Orahoske
Conservation Director
Environmental Protection Information Center
145 G St., Ste. A
Arcata, CA 95521
andrew@wildcalifornia.org

Sarah Peters
Legal Liaison/Staff Attorney
Wildlands CPR
P.O. Box 50104
Eugene, OR 97405
sarah@wildlandscpr.org

John Robison
Public Lands Director
Idaho Conservation League
P.O. Box 844
Boise, ID 83701
jrobison@wildidaho.org

Catherine Semcer
Senior Washington, DC Representative
Sierra Club
50 F Street, NW, Eighth Floor
Washington, DC 20001
202-675-6696
www.sierraclub.org

Duane Short
Wild Species Program Director
Biodiversity Conservation Alliance
P.O. Box 1512
Laramie, WY 82073
duane@voiceforthewild.org

Gary Tabor, Executive Director
Center for Large Landscape Conservation
P.O. Box 1587
Bozeman, MT
406.586.8082
gary@climateconservation.org

Table of Contents

Executive Summary

The U.S. Forest Service has proposed directives to guide implementation of the 2012 Planning Rule. An ad-hoc coalition of conservation organizations has joined forces to conduct a thorough review of the directives. The review covered 16 topics, some focusing on individual chapters of the directives and others covering several chapters. Following is a short summary of the conservation coalition's detailed comments.

Wilderness and Designated Areas

Many places in the National Forest System warrant special designation to recognize and protect their exceptional natural characteristics and recreational, scientific, ecological, or cultural values. The directives should encourage the use of designated areas to help achieve landscape conservation and climate change adaptation goals. Areas recommended for wilderness designation in forest plans should be managed as wilderness pending congressional action, including protection from motorized and mechanized uses that degrade wilderness character.

Roads

Addressing the excessive transportation system is one of the most meaningful restoration actions the Forest Service can take to improve water quality and wildlife habitat, mitigate climate-induced stresses, and provide for sustainable and quality recreation. The proposal needs to be strengthened to integrate planning and management actions necessary to achieve a sustainable transportation system into the forest planning framework.

Recreation

Forest plans should ensure quality recreation outcomes, not just opportunities. In order to achieve quality recreation outcomes, plans should ensure that --

- land allocation tools are proactively used to achieve quality recreation outcomes.
- the recreation plan components are directly responsive to the recreation niche identified during the assessment phase.
- recreation does not detract from the outdoor and natural characteristics that attract visitors to the national forests and that make recreation in national forests a different experience from that in other locales.
- plans comply with Executive Order 11644, as amended by 11989, and other relevant laws and regulations, and require non-suitability and suitability analyses for motorized use when such use is present on a national forest.

Standards

Standards are the only planning component that can adequately insure protection of water quality, species diversity, and other resources. The directives do not adequately emphasize the importance of standards or provide enough guidance in how standards should be used in planning. Providing weak guidance on developing standards undermines the entire set of directives and forest planning process.

Ecosystem Services

The concept of ecosystem services is potentially a very powerful way to improve public understanding of the many social, economic, cultural, and ecological ways in which the national forests benefit people. The

planning directives should encourage the Forest Service to explore and describe a broad array of ecosystem service benefits, rather than limiting the assessment and forest plan to a few "key" ecosystem services.

Grazing

A wide diversity of Forest Service ecosystems and habitats such as riparian areas, springs, wet meadows, aspen stands, sagebrush communities, and desert grasslands are grazed as "rangeland." The directives focus too heavily on commercial livestock grazing as the dominant use of these ecologically valuable and fragile landscapes and too little on assessment of livestock impacts on these landscapes and other uses of these lands. The directives should encourage establishment of large, ungrazed reference areas and watersheds to gauge the impacts of grazing. The role of public participation in rangeland management and grazing activities should be factored into the socio-economic monitoring.

Minerals Management – Oil, Gas, and Coal

The directives fail to recognize the Forest Service's authority and responsibility to determine where and how mineral development will be allowed in the National Forest System. Oil and gas drilling and coal mining can only occur where those activities are consistent with forest management plans. The directives should require planners to evaluate the suitability of lands for mineral development and prohibit mining in roadless areas and other environmentally sensitive places.

Renewable Energy

The Forest Service should not be taking a piecemeal approach toward identifying which areas are suitable and unsuitable for renewable energy infrastructure. By studying the landscape and determining in advance of project proposals where we can expect high and low impacts — both environmental and commercial — development can be steered to appropriate places and away from areas of conflict.

Ecosystem Integrity and Species Diversity

We recommend several changes to make the planning directives more clear, consistent, effective, and efficient, including –

- Explain in simple terms how ecological sustainability, ecosystem integrity, and species conservation fit together in the adaptive planning framework.
- Ensure that planning assumptions and uncertainty are addressed during assessment, incorporated into plan components, and tested and reduced via monitoring.
- Provide more structured guidance on how to evaluate the effects of ecosystem plan components on at-risk species, in particular how population viability will be evaluated during planning and monitoring.
- Factor climate change into assessments of ecosystem integrity.
- Clarify the decision-making and public involvement process for identifying Species of Conservation Concern.
- Integrate focal species into the Assessment and Planning stages of the adaptive process to enhance plan effectiveness.
- Strengthen protection for listed species, such as by requiring compliance with recovery plans.

Watersheds and Water

The ability of the planning directives to maintain and restore watershed integrity and water resources will largely depend on how well the directives address many of the other issues raised in these comments, such as standards (especially for riparian areas), roads, and climate change. The directives should provide criteria for selection of Priority Watersheds and should ensure that those watersheds are protectively managed, including

after restoration work is complete. We are glad that the directives address the critical issue of maintaining adequate water flows, and we encourage the Forest Service to designate watershed-scale refugia for sensitive aquatic species.

Climate Change

The directives are woefully inadequate in their guidance for integrating climate change into forest planning. Key climate change-related terms such as adaptation and resilience are left undefined, and climate change is even omitted from the definition of "stressors." Descriptions of specific exposure factors associated with climate change -- such as higher temperatures, reduction in frost-free days, changing proportions of rain and snow, frequency of extreme precipitation events, alterations in snowpack, and lengthier periods of drought – are virtually absent. Consequently, climate change impacts on at-risk species, water quality, and other ecosystem services will not necessarily be factored into plan components.

Public Participation

Another serious failing of the proposed directives is the absence of any guidance for integrating the public participation requirements of the National Environmental Policy Act into the forest planning process. Conversely, the directives place too much emphasis on the use of high-intensity collaborative processes, to the potential detriment of citizens (including youth, minority, and low-income populations) who may not be willing or able to participate that way. The directives should require a public comment period on the draft assessment, given its importance to the planning process and meaningful public engagement.

Objections Process

Overall, the proposed directives for implementing the 2012 planning rule's pre-decisional objection process adequately provide for public engagement in forest planning. However, the directives would benefit from some clarifying language that better identifies the rights and responsibilities of the public as well as the Forest Service.

Timber Management

The proposed directives create a fairly complex framework directing forest vegetation resource planning, and would benefit from clarification and simplification of concepts where possible. For example, the directives should clarify how biomass production and post-fire salvage logging are factored into the calculation of sustained yield and the identification of lands unsuitable for timber production and timber harvest.

Wilderness Evaluation

The proposed directives significantly improve the wilderness evaluation process by adhering more closely to criteria in the Wilderness Act, simplifying the evaluation, enhancing transparency, and aligning Forest Service inventory and evaluation policy much more closely with that used by the other land management agencies. Eliminating the special provisions for eastern national forests is acceptable, as long as other changes in the directives such as the modified road criteria and the allowance for restoration are retained.

Wild and Scenic Rivers

The proposed directives do a commendable job of improving the Wild and Scenic River evaluation process by better describing and clarifying key requirements under the Wild and Scenic Rivers Act. For rivers classified as "eligible," the directives should prohibit water resource projects and hydroelectric projects and facilities pending an "ineligible or not suitable" determination.

Comments on Chapters 10, 20, and 30 by Topic

Wilderness and Designated Areas

I. Introduction

We are pleased that the planning rule enables the Forest Service in the plan revision and development process to create or recommend administratively designated areas. Designated areas are places with outstanding or unique natural characteristics whose recreational, scientific, or cultural values warrant recognition, special management, and interpretation. Many places within the National Forest System are remarkable naturally, culturally, or recreationally and would benefit from special recognition and management attention. This is particularly true given that climate change is adding stress to our natural systems and forcing us to contemplate management schemes that will facilitate species adaptation (such as creating climate refugia and migratory connections), and growing concern that the younger generation may be less interested in public lands and forests. We hope that the Forest Service shares our enthusiasm for this concept and includes language in the final directives that articulates the utility of designated areas for protecting and interpreting specific habitats, features, ecological functions, and experiences, and encourages their application in forest plans.

II. Issues and Recommendations

A. Designated areas should be managed to maintain the values for which they are designated.

Explanation: The directives do not explicitly state that management of designated areas must ensure that the purposes for which the area was designated are protected and maintained per FSM 2372.4. In addition, the directives do not reiterate direction in FSM 2372.4 to emphasize providing interpretive services to enhance visitors' understanding and appreciation of the area's special features.

Recommendation: The directives should clearly articulate that plan components must ensure that the purposes for which the area was designated are protected and maintained, and that other uses are allowed "to the extent that these uses are in harmony with the purpose for which the area was designated." (FSM 2370, Page 3). Plan components should also emphasize as appropriate providing interpretive services to enhance visitors' understanding and appreciation of the area's special features.

B. The Forest Service has discretion to designate types of designated areas other than those listed in Chapter 10, 14-Exhibit 01.

Explanation: The planning rule does not restrict the type or number of administratively designated areas that the Forest Service can designate in the forest planning process.[1] The language at section

[1] For example, the definition of a Designated Area in the planning rule includes examples of administrative designations but not an exhaustive list. *"Designated Area.* An area or feature identified and managed to maintain its unique special character or purpose. Some categories of designated areas may be designated only by statute and some categories may be established administratively in the land management planning process or by other administrative processes of the Federal executive branch. Examples of statutorily designated areas are national heritage areas, national recreational areas, national scenic trails, wild and scenic rivers, wilderness areas, and wilderness study areas. Examples of administratively designated areas are experimental forests, research natural areas, scenic byways, botanical areas, and significant caves." 36 CFR 219.19.

22.22 affirms this: "Exhibit 01 lists some types of designated areas that the responsible official may consider, the designating official for each type of designated area, and the location of existing guidance for their designation. The list in exhibit 01 is not comprehensive." However, related language at section 14 (chapter 10, page 64) implies that there is a limited set of designated areas, saying: "Exhibit 01 of this section lists the types of statutorily designated areas and administratively designated areas that may be present or potentially designated in NFS plan areas; and the administratively designated areas that the regional forester may designate."

Also, we notice that the list of administratively designated areas (outside of the forest planning process) at 14-Exhibit 01 does not include Outstanding Natural Resource Waters (ONRW). The ONRW are waters that receive special protection against degradation under state water quality standards and the federal Clean Water Act. The ONRW designation constitutes the most protective "Tier III" of the anti-degradation policy, providing that "[w]here high quality waters constitute an outstanding National resource, such as waters of National Parks, State parks and wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected." 40 C.F.R. § 131.12(a)(3). EPA ONRW policy language requires that actions "must not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ONRW." EPA Handbook at 4-10.

Recommendation: Clarify in section 14 that the responsible official has the discretion to designate administratively designated areas beyond those listed in the Exhibits. Also, add Outstanding Natural Resource Waters to the list in Exhibit 14-01

C. Consider adding assessment questions to the list at section 14(2).

Explanation: Chapter 10 at section 14(2) offers a number of questions that the Forest Service should consider asking related to assessing the potential need and opportunity for additional designated areas. Although the questions are useful, we think that adding a few more that address the concept of a larger protected areas network, connectivity, genetic and species diversity, reference systems, and other important ecological functions would enhance the assessment, especially as our national forests face a rapidly changing climate. These questions will help identify in the assessment whether it makes sense in the revision/development phase to consider establishing designated areas that will facilitate climate change adaptation, such as migratory corridors or climate refugia.

Recommendation: In addition to the questions identified in section 14(2), include the following questions:

- Are there areas that would fit into a larger network of wilderness or other land designations that would create protected corridors and increase the opportunity for connectivity?
- Are there areas that would fit into a larger network of wilderness or other land designations that would ensure adequate representation of habitats, ecosystems, and land types?
- Are there land types and ecosystems that would enhance the preservation and maintenance of genetic diversity (including in relation to at-risk species)?
- Are there land types that could serve as reference areas for the study of natural ecological processes – especially with respect to disturbance processes like fire and climate change?

- Do existing designations provide adequate distribution and representation with respect to features such as latitude, altitude, and soil type—especially important in light of the risk of vegetation type changing with a changing climate?

D. The directives should clarify that a designated area can be a unique area, or overlay a management area, geographic area, designated area, or a combination thereof.

Explanation: The draft directives convey that a designated area can be constructed to overlay a management area:

> "Other designations may have plan specific components applied without the concept of a unique management area by including the designated area within a management area or several management areas where the plan components are compatible with the designation, or including plan component direction within forest-wide direction that apply to the special character of the designated area.
>
> When a designated area is placed on multiple plan areas, the responsible official should coordinate with the other responsible officials in developing plan components that are compatible across the multiple plan areas. See FSM 2370 for further guidance on special recreation designated areas and authorities for botanical area, geological area, and others." (Section 22.22, Chapter 20, page 34).

However, the draft directives do not suggest that one designated area could overlay another, or for that matter a geographic area. This situation could likely arise where a parcel of land recommended for wilderness would also benefit from a second designation emphasizing specific values such as outstanding scenic character, botanical qualities, or remarkable geologic features.

Recommendation: Modify the text in 22.22 to clarify that designated areas can overlay management areas, geographic areas, other designated areas or a combination thereof:

> "Other designations may have plan specific components applied without the concept of a unique management area by including the designated area within a management area*, geographic area, designated area, or a combination thereof*, where the plan components are compatible with the designation, or including plan component direction within forest-wide direction that apply to the special character of the designated area."

E. Maintaining the wilderness characteristics of recommended areas must include disallowing motorized and mechanized vehicular use, and new road and motorized trail construction.

Explanation: In recent years, the Forest Service has been operating under a policy that requires the Forest Service to manage recommended wilderness so as not to reduce wilderness potential or compromise wilderness values. This policy has at times resulted in the degradation of recommended wilderness areas and their wilderness values in areas where motorized and mechanized travel is allowed. The Idaho Conservation League in 2011 published a report demonstrating this.[2] They compared the condition of recommended wilderness areas in northern Idaho, managed by a Region 1

[2] Idaho Conservation League, 2011. *In Need of Protection: How Off-Road Vehicles and Snowmobiles Are Threatening the Forest Service's Recommended Wilderness Areas.*

policy that does not generally allow incompatible uses, and southern Idaho, managed by a Region 4 that follows the more permissive national policy. They concluded that "the national policy is leading to ecological damage, user conflicts, decreased opportunities for solitude and degradation of other wilderness values."[3] The Clearwater National Forest in Idaho also found this to be true in a recent analysis. The Clearwater National Forest reevaluated the wilderness character of areas recommended for wilderness in its 1978 Land and Resources Management Plan. The Forest Service found that wilderness character of half of the areas was degraded in the intervening years, attributing it to the continued and expanded use of motorized and mechanized vehicles.[4]

In regard to the wilderness characteristic of solitude, logic dictates that as motorized and mechanized vehicle use increases, opportunities for solitude decline. Stronger vehicles are able to push farther and farther into undeveloped areas. Further, the number of vehicles continues to expand, making it increasingly difficult to escape the sights and sounds of motors within recommended wilderness areas. The Clearwater National Forest recently observed in its draft travel management plan: "As motorized technology continues to be developed levels of access into remote, back-country locations will rise and with this increased use will come additional noise and disturbance which adversely affects attributes of wilderness character."[5]

Regarding the wilderness characteristic of outstanding opportunities for unconfined and primitive recreation, the quality of hiking, hunting, fishing, camping, horseback riding, and cross-country skiing experiences is often diminished by the presence of motorized and mechanized vehicles.[6] Vehicles can scare and displace wildlife, leading to degraded hunting opportunities. Roads, motorized trails, and the accompanying motorized use of these routes have impacts on water quality, thereby affecting fishing opportunities. Trail conflicts between motorized/mechanized vehicles and hikers, horseback riders, and skiers degrade the primitive recreation experience. Engine noise stemming from motorized vehicles can propagate widely disrupting and even spoiling the primitive, backcountry experience sought by many non-motorized users.[7]

In regard to maintaining wilderness potential, allowing motorized and mechanized travel in recommended wilderness areas often develops a constituency for the continuation of that use. The Clearwater National Forest noted this unfortunate reality in its draft travel management plan: "The increase in vehicle capability, numbers, and local use, puts areas of recommended wilderness at far greater risk of degradation and loss of wilderness character than they were when the Forest Plan was written. In addition, other areas recommended for wilderness *have not received serious consideration*

[3] Ibid. Page 1.

[4] Id. p. 3-81-82.

[5] Clearwater National Forest, Travel Planning Draft Environmental Impact Statement, p. 3-83.

[6] For example, see Rivers and Menlove, 2006. Winter Recreation on Western National Forest Lands: *A Comprehensive Analysis of Motorized and Non-Motorized Opportunity and Access.* Winter WIldlands Alliance.

[7] See: American Hiking Society, 2005. *Trails at Risk: The Impacts of Unmanaged Motorized Recreation and Off-Road Vehicle Use on Hiking Trails and the Hiking Experience;* and Kevin Proescholdt, 2006. *Off-Road Vehicle Impacts on Hunting and Fishing.* Izaak Walton League of America.

for designation once motorized use has become established"[8] (emphasis added). That is, in addition to the potential loss of wilderness character by allowing motorized activity in recommended wilderness areas, it is also the case that Congress may be less likely to designate an area as wilderness that contains long-established motorized or mechanized vehicle use, regardless of whether the agency has recommended the area for wilderness designation or not.

A recent example of this was the proposed additions to the Hoover Wilderness in California. Despite a long-standing recommendation for wilderness designation, the Forest Service continued to allow winter motorized recreation throughout much of the area. As a result, Congress designated only a portion of the area for wilderness, while designating another portion a winter recreation area, which is primarily for motorized vehicle use.[9] The agency's management of its recommended wilderness directly undermined its own recommendations and reduced the potential for wilderness designation.

The 2012 planning rule's approach to the management of recommended wilderness areas is expressed in the following:

> "The plan must include plan components, including standards or guidelines, to provide for: ….[the] management of areas recommended for wilderness designation to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation." 36 CFR 219.10(b)(1)(iv)

Because this language is similar in concept to the previous policy, it is logical that the degradation of wilderness characteristics that resulted from the previous policy will also occur under the 2012 planning rule language unless the final directives disallow motorized/mechanized travel in areas recommended for wilderness.

Also, although it may seem obvious, the directives should state that no new roads or motorized trails should be designated in recommended wilderness areas.

Recommendation: In section 23.22j (page 97), amend the following paragraph by adding the italicized text:

> "Standards or guidelines are appropriate for placing limits or conditions on projects or activities that may adversely affect the wilderness character of existing wilderness, wilderness study, or recommended wilderness areas. Certain uses may be identified as suitable or not suitable for these areas. Existing wilderness, recommended wilderness areas, or wilderness study areas are not suitable for timber production *or for motorized and mechanized use by the general public*."

Alternatively, the same paragraph could be amended slightly differently:

[8] Clearwater NF Travel Management Draft Environmental Impact Statement, pages 3-83 and 84.

[9] See Pub. L. 111-11, section 1806.

"Standards or guidelines are appropriate for placing limits or conditions on projects or activities that may adversely affect the wilderness character of existing wilderness, wilderness study, or recommended wilderness areas. *Plan components must disallow motorized and mechanized activities unless the Forest Service can demonstrate with certainty that 1) allowing the uses will not degrade the ecological and social characteristics that provide the basis for their suitability for wilderness designation, and 2) it has the capacity to monitor adequately wilderness characteristics to detect changes in a timely way. Plan components must also disallow the designation of new roads or motorized trails in recommended wilderness areas.*"

Also, the second paragraph in section 74 that says: "The plan must include plan components to provide for the management of areas recommended for wilderness designation to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation (36 CFR 219.10 (b) (iv) and FSH 1909.12, chapter 20)" should be made consistent with the changes recommended above.

F. The plan components must reflect that areas recommended for wilderness designation are withdrawn from mineral leasing.

Explanation: The Federal Onshore Oil and Gas Leasing Reform Act of 1987 disallows oil and gas or geothermal leasing in areas recommended for wilderness or Congressionally-established Wilderness Study Areas. The directives should therefore require that the plan components enforce this prohibition.[10]

Recommendation: In 23.22j (page 97), amend the following paragraph by adding the italicized text:

"Standards or guidelines are appropriate for placing limits or conditions on projects or activities that may adversely affect the wilderness character of existing wilderness, wilderness study, or recommended wilderness areas. Certain uses may be identified as suitable or not suitable for these areas. Existing wilderness, recommended wilderness areas, or wilderness study areas are not suitable for timber production *or for oil and gas or geothermal leasing*."

G. The monitoring program should address 1) the condition of wilderness characteristics in recommended wilderness areas and Wilderness Study Areas, and 2) the condition of the values for which a designated area was established.

[10] Federal Onshore Oil and Gas Leasing Reform Act of 1987 states that:

"The Secretary shall not issue any lease under this chapter or under the Geothermal Steam Act of 1970 [30 U.S.C. 1001 et seq.] on any of the following Federal lands:

(1) *Lands recommended for wilderness allocation by the surface managing agency*.

(2) Lands within Bureau of Land Management wilderness study areas.

(3) Lands designated by Congress as wilderness study areas, except where oil and gas leasing is specifically allowed to continue by the statute designating the study area.

(4) Lands within areas allocated for wilderness or further planning in Executive Communication 1504, Ninety-Sixth Congress (House Document numbered 96–119), unless such lands are allocated to uses other than wilderness by a land and resource management plan or have been released to uses other than wilderness by an act of Congress." 30 U.S.C. §226–3 (emphasis added).

Explanation: As discussed above, the planning rule requires that plan components, including standards and guidelines, provide for "…management of areas recommended for wilderness designation to protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation" (36 CFR 219.10(b)(1)(iv)). The only way to know if management of these areas is protecting and maintaining wilderness characteristics is to monitor them. The same concept applies to other designated areas, which are established to protect a specific set of values.

Recommendation: Ensure that the monitoring program includes questions to assess whether 1) the ecological and social characteristics that provide the basis for an area's suitability for wilderness designation are protected and maintained; and 2) the values for which other designated areas were established are protected and maintained.

H. The following sentences and paragraphs are written in a confusing way and should be clarified.

- Sec. 22.22, Page 31, second sentence: "Identification of designated areas is limited to areas or features actually designated by the appropriate person or entity."
- Sec. 22.22, Page 34, 2nd paragraph. Perhaps, use some examples to clarify the intent of the paragraph.
- Sec. 14 (page 63) 2nd paragraph, sentence 1: "Designated areas direct specific kinds of management on areas within the plan area."

Roads and Transportation Infrastructure

I. Introduction

A stated goal of the 2012 planning rule is to shift forest management more toward a restoration focus. A key element of restoring watersheds and ecosystems is reducing the impacts of the transportation system, which affects a number of national forest resources including wildlife, water flows and quality, and aquatic systems. Restoration can occur through achieving a sustainable transportation system that is appropriately sized and located to meet the forest management goals and objectives as articulated in the forest plan. Addressing the excessive transportation system is one of the most meaningful restoration actions the agency could take over the lifespan of the forest plan to improve water quality, mitigate climate-induced stresses, and provide for sustainable and quality recreation.

Much has been written on the condition and impacts of the Forest Service transportation system, which is a major cause of impairment to aquatic systems and terrestrial wildlife. (Wildlands CPR 2009; *see also* Roads Rule EA). Roads have well-documented, significant, long-term, and widespread ecological impacts that extend across multiple scales and often far beyond the area of the road "footprint," with negative effects on biological integrity in both terrestrial and aquatic ecosystems (reviewed in Forman & Alexander 1998; Jones and coauthors 2000; Trombulak & Frissell 2000; Gucinski and coauthors 2001; Great Lakes Envtl. Ctr. 2008). Route density is a useful, broad index of the ecological effects of routes on the landscape. Route density affects many factors (Holderegger, R. & Di Giulio M., 2010), but especially faunal movement, population fragmentation, human access, hydrology and fire patterns (reviewed in Forman & Hersperger 1996). *See also* Great Lakes Envtl. Ctr. 2008, p. 27, 53-55, and The Wilderness Society's Road Density Summary (2012) that outlines the scientific literature supporting the use of route density as it relates to assessing hydrologic and wildlife condition.

The language in section 23.22(o) of the draft directives provides a good description of some of the key goals necessary for future transportation management in national forests. However, it fails to integrate the planning and management of the transportation system, including on-going efforts to work towards a sustainable transportation system, into the forest planning framework. We submit the following comments on the draft directives in an effort to suggest ways that the Forest Service could better address its stated objective of achieving an ecologically and fiscally sustainable transportation system in forest planning.

II. Issues and Recommendations

A. Clarify the role of forest plans in achieving a sustainable transportation system.

Explanation: On March 29, 2012, the Chief's office, via a directive memorandum to the field, directed all forest supervisors to, by FY 2015, fully comply with 36 CFR 212 subpart A as well as complete (and have approved) Travel Analysis Reports that identify the minimum road system and unneeded roads that should be decommissioned or converted to other uses.[11] The memorandum explains the overall road management objective is: "[T]o maintain an appropriately sized and environmentally sustainable road system that is responsive to ecological, economic, and social concerns. The national forest road system of the future must continue to provide needed access for recreation and resource management, as well as support watershed restoration and resource protection to sustain healthy ecosystems." As originally outlined in the 2000 EA accompanying the Roads Rule, this direction should be reflected in forest plans:

> Specifically, within two years of the effective date of the final road management strategy, each Forest System unit must complete a forest-scale road analysis. The findings of a forest-scale analysis may be applied either to the current forest plan or *at the time of a forest plan revision or amendment*. Further, any future project, ecosystem assessment, or forest plan amendment or revision must be informed by a roads analysis process.

Roads Rule EA at 4 (emphasis added).

The draft directives do not clearly convey the specifics or the sentiment of this direction. Specifically, in chapter 10, sections 13.4 and 13.6 of the draft directives include travel management plans and travel analysis reports as sources of information, but fail to include watershed condition framework assessments or information provided by the public on the infrastructure's environmental impacts. The failure to address these key information sources provides for an incomplete picture of the real impacts and benefits of the infrastructure. In chapter 20, the draft directives nominally address travel analysis and mention the minimum road system, but fail to draw a firm connection between the Forest Service's restoration agenda and reaching a minimum road system through forest plan implementation. Lastly, in Chapter 30, the draft directives mention roads only once, as a possible contributor of sediment to stream segments. Monitoring questions with regards to the impacts of roads on watershed and ecosystem integrity should be fully addressed and not marginalized.

Recommendation: During the assessment phase, the directives should require that each forest use the travel analysis reports and other transportation studies and analyses, watershed assessments, and

[11] Travel Management, Implementation of 36 CFR, Part 202, Subpart A (36 CFR 212.5(b)), 2300/2500/7700 (March 29, 2012).

information provided by the general public to determine if the existing transportation system is fiscally and environmentally sustainable and appropriately sized. If it is not, the responsible official in the assessment phase should explain the actions necessary to achieve a sustainable transportation system. In addition, the final directives should require consideration of whether relevant Forest Service information examined in the assessment phase needs to be updated in order that they can effectively inform the development of the forest plan. Assessments on issues of fundamental relevance to plan development that are found to be out-of-date must be updated in the assessment phase. In other words, no assessment or the documents on which it was based can stay fresh or accurate forever. For issues that are fundamentally relevant, the Forest Service cannot rely on out-of-date information and must, therefore, undertake an effort to update the information accordingly.

During the revision/amendment phase, the following key elements should be incorporated in the final directives:

- Require the incorporation of a strategy to implement the minimum road system and the recommendations made in the Travel Analysis Report for decommissioning unneeded roads and other mitigative actions. This should include objectives that specify what percentage of roads on the list of unneeded roads the agency should endeavor to decommission each year.
- Include language that requires the forest to reduce the road network if 1) the assessment process concludes that roads are having an adverse effect on ecological conditions; or 2) the assessment process concludes that the agency cannot maintain the existing infrastructure due to fiscal constraints.
- Require that plans establish route density standards for all management areas. Route densities must be based on best available science. If not possible for all areas, route density standards should, at a minimum, be established for those areas with high ecological value such as important wildlife habitat, properly functioning watersheds (per the WCF assessment), riparian conservation areas, and special interest areas. The term "route" incorporates both roads and motorized trails since trails are linear features that for the most part behave ecologically like roads, and many motorized trails accommodate car-width vehicles. In many cases, motorized trails cause as much or more damage than roads because they were not necessarily built to any standard, given that many designated motorized trails came into being as unauthorized, user-created trails. *See, e.g.,* Great Lakes Envtl. Ctr. 2008, p. 20-22. Route densities should also be established in areas where roads are currently impacting resources (e.g., in at-risk and impaired watersheds impacted by roads per the WCF assessment), and in areas slated for restoration (e.g., priority watersheds) or already restored. In regard to this last point, it makes no sense to us that an area would undergo restoration work and then be susceptible in the future to excessive road densities.
- Require that new road construction or reconstruction is not permitted unless necessary to meet objectives established in the forest plan and consistent with the minimum necessary road system.
- Require that road and motorized trail construction or reconstruction in riparian conservation areas is not permitted unless necessary as a restorative measure and consistent with the minimum necessary road system.

Lastly, the monitoring plan should require the inclusion of questions and associated indicators to measure changes in both aquatic and terrestrial health related to the transportation system. This could include tracking how many miles of unneeded roads have been decommissioned or converted to another use (e.g., hiker/equestrian trail); how effective are management actions in moving the

national forest/grassland toward achieving its identified minimum necessary road system; and which motorized routes are causing considerable adverse effects to environmental or cultural resources.

B. Reclamation of unneeded routes in areas with important conservation values should be a priority.

Explanation: In national forests, a number of areas are identified legislatively or administratively (including in the forest planning process) as having important conservation values. Examples of these include Inventoried Roadless Areas, Wild and Scenic Rivers, and Recommended Wilderness Areas. Unneeded routes often exist within the boundaries of these areas. Closing and reclaiming these routes will enhance the natural function and form of the areas, and further the values for which the areas were identified.

Recommendation: Set route density ceilings within important conservation areas. Set route reclamation targets for important conservation areas.

C. The draft directives do not ensure that transportation infrastructure meets the requirements of 36 CFR 219.8 to be socially, economically and ecologically sustainable.

Explanation: Section 23.22(o) is framed as "should" or "may" when many, if not all, of these items, in additions to others discussed in these comments, will need to occur in order for the forests to reach a socially, economically, and ecologically sustainable transportation system.

Recommendation: This section should clarify and state that current FS direction is to create an appropriately sized and sustainable transportation system, and that plan components should ensure compliance with this legal requirement. In ensuring an ecologically sustainable transportation system, the FS must consider water quality and aquatic/riparian impacts, soil, air quality (e.g., PM10), ecosystem and landscape fragmentation, and route-induced disturbance to ecosystems and species. In ensuring a fiscally sustainable transportation system, the FS must consider the short and long term costs of the transportation system, including environmental and opportunity costs.

Change the "should" to a "must" in the second sentence: "The plan *should* provide for a realistic desired infrastructure that is sustainable and can be managed in accord with other plan components within the fiscal capability of the planning unit and its partners." (Section 23.22o, page 103).

D. Language from 36 C.F.R. § 212.5 should be used to describe the transportation system goals.

Explanation: The language used to describe the target transportation system should reflect existing regulations. The draft directives in chapter 20, section 23.22o, state: "The plan should identify the major arterial road system that provides primary access to, and within, the plan area." This is just another way to state a goal that the Forest Service has had since 2001 – a sustainable transportation system – and which is codified in regulation 36 C.F.R. § 212.5. It is unnecessary to use different language describing this goal.

Recommendation: This sentence should be changed to read: "The plan should identify the road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands."

Recreation

I. Introduction

In reviewing the directives governing sustainable recreation at section 23.22b, we have tried to read the draft from the perspective of field staff trying to implement them. The draft directive on sustainable recreation talks about some important concepts that we believe should be included, but does so in a way that field staff may not be able to clearly discern and apply. We urge the agency to be more direct about articulating these concepts and how they should be applied so that field staff will have a clear idea of how to implement the directives. We discuss this further below.

We believe the Forest Service has an obligation to ensure quality recreation outcomes, not just opportunities, in order to maximize public benefit. The draft directive on recreation allows for this to occur, but does not explicitly state that it should, nor does it provide enough guidance on best approaches. In order to achieve quality recreation outcomes, section 23.22 of the directives must ensure that forest plans do three key things:

- Ensure the recreation plan components are directly responsive to the recreation niche identified during the assessment phase.
- Ensure that recreation does not detract from the outdoor and natural characteristics that attract visitors to the National Forests and that make recreation in National Forests a different experience from that in other locales.
- Ensure land allocation tools are proactively used to achieve quality recreation outcomes.

Draft section 23.22b does not succeed in doing these three things. As a threshold matter, it does not do enough to explain the relationship between ecological, economic and social sustainability, nor does it provide any guidance on compliance with the Executive Orders relating to ORV management. It treats mandatory plan components as discretionary, creates uncertainty regarding existing travel management plans, and understates the responsible official's obligations regarding suitability and non-suitability determinations. We set forth our concerns in detail below.

Because the Forest Service does not have existing guidance on how to approach sustainable recreation planning, the 2012 planning rule and accompanying directives venture into relatively unchartered territory. In revising the draft directives on recreation, we recommend that the Forest Service consult the Recreation Planning Principles[12] developed by the Society of Outdoor Recreation Professionals (SORP) as a basis for conducting recreation planning as part of the land management plan revision process. The principles reflect the combined thinking of outdoor recreation professionals throughout the country.

II. Issues and Recommendations

A. Ecological Sustainability of Recreation is Influenced by Other Laws and Regulations

Explanation: In the planning rule, and these directives, recreation sustainability is required to be achieved for ecological, economical, and social criteria. 36 CFR 219.19. While we agree that the

[12] http://www.recpro.org/planning-principles

planning rule itself does not place a primacy of one criterion over another, other laws and regulations must be considered when evaluating ecological sustainability, and that should be clearly stated.

For example, with regards to motorized recreation, Executive Order 11644 as amended by 11989 and the Travel Management Rule require that any authorization of ORV use meet the minimization criteria. This achievement of minimization should be a factor considered when determining whether motorized recreation on a forest is sustainable for present and future generations, and when deciding what standards and guidelines are necessary to address recreation management.

Furthermore, for recreation more generally speaking, the achievement of social sustainability may not necessarily support ecological or economical sustainability. However, these three sustainability criteria are closely intertwined, and it should be clarified that one cannot be reached to the detriment of the others. When determining sustainability, forest planners should first determine what is ecologically feasible and in compliance with relevant other laws. Next, planners should determine the forest's economic capacity to manage the recreation infrastructure in order to understand current and future capacity to maintain potential settings and opportunities. Finally, social desires should be considered within the context of what is ecologically and economically sustainable.

While the proposed directives contain elements of this approach, they fail to provide mechanisms that ensure recreational uses are both ecologically and economically sustainable. Inadequate agency budgets (economic sustainability) and resource damage caused by inappropriately located or inadequately managed recreation (ecological sustainability) will preclude the ability of many forests to meet social demand (an element of social sustainability). The directives should acknowledge this reality. The balance and analysis needed to ensure that all three criteria of sustainable recreation are met, and also meet applicable laws and regulations such as the ORV Executive Orders, should be more fully explained in the final directives.

Recommendation: Section 23.22 makes no mention of the Executive Orders, the Travel Management Rule, or the minimization requirements. This connection should be made so that field staff will understand that plans must be developed in accordance with the requirements in the Executive Orders and the Travel Rule.

Section 23.22 should also clarify the relationship between ecological sustainability and economic and social sustainability and that the assessment of social demand may not be attainable without compromising economic or ecological sustainability.

B. The Directives Treat as Discretionary Many Mandatory Plan Components

Explanation: There are numerous instances in which the draft directives say that plans "should" or "may" contain plan components that really must be included if the plan is to achieve the goals set forth in the planning rule. The draft directive on sustainable recreation contains an example of this that seems likely to confuse field staff.

The planning rule says that "[t]he plan must include plan components, including standards or guidelines, to provide for . . . sustainable recreation, including recreation settings, opportunities and access; and scenic character." 36 CFR 219.10(b)(1) (emphasis added). In general terms, the draft

directive echoes this requirement by saying that “plan components must provide for sustainable recreational settings, opportunities and access.”

However, section 23.22 later says that "plans may have standards or guidelines to ensure consistency of projects or activities with desired ROS classes or other desired conditions for recreation.” This suggests these components are optional. Describing standards and guidelines designed to ensure the consistency of activities with desired ROS classes or other recreation conditions as optional is particularly troublesome, because these types of standards and guidelines will be among the primary tools that planners will use to achieve the goal of providing for sustainable recreation. In this respect, the directive describes as optional those plan components that are most necessary to fulfill the mandatory requirements of the planning rule. This seems likely to lead to significant confusion on the part of field staff.

Recommendation: Revise the draft directive to make the enumerated plan components mandatory.

C. The Directives Should More Closely Connect Recreational Niche with Plan Components

Explanation: Section 23.22 uses the phrase "the distinctive role of the plan area as a provider of recreation." We think of this as the recreational niche of the plan area. Section 23.22 would be easier to follow if it used the term niche to refer to the plan area's distinctive role. The Recreation Planning Principles of the Society of Outdoor Recreation Professionals take this step by describing recreational niche as "the special values and resources of a setting . . . within the larger spectrum of recreation opportunities."

In addition, we would like to see section 23.22 make a closer connection between the plan area's niche and the plan components for the plan area. The section does say that assessment information "provides a starting point" for determining plan components. It also says that the distinctive role of the plan area "should inform and create an overall context for" setting recreation opportunities in the plan. However, these references establish only a loose connection between recreation niche and plan components. We believe a more affirmative statement that plan components should be consistent with the niche would provide better guidance to the responsible official.

Recommendation: The directives should use the term "niche" and should require that recreation plan components be consistent with the recreation niche identified in the assessment phase.

D. The Directives Should Require Plans to Create Enforceable ROS Classifications and Authorize ROS-based Overlay Zones

Explanation: The recreation framework established by the new planning rule requires forests to create sustainable recreation settings and high quality recreation experiences, while maintaining ecological integrity. Recreation settings are the social, managerial and physical attributes of a place that, when combined, provide a distinct set of recreation opportunities. 36 CFR § 219.19. A “recreation opportunity” is an opportunity to participate in a specific recreation activity in a particular setting to enjoy desired recreation experiences and other benefits that accrue. *Id.* Thus, to provide sustainable recreation opportunities, the rule requires forests to define areas with the social, managerial, and

physical attributes that visitors need in order to participate in a specific recreation activity and enjoy their desired recreation experience.

The recreation setting is obviously a critical component of the planning rule. The planning rule establishes that the Recreation Opportunity Spectrum (ROS) is the method that the Forest Service uses to define recreational settings. 36 CFR 219.19. The draft directives say that plan components should address recreation settings in the following ways:

- Settings may form the basis for applying certain plan components to management areas or geographic areas, or to a specific set of locations or areas not defined as a management area, such as dispersed recreational sites. Application of settings to areas is usually through the Recreation Opportunity Spectrum.
- Settings should be described in desired conditions, including the mix of desired ROS classes, specific kinds of recreation opportunities and the desired infrastructure. Unique desired conditions that identify the types of recreation opportunities or settings may be applied to designated, management, or geographic areas.
- Settings may be affected by objectives that describe the plan's intention to modify conditions from an inventoried ROS class toward a desired ROS class, or an intention to alter the condition of recreation areas, dispersed sites, and infrastructure including trails.
- Settings are determined by suitability determinations, usually associated with a desired ROS class or management area.
- Settings may be determined by standards or guidelines that ensure consistency with desired ROS classes or other desired conditions for recreation.

Section 23.22b. What is unclear to us from the language of the section 23.22b is whether plan components will be used to create areas with specified ROS classifications that are written in a way that makes them enforceable. Section 23.22b says plans may contain desired ROS classes and objectives to modify conditions from inventoried ROS classes towards a desired ROS class. They may also contain standards and guidelines to ensure consistency with desired ROS classes or other desired conditions.

We think the directives need to go further. In order to create recreation settings that will be sustainable, plans must have standards and guidelines that make the desired ROS classifications enforceable. Section 219.10(b)(1) says that “plans must include plan components, including standards and guidelines, to provide for sustainable recreation, including recreation settings. . . .” Thus, the rule requires plans to set forth standards guidelines that will establish and maintain desired recreation settings so that users will have their desired recreation outcomes. Using ROS to simply describe current conditions, without taking the additional step of using it to prescribe future conditions, is inconsistent with this principle.

The Recreation Planning Principles of the Society of Outdoor Recreation Professionals state that "[t]he output of a recreation resource planning process is a management prescription for an area that includes such information as goals, objectives, desired future conditions, desired recreation experiences, facilities, management strategies and actions, quality standards, visitor capacities, a monitoring program, and budgetary needs (emphasis added)." We believe that management

prescriptions in the form of enforceable ROS classifications are the way to achieve the goal of establishing sustainable recreation settings.

We would also like to see some clarification of the interrelationship between ROS classifications, management areas, and geographic areas. In the past, forest plans generally have not overlaid prescriptive recreation-based zones on top of management areas or geographic areas. We think the directives should explicitly authorize this approach. Section 23.22b says that "[p]lans can identify a specific set of locations or areas, such as dispersed recreational sites, for some specific plan components without creating management areas or geographic areas." We would like this language to be clarified to say that the responsible official can create ROS-based overlay zones on top of management areas and geographic areas, and include standards and guidelines that make these zones enforceable. If the responsible official opts not to use ROS-based overlay zones and instead relies on management and geographic areas to define and provide sustainable settings, then the prescriptions associated with the management and geographic areas must include standards and guidelines that will provide for sustainable settings, opportunities, access, and scenic character. At a minimum, these classifications must distinguish between motorized and non-motorized recreation areas, and front-country and back-country settings.

Recommendation: Revise section 23.22b to require plans to include standards and guidelines that create enforceable ROS classifications and explicitly authorize the creation of ROS-based overlay zones.

E. Travel Decisions Require Site-Specific NEPA Analysis

Explanation: The proposed directives should clarify that all off-road vehicle use must be supported by site-specific NEPA analysis, either through recent travel plans published pursuant to 36 CFR 212, or through NEPA analysis completed during the forest planning process. If site-specific NEPA analysis is delayed until a later date, then motorized use should not be authorized until that analysis is completed. To state it in a slightly different manner, the revised plan should prohibit motorized use in areas where there is no site-specific analysis demonstrating compliance with the minimization requirements.

Recommendation: Revise section 23.22b to require plan components that ensure compliance with the minimization requirements in the Executive Orders and the Travel Management Rule. Further revise section 23.22b to explicitly state that off road vehicle designations made during forest planning must be supported by site-specific analysis that demonstrates compliance with the minimization requirements.

Chapter 22.5(1)(a) should clarify that if separate analysis and decisions are needed to authorize site-specific decisions, and they are not issued simultaneously with the forest plan decision, implementation of those actions will not occur until the final decision is signed.

F. The Role of Forest Plans in Over Snow Vehicle Management Should Be Clarified

Explanation: As written, the operative provisions of the 2005 Travel Management Rule do not apply to over-snow vehicles (OSVs). A recent court decision concluded that this policy violates the Executive

Order under which the TMR was implemented. In *Winter Wildlands Alliance v. US Forest Service*, 2013 WL 1319598 (D. Idaho 2013), the court concluded that the TMR violates Executive Order 11644 because that order "requires the Forest Service to ensure that all forest lands are designated for all off-road vehicles. The 2005 Rule fails to do this with respect to OSVs, and therefore fails to comply with Executive Order 11644." Opinion at 20. "The Forest Service has the discretion to decide where and when OSV use can occur upon the public lands, but the Forest Service is *required* by Executive Order 11644 to make that decision." *Id.* (emphasis in original). The court went on to say that "designations *must* be made and they *must* be based on" the minimization criteria in Section 3(a) of the Executive Order." The court ordered the Forest Service to issue a new rule consistent with Executive Order 11644 within 180 days of the decision (3/29/2013).

Whatever the contours of the regulations to be promulgated in response to the court's opinion, it is clear that the agency must start making distinctions between motorized and non-motorized travel in winter. We urge the agency to incorporate these principles into the sustainable recreation directives.

Recommendation: The directives should require forest plans to comply with the ORV Executive Order minimization criteria when making decisions about where over snow vehicle use will occur.

G. Set a deadline for updating Travel Management Plans after completion of forest planning.

Explanation: The draft directives, section 23.22(o), reiterate the requirement from the Forest Planning Rule that Travel Management Plans (TMPs) and their associated Motor Vehicle Use Maps (MVUMs) should be consistent with the forest plan. However, no deadline is set for updating TMPs and MVUMs after a new plan is adopted. This raises the serious risk that outdated TMPs and MVUMs will continue to conflict with new forest plans for many years after those plans are adopted, potentially undermining the management goals set by those plans.

Recommendation: We recommend that the final directives establish a two-year deadline after adoption of a forest plan by which TMPs and MVUMs be made consistent with the new forest or grassland plan.

H. Revise Section 13.4 to Better Provide for Sustainability of Ecological Integrity

Explanation: Section 13.4 explains the purpose of the sustainable recreation assessment, but fails to explain how forest planners will actually determine sustainability. Proposed section 13.4 states the following:

> The focus of the assessment for recreation is to identify and evaluate information about recreation settings and the uses, trends and sustainability of recreation opportunities in the plan area, recreational preferences of the public, recreational access, and scenic character.

Towards this end, the draft directives state that the responsible official should identify and evaluate a list of ten sources of information. However, this list fails to include sources specific to the sustainability of ecological integrity. Rather they direct planners to evaluate some vague reference to compatibility: "The compatibility or incompatibility of different recreation activities within the plan area, including any recreation user conflicts." Sec. 13.4 (first list, item 5).

This language raises two main concerns. First, compatibility should be directly linked to ecological conditions so that, for example, specific recreational activities are not proposed in highly sensitive areas. This section lacks any specific direction to determine compatibility within the ecological context. This portion of the assessment should also contain an evaluation of how well current recreation complies with applicable laws, regulations and executive orders, with an emphasis on E.O 11644 as amended by 11989, since this order is specific to off road vehicle use.

Second, the specific mention of recreation user conflicts is problematic, since it focuses only on interactions between people or groups of people and not on management direction. To clarify, the assessment should identify where there are current conflicts of recreational uses such as when a motorized trail designation conflicts with a non-motorized setting, or when a motorized designation conflicts with the management direction for a National Scenic Trail. These examples are different than instances where people have conflicts with a specific recreational activity.

Section 13.4 also states, "[t]he responsible official should evaluate how recreation contributes to social, economic, and ecological sustainability." In fact, a great deal of the sustainable recreation section seems to emphasize the many benefits that recreation provides, which we do not contest. However, recreation often also results in serious resource impacts, and forests should properly manage its recreational infrastructure and uses in a manner that minimizes adverse environmental impact, which requires an assessment of current recreational impacts and compliance with forest orders. Forest planners should evaluate information about violations of forest orders, such as numbers of violations reported and citations issued, number of illegal spur routes created, etc.

Recommendation: Revise item number 5 of the first list in section 13.4 to read as follows (new language in *italics*):

5. The *ecological* compatibility or incompatibility of different recreation activities within the plan area, including *compliance with applicable laws, regulations and executive orders such as E.O. 11644 as amended by E.O. 11989; specifically consider* any recreation user conflicts *or conflicts among current recreation management direction*.

Recommendation: Revise the sentence on evaluating how recreation contributes to sustainability to read as follows (new language in *italics*):

> The responsible official should evaluate how recreation contributes to *and detracts from* social, economic, and ecological sustainability.

Recommendation: Add the law enforcement database to the list of internal sources of information to include in the assessment.

I. The Directives Should Require Suitability Determinations for Areas that are Suitable and Non-suitable for Motorized Use.

Explanation: In recent years, the agency has sometimes looked at current use patterns, attached ROS classifications to areas of the forest based on current use, and then allowed these ROS classifications

to dictate suitability. Thus, if use patterns indicated that an area was currently semi-primitive motorized, the agency automatically deemed the area suitable for motorized use. Suitability determinations made in this manner are deficient because they are not based on analysis of whether conditions on the ground can withstand continuations in current use. Instead, they are based solely on an ROS classification. They are also redundant, in that they accomplish nothing not already accomplished by the ROS classification itself.

Unfortunately, by suggesting that suitability determinations are entirely discretionary, the draft directive will allow this practice to continue. This is a significant inconsistency with the language of the planning rule itself, which requires both suitability and non-suitability determinations. The rule states that "specific lands within a plan area will be identified as suitable" for certain uses. 36 CFR 219.7(e)(1)(v). Regarding non-suitability, the rule states "[t]he plan will also identify lands within the plan area as not suitable for uses that are not compatible with desired conditions for those lands." *Id.*

However, the draft directive states that plans "may" identify suitable uses. Section 23.22. Field staff that develops their plans based on the directives rather than the rule itself may make too few suitability determinations, or none at all. Likewise, they may overlook their obligation to make non-suitability determinations, when in fact these determinations will be vital in establishing recreation zones that are ecologically, economically, and socially sustainable.

In order to be consistent with the planning rule, we believe the directive should more affirmatively state an obligation to make suitability and non-suitability determinations, particularly for motorized use. Further, these determinations must be based on an analysis of ecological, economic, and social conditions on the ground, rather than on an ROS category that is derived from current use. The directive must clearly state this obligation to field staff in order to ensure inclusion in planning documents.

We also believe the directives should recognize that an analysis of the suitability and non-suitability of other types of recreation may be appropriate in order to support management area designations and minimize conflicts between recreational uses. As with motorized activities, these suitability determinations should be based on ecological, economic, and social factors.

Recommendation: The directive should require plans to utilize suitability determinations to identify areas that are suitable and non-suitable for motorized use. These determinations should be made based on an analysis of ecological, economic, and social conditions, and not merely upon agency-developed ROS classifications.

J. Section 23.22 Inaccurately Describes 36 CFR 219.10(a) and (b)

Explanation: Section 23.22 is the introductory section for the Directives implementing the multiple use requirements of 36 CFR 219.10. The last paragraph of this section contains a description of section 219(b) that is inconsistent with the language of the rule. Section 23.22 states:

> [p]aragraphs (a) and (b) of rule section 36 CFR 219.10 use different wording to describe their requirements. The introduction to 36 CFR 219.10(a) requires plan components for multiple uses and ecosystem services. 36 CFR 219.10(a)(1-10) identify specific elements that the responsible

official shall consider in developing the plan components. 36 CFR 219.10(b)(1) requires plan components for each identified element if applicable to the plan area.

Draft directive section 23.22 (emphasis added). In effect, this language suggests that 36 CFR 219.10(a) requires plan components in all circumstances, whereas 219.10(b) only requires plan components "if applicable to the plan area." This description of section 219.10(b) is incorrect. Subsection (b) contains no language suggesting that plan components are only required "if applicable to the plan area." Instead, it requires plan components that provide for the identified elements in all circumstances. "The plan must include plan components, including standards or guidelines, to provide for" six identified elements. 36 CFR 219.10(b).

Thus, the language of the Directive section 23.22 conflicts with the language of the planning rule. This deviation could lead field staff to conclude that plan components are not required, when in fact they clearly are required by the language of the rule.

Paradoxically, the Directive's description of subsection (b) is actually a better description of subsection (a). Section 219.10(a) states that, "when developing plan components for integrated resource management, to the extent relevant to the plan area . . . the responsible official shall consider" ten identified elements. 36 CFR 219.10(a) (emphasis added). Thus, section 219.10(a) contains more "if applicable" language than section 219.10(b). Nevertheless, the first sentence of section 219.10(a) is clear that plan components for the ten identified elements are generally required.

Recommendation: Revise directive section 23.22 to be more consistent with the language of 36 CFR 219.10 (a) and (b).

K. Section 23.22b Misquotes 36 CFR 219.8 and 219.10

Explanation: Section 23.22b misquotes 36 CFR 219.8(b) by omitting the phrase “standards or guidelines, to guide” after “including.” It omits a semicolon after “sustainable recreation” in its quotation of 36 CFR 219.8(b)(2). It also incorrectly inserts an ellipsis after “including” and before “outdoor recreation” in its quotation of 36 CFR 219.10, even though those words appear sequentially in that section.

Recommendation: Revise the quotations in section 23.22b to more accurately reflect the language of 36 CFR 219.8 and 219.10.

Standards

I. Introduction

While many of the directives provide helpful advice and direction to field managers, we are very concerned about the Forest Service’s lack of commitment to enforceable, mandatory standards in forest plans.

II. Issues

We strongly agree with comments submitted by Professor Martin Nie and Emily Schembra of the University of Montana urging the Forest Service to strengthen the role of standards in the directives:

> We recommend that the USFS embrace the use of standards when revising forest plans. Not only are standards required by law and regulation, but they can also lead to efficiencies in forest planning. They can also be advantageous from a political perspective, as they resonate with a cross section of planning participants, most of whom want a greater degree of certainty, structure, and predictability in forest management. Standards also play a significant role in ESA decision making, of which we believe will become an even more important part of forest management in the future.
>
> We believe that the proposed directives do not provide enough emphasis on the value of standards in planning or provide enough guidance in how they should be used in future plan revisions. From a legal standpoint, the use of standards is not optional. The National Forest Management Act requires that standards and guidelines be used to "insure" the protection of various resources such as soil, watershed conditions, and wildlife diversity (16 USC §1604). Standards are the only planning component that can adequately insure such protection because of their binding and enforceable nature. Other planning components, such as objectives and desired future conditions, are important but cannot insure protection because of the discretion they afford in implementation.
>
> The 2012 planning regulations make clear that every forest plan must include standards as one of five plan components (36 C.F.R. §219.7). They also require every plan to provide for social, economic, and ecological sustainability. To do so, the regulations require standards or guidelines be used "to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area," with more specific requirements pertaining to such things as water resources and riparian areas (36 C.F.R. §219.8). The regulations also require that plan components "must ensure" the protection of various resources and values in the context of timber harvesting and the management of recommended wilderness areas and wild and scenic rivers (36 C.F.R. §219.10-11). Standards are the only plan component that can ensure that the planning mandates found in the 2012 NFMA regulations are satisfied.
>
> The proposed directives do not fully explain the necessity of using standards to ensure the protections listed above. By describing standards as "technical design details to ensure that projects and activities maintain or move toward the desired conditions" (22.13), the agency is not recognizing the importance of standards, or the role they should serve as protective measures, as required by NFMA.
>
> We appreciate the agency's position that standards should primarily be used to constrain rather than compel certain activities. But our research suggests that this distinction is not always clear, and the proposed directives further demonstrate this. One of the directives states that standards "should not direct or compel processes such as analysis, assessment, inventory, or monitoring." (22.13, No. 5). This statement may be a problem because several forest plans use "mitigation" standards that essentially "compel" an action—mitigation. Another common type of standard used is a regulatory threshold standard where a plan quantifies some threshold that cannot be crossed. In some cases, the use of threshold-based standards will compel some sort of monitoring, for how else can the agency determine whether a regulatory threshold value has been crossed? Furthermore, as stated in 219.10, "The intent of the directives is for plan components to be designed to maintain existing conditions

when they are the desired conditions, and restore conditions where they are degraded." If used in this fashion, a "maintenance standard" will compel an agency action.

We are also confused by the agency's inconsistent discussion regarding which management scale standards should apply. The proposed language states, "If standards guide the design of projects they should not mandate conditions outside of project areas. Any guidance meant to apply more broadly than to project areas, such as, 'Snag density in XX watershed must average at least four snags per acre,' should be written in the form of desired conditions or objectives" (22.13, No. 8). This is confusing because standards are typically applied at either the forest level or management-area level, meaning they potentially impact multiple project areas, so we are confused as to how this directive applies in this situation. Furthermore, the language seems to be contradicted later, with the statement that, "Standards and guidelines can be applied at multiple scales to specific management activities such as timber harvest, trail construction, facility development, or road construction" (22.22g). Due to the inconsistency, responsible officials could interpret the proposed language to mean standards should only apply at the project or site-specific level.

We believe that standards ought to be applied at the forest level and management area level. A management area standard, for instance, can prohibit an activity such as grazing or the application of herbicides. Standards provide an essential way of distinguishing how one area of a forest will be managed in contrast with another. There is not much use in designating a management area if no rules are associated with what can and cannot be done in each one of them. As explained in our report, we also believe that the designation of management areas, especially when tied to suitability determinations, can provide an efficient way of protecting some resources.

Providing clear, consistent direction that fully articulates the role of standards as stated in NFMA and the 2012 NFMA regulations is essential to providing a more effective, efficient planning revisions process. We believe the directives should clarify, not confuse, the role of standards; therefore, the proposed directives should be adjusted to be more useful to responsible officials and the public participating in the forest planning process.

Letter from Martin Nie, Professor, Natural Resources Policy, College of Forestry and Conservation, University of Montana, & Emily Schembra, College of Forestry and Conservation, University of Montana to United States Forest Service (March 8, 2013) (attached).

The concerns raised by Professor Nie and others are well-founded. Based on our review of the directives, there are several sections in which the Forest Service has elected to focus on the inclusion of hortatory plan components, rather than mandatory and enforceable standards:

FSH 1909.12 Section	**Issues and Recommendations**
21.31	Currently, many forests use site-specific/project level plan amendments to obviate plan standards and guidelines. There is little point in having forest plan standards and guidelines if the Forest Service can escape compliance with them by amending the forest plan. The directives should require a limitation on when project-level amendments can be used -- for example, if there is new information indicating that a plan component should be changed for all future projects, rather than piecemeal.

22	"Land management plans should not have a set of unique plan components for every resource." This is a very disturbing statement. There *should* be specific plan components for particular resources, e.g. botanical areas, areas of critical environmental concern, etc. Otherwise, there is a significant risk that management that might be appropriate in one location ("general forest") would degrade resources (botanical) otherwise found there. Clarify what is meant by this sentence.
22.1	How enforceable is each type of plan component?
22.12	The direction that plan objectives "must be stated in measurable terms with specific reasonable time frames" and "are neither actions nor commands to take action and are not to be written as such" are mutually exclusive. Furthermore, the sample plan objectives (1909.12.22.1 Exhibit 01) are inconsistent with this direction (i.e., "add 5 thousand acres of Henslow's sparrow habitat to the current XX acres by 2020").
22.13	Standards are the primary way that the USFS establishes trust with the public, which often does not trust the agency's analysis of environmental consequences of its actions on NFS lands. Consequently, stating that "the responsible official should be judicious in establishing standards and generally limit them to situations where certainty is important or where the practice is generally accepted as best management" *is very bad advice, not to mention bad policy*. Similarly, "any guidance meant to apply more broadly than to project areas…should be written in the form of desired conditions or objectives" suggests that these provisions are not binding on the agency, and allow the Forest Service to ignore them when they are inconvenient. If the agency is serious about building trust with stakeholders, it needs to demonstrate that it is willing to hold itself accountable to objective measurements of its performance at the project level.
22.14	The direction that guidelines "must not use words that would compel or prohibit projects or activities"[13] suggests that these provisions are not binding on the agency, and allow the Forest Service to ignore them when they are inconvenient. Again, if the agency is serious about building trust with stakeholders, it needs to demonstrate that it is willing to hold itself accountable to objective measurements of its performance at the project level. What utility is the guidance that guidelines "must be written…so that consistency of a project or activity with a guideline can be easily determined" if guidelines are not, in fact, mandatory? Moreover, since project-specific forest plan amendments are permitted to exempt a project from a forest plan requirement, what is the point of having *any* binding requirements in a forest plan? This approach is likely to seriously undermine trust in the planning process. Under what circumstances would deviation from the terms of a guideline be appropriate? The Forest Service *can* <u>always</u> design projects to comply with guidelines (i.e., "ground-based logging should be prohibited on slopes greater than 35%"), but the agency chooses not to conform projects to those provisions nearly always for economic

[13] This statement is inconsistent with other guidance in the directives. For example, the directives state that "Standards or guidelines are appropriate for placing limits or conditions on projects or activities that may adversely affect the wilderness character of existing wilderness, wilderness study, or recommended wilderness areas." Sec. 23.22j. Either "guidelines" prohibit projects or activities, or they don't. The directives must be internally consistent.

	reasons (i.e., to harvest timber). This degrades trust. Continuing to allow the agency to police itself will not result in increasing the pace of restoration or achieving other resource goals of the agency.
22.35a	If a project has an "adverse but negligible" effect, how is it complying with long term forest plan goals and objectives? Items #3 and #4 are major loopholes that allow the agency not to comply with LRMP components: they permit both short and long term environmental degradation, which makes LRMP components irrelevant. We recommend eliminating both #3 and #4.
23.1a-e	Given the detail in this subsection, it seems nearly impossible not to have "standards" to direct management. How can a forest comply with all of this direction without enforceable direction via "standards?"
23.13a	The provision "Consider conservation measures and actions identified in recovery plans relevant to threatened and endangered species in the plan area" should be mandatory, rather than optional. Nearly all threatened and endangered species are found on federal lands, which bear the majority of the conservation burden to recover listed species. We will never recover species anywhere if the majority landowner (the Forest Service) doesn't take the responsibility for implementing recovery requirements. We recommend requiring the implementation of recovery plan provisions (activities and actions) as forest plan standards
32.1	"Plan components form the basis for developing the monitoring questions and associated indicators in the plan monitoring program, see sections 32.11and 32.12 of this chapter. Desired conditions and objectives should be stated in terms that are specific enough to determine whether progress toward their achievement is being made. In addition, standards and guidelines should be stated in terms that are specific enough to determine whether or not they are effective in achieving their purpose." This language highlights the importance of standards and guidelines that are enforceable. If plan components are hortatory only, they cannot be linked to monitoring indicators, and the adaptive management process will fail. We recommend referencing Collaborative Forest Landscape Restoration projects, which are required to have a robust (but implementable) monitoring plan.

III. Recommendations

In addition to the section-specific concerns raised above, Professor Martin Nie and Emily Schembra of the University of Montana expound on the lack of enforceable plan components, and the value of such components in their report, Martin Nie & Emily Schembra, Evaluating the Role of Standards in U.S. National Forest Planning (2013) (attached). We strongly urge the Forest Service to closely consider this report and not only respond to the issues raised in this report in any response to public comments on the directives, but also adopt the recommendations made therein.

Joining again with Nie and Schembra, "we hope the agency will consider providing more specific direction in how standards should be used in plan revisions. We offer the following recommendations for your consideration:

1. The USFS should provide national or regional-level guidance in how to use and write standards in plan revisions.
2. Standards should not be written in a discretionary way. Other planning components should be used when discretion is warranted.

3. Some standards should be written so that they serve as a regulatory link and assist the USFS in achieving its legal mandates.
4. Attention should be paid to how certain standards will be measured, spatially and temporally, and what actions must be taken by the USFS if a standard is breached.
5. Standards should be linked to the pro-active recovery and conservation of threatened, endangered, proposed, and candidate species as defined by the ESA.
6. When standards that compel an agency action are not warranted or feasible, the USFS should consider writing more specific, measurable, and pro-active planning objectives.
7. The USFS should clearly document the scientific rationale for plan standards. The necessary background, assumptions, sources of information, and technical details should be described so that the public can understand why a particular standard was or was not written.
8. The USFS should be transparent and explain to the public the science, and factors going beyond science, that were considered in using or not using a standard.
9. In cases where adaptive management is necessary, the USFS should try to anticipate possible changes to standards and provide mechanisms for their adjustment. In these cases, the question of how to plan for uncertainty should be considered early in the process. The use of default standards and tiering are two possible approaches to planning for uncertainty. Key to any adaptive management strategy in this context will be a funded and scientifically credible monitoring program in which monitoring information is tied back into the decision making process.
10. In some cases, the designation of management areas, especially when tied to suitability determinations, can provide a more efficient way of protecting resources than by relying upon standards."

Letter from Martin Nie, Professor, Natural Resources Policy, College of Forestry and Conservation, University of Montana, & Emily Schembra, College of Forestry and Conservation, University of Montana to United States Forest Service (March 8, 2013).

We further recommend that the Forest Service expressly clarify the enforceability of each type of forest plan component, and the legal basis for such conclusions.

IV. Conclusion

In sum, the Forest Service has established an ambitious framework for forest planning. The agency has also publicly stated its desire to build trust with the public and to increase the pace of forest restoration on our national forests. However, the agency is unlikely to achieve either goal if it cannot demonstrate to the public that it is serious about reforming past practices and holding itself accountable to ecological standards. The only way we see for the agency to accomplish those outcomes is to embrace robust, enforceable forest plan components.

Ecosystem services

I. Introduction

We applaud the Forest Service for incorporating the concept of ecosystem services into the planning rule and the directives. While not a new concept, making the full range of benefits that people obtain from ecosystems

an explicit part of national forest planning and stewardship is new and could be a very powerful approach to many of the social, economic, cultural and, of course, biophysical needs of people that national forests are so important in meeting. We urge, therefore, that the application of the ecosystem services idea or framework not be cut short by limiting the scope of services considered or be shunted to the side of other approaches. Instead, we recommend a comprehensive and integrated approach.

The national forests provide a wide range of ecosystem services and the USFS has a great opportunity to enhance the public's understanding of those benefits. However, the directives lack specificity concerning how ecosystem services will be addressed in the forest planning process, appearing instead as a set of additional analytical requirements within an already complex process. Considering the full range of ecosystem benefits and costs in forest planning should lead to better decisions in the long term by encouraging the agency to consider all of the facets of the health of ecosystems and all of the benefits those ecosystems provide for society. The concept is also useful for helping to manage the diverse expectations stakeholders have of public lands. Properly implemented, an ecosystem services approach will improve integration across programs, encourage agency staff to think about fundamental attributes and processes, and move land management drivers away from primarily commodity outputs like board feet of timber or acres of forage toward more diverse values, objectives and outcomes. It may also be a powerful tool to support collaborative approaches to management. Other potential benefits include improving accountability as measurement systems evolve to address ecological values that have not been quantified in the past, making management actions more strategic as a result of a more objective assessment of options, engaging a more diverse set of stakeholders in decision-making, and improving the overall effectiveness of resource management.

Improperly implemented, the ecosystem services approach may exacerbate the existing fragmented approach to management by adding yet another layer of assessment requirements and goals, thereby undermining rather than encouraging systems approaches. It could also lead to oversimplification of management objectives if ecological complexities are overlooked, or shift the emphasis of management to a limited suite of ecosystem services – termed "key ecosystem services" in the draft objectives – rather than the full range of services that NFS lands may be particularly, if not uniquely, positioned to deliver. A too-narrow approach could alienate stakeholders who traditionally support conservation. The result could be continued polarization and litigation and lead to a process that overlooks the fundamental ecological attributes and processes that contribute to the functioning of healthy ecosystems.

II. Issues and Recommendations

A. Clarify the definition of ecosystem services.

Explanation: The definition of ecosystem services provided in the directives should emphasize that *all* ecosystem services are inexorably linked to and dependent upon the integrity of ecosystems, including biodiversity and habitat quality, addressed elsewhere in the directives. Ecosystem services are directly and indirectly connected to the directives' concept of "sustainability" and "ecological integrity." It seems to us that social, ecological, and economic sustainability all rely on sustained provisions of ecosystem services. In addition, ecological integrity (which is core to the definition of ecological sustainability) should include the continued ability to provide (sustain) ecosystem services. We point this out to highlight the need to better integrate and relate all the ecological terminology throughout the directives. For example, by more closely aligning these concepts, provisions in the directives to

assess, plan for and monitor sustainability would also achieve much of what is needed to maintain and provide for ecosystem services.

Recommendation: The directives should clarify and supplement the planning rule's definition of ecosystem services in section 05 as follows: "Ecosystem services. Benefits people obtain from ecosystems, including those services for which economic value can be determined, and the services that clearly have non-market value, and which are derived from the health, integrity, and biodiversity of ecosystems themselves."

B. Assessments of ecosystem services should be comprehensive, rather than limited to "key" ecosystem services.

Explanation: Section 13.2 directs the responsible official to identify and evaluate "key ecosystem services provided by the plan area that may be influenced by the land management plan." The directives do not define however, what "key" means in this context. This is important because the selection of "key" services tiers into the land management plan directives (section 23.22a). If a wrong or an incomplete set of services is deemed to be "key" at the assessment phase, then the plan will not include measures to ensure their sustainable delivery.

Recommendation: Include ALL ecosystem services in the assessment phase as well as some means or criteria by which "key" services could be identified. On the first point, we recommend that assessments include, at a minimum, a consideration of each of the ecosystem services potentially derived from the land, water and other resources of the landscape in which the national forest in question lies.

The scientific literature (*e.g.*, de Groot, Wilson and Boumans 2002, *Millennium Ecosystem Assessment* 2005, PCAST 2011, Smith et al. 2011) and even the final planning rule (USDA Forest Service 2012, §219.19) provide different typologies of ecosystem services. These vary in approach, but not in scope: they cover everything from cultural benefits like educational and recreational experiences to the provision of forage and fiber. Most critically, they do not presume, *a priori*, that some services are "key" or more equal than others – at least not before all have been considered and evaluated. Therefore, assessments should start with an enumeration of each possible service and an evaluation of its presence, relevance and potential value to local, regional and national stakeholders.

We would support the notion of focusing more detailed, quantitative and qualitative assessment on some subset of the full set of potential ecosystem services, and we assume that these would be the "key ecosystem services" referenced in the draft. In order to make clear why those "key" services, and not others, have been chosen for assessment and evaluation, it is essential to define the criteria (or types of criteria) that should be used in making the choice. For example, "key ecosystem services" may be those that are legally required to be considered in the planning process, the ones that make the most significant contribution to the long term sustainability, resilience and integrity of the ecosystem, those which are especially unique in a particular forest, or those of special interest to local, regional and/or national stakeholders, those that benefit the most people, have the highest expected market and non-market economic value, or those connected to the most important human health and social welfare outcomes. Alternatively, "key ecosystem services" might be those most at risk of decline as a

result of climate change, encroachment of development on wildlands, or extraction of energy, mineral, timber, and other resources (which are themselves, of course, ecosystem services).

Our recommendation on this point is that whatever the criteria are, they be stated clearly and applied consistently within and across national forest planning processes. We further recommend that, given the incomplete ability to estimate the full dollar value of most, if not all ecosystem services, that the criteria are not based entirely on market and non-market valuation of the various services. That is, the criteria should also include consideration of human well-being derived from ecosystem services that is not reduced to or expressed in strictly financial terms.

C. Multiple uses and other individual uses should not be separated from the larger set of ecosystem services of which they clearly are a part.

Explanation: The content of "Assessment for Plan Development and Plan Revision" is outlined on pages 9-10 of Chapter 10, section 11.11 and includes, among others, "(7)…(ecosystem services); (8) Multiple uses…; (9) Recreation settings opportunities and access, and scenic character; (10) Renewable and nonrenewable energy and mineral resources;…(12)Areas of tribal importance; [and] (13) Cultural and historical resources and uses;…."

Based on the various taxonomies referenced above, all of what is described or alluded to in this list would properly and more manageably be categorized under item 7: "Benefits people obtain from the NFS planning area (ecosystem services)." While it may be useful to highlight and group these sub-categories of ecosystem services, we believe that it would be clearer and provide for a more consistent approach to assessment, evaluation, management and monitoring if they are explicitly cast as subsets of the whole. This would also avoid multiple-counting of the same values as, for example, the ecosystem service of recreational experience (§7), as the multiple use of outdoor recreation (§8), and again as recreation opportunities and access (§9).

Recommendation: Move Sections 8, 9, 10, 12 and 13 under Section 7, as sub-sections, and assess each of the values covered in those sub-sections under the rubric of ecosystem services.
These same concerns and recommendation apply to Chapter 20 - Land Management Plan. We believe that relevant distinctions of, for example, those ecosystem services enumerated under MUSYA, can be maintained while still treating those services as part of a coherently and consistently defined whole.

D. Section 13.2, "Assessing Benefits People Obtain from the NFS Plan Area," provides a very good framework or context for all of section 13.

Explanation: Assessing benefits people obtain from the plan area seems to us to be the entire purpose or the end for which "Assessing Social, Cultural and Economic Conditions" is part of the means. Under section 13.2 the Forest Service has framed well the concept of ecosystem services and their importance to human well-beings as well as their relationship with biophysical conditions on and of the landscape.

As above, however, we are concerned that by circumscribing consideration to "key ecosystem services," important services, including those that might turn out to be the "key" ones, will be missed or discounted.

Recommendation: Move section 13.2 to the top of the Section 13, and provide sub-sections for relevant groupings of ecosystem services (as noted above) that might be assessed using different data sources, methods, and techniques. Also, the language around or concerning "key ecosystem services" should be revised to include an explicit treatment of the expected process, criteria, and other considerations that would separate "key" ecosystem services from the rest.

In addition, the discussion of ecosystem services needs to be fully integrated into the sections describing how ecological assessments are conducted. Section 13.2 rightly states:

> Ecosystem services are the product of functioning ecosystems. As such, the assessment of terrestrial, aquatic, and riparian ecosystems and watersheds (sec. 12.1 and 12.2) will likely provide important information needed for an evaluation of ecosystem services provided by the plan area. Likewise, the evaluation of air, soil, and water resources (sec. 12.2); carbon (sec. 12.4); and topics covered in sections 13.3 through 13.9 provide relevant information about ecosystem services.

The directives would be clearer, stronger, and provide more guidance to planners if they describe how information from these relevant sections is synthesized and integrated for the purposes of this section.

E. Suggestion in section 13.14 of Chapter 10 that IMPLAN be used "to identify economic and social conditions (including jobs and income) affected by contributions of the plan area such as grazing, recreation, timber, and restoration" is inappropriate.

Explanation: IMPLAN is not a tool for identifying conditions. It is at best a tool for estimating the short-term (a year or two) jobs and income results of initial changes in the economy relative to the status quo. It is not suitable as a means of obtaining a picture of the status quo, which is the purpose intended in this section, which is to list "Sources of Relevant Existing information for social, cultural and Economic Conditions [emphasis added]."

Recommendation: Remove Item 4, regarding IMPLAN from this list of information sources.

III. Conclusion

Ecosystem services, biodiversity, and sustainability are inexorably linked and should be treated as such in policy and management. Doing a credible job in assessing and managing ecosystem services requires a systems approach that dovetails with sustainability and biodiversity goals to create efficient, integrated management. This approach will improve efficiency and reduce costs. It is fundamentally an interdisciplinary and multi-stakeholder collaboration that depends on credible information and trust.

Assessments of ecosystem services must address the full range of values in order to appeal to a wide range of stakeholders. Human communities and natural ecosystems derive benefits from well-functioning, diverse systems. These benefits include a wide variety of tangible products and intangible values which can (but need not) be expressed in monetary terms reflecting the market and non-market value of those benefits (e.g., Krutilla 1967, Morton 1999, Bowker et al. 2005).

Healthy and diverse ecosystems provide a broader range of services than degraded or simplified systems. Well-functioning systems are less vulnerable to the adverse effects of climate change and other stressors. These systems contain native plants and animals and natural processes, including ecological disturbances.

Biodiversity offers the essential underpinning for most other services. Fish, wildlife, and plants can also be considered "end products" within an ecosystem services framework. In any case, biodiversity must be addressed explicitly in ecosystem service management programs.

Grazing

I. Introduction

The following are concerns with the proposed planning rule directives for plan area lands that are grazed by livestock (Sec. 13.32 Range; and Sec. 23.22e – Rangelands, Forage and Grazing), and proposed rewording.

II. Issues

A. The term "range"
Lumping together in the one term "range" such diverse habitats as riparian areas, springs, wet meadows, aspen stands, sagebrush communities, desert grasslands, cottonwood galleries, ponderosa pine forests, and other habitats within which domestic and wild ungulates can forage together is precisely equivalent to calling all types of forests "timber." We have learned to refer to forests as forests rather than "timber" (a commercial term), and need to refer to national forest lands grazed by livestock with some other term than "range" (similarly a commercial term). The term needs to be replaced with specific habitats described where relevant (e.g., grasslands, shrub lands, shrub steppe, forests, riparian areas), or grazed lands when referring broadly to numerous habitats.

B. Lack of directives to assess effects of grazing in a balanced manner.
Throughout section 13.32, all references to assessment and evaluation of information refer to information about conditions or use of the "range," (i.e. conditions for livestock) as if that use is singular on those lands. There is lack of reference (with one exception) to assessing the impacts (both beneficial and adverse) of livestock grazing on other national forest uses and natural resources. For example, forest vegetation projects such as removal of pinyon-juniper from sagebrush; thinning of sagebrush to promote herbaceous understory; and removal of conifers encroaching on cottonwood and willow riparian areas have been almost entirely ignored in the forest planning rule and directives. Livestock grazing is often implicated in promoting conditions that prompt such vegetation projects (see Beschta et al. 2013). Likewise, livestock grazing can hasten the timeline during which fire-adapted forests such as ponderosa pine become overstocked with ladder fuels and are lacking in fine fuels to carry low-intensity fire (see Belsky et al. 1997).

C. Lack of directive to establish and use reference areas (not grazed by livestock).
Areas not grazed by livestock (both areas long not grazed, and those only recently not grazed) are essential to understand the impacts of livestock grazing, the impacts of livestock grazing separate from wild ungulates, the impacts of livestock grazing separate from drought/climate change, and the potential of passive restoration (i.e., removal of livestock) of lands previously grazed heavily.

Identification of existing reference areas and of gaps in reference areas should be part of the plan components (see suggested wording for the next-to-last paragraph of sec. 23.22e below).

A. Chapter 10 (Assessment): 13.32 Range

Note: The proposed directives are quoted below. Where font is in **yellow bold**, *that is proposed directives wording that appears unbalanced. Where font is in* yellow underlined, *that is suggested rewording.*

"13.32 - Range

Range encompasses permanent forage producing rangelands and temporary or transitory forage producing conditions (such as after timber harvest or a fire) that may be used to sustain ungulate populations or to graze domestic livestock. If applicable to the plan area, the assessment should identify and evaluate how the plan area currently provides grazing forage for domestic livestock on both permanent rangelands and transitory range in forested landscapes. It should further evaluate the conditions and trends associated with productivity and use of forage to identify how rangelands and transitory forage range contributes to ecological, social, and economic sustainability.

"Using available information, the responsible official should identify and evaluate information about range such as:

1. The current level of grazing activity in the plan area and within the broader landscape.
2. The current **range condition** in the plan area.
3. Trends influencing the **range conditions**.
4. Sustainability of the ecological **conditions on which grazing depends**.
5. The **contribution of** plan area grazing **to** social, economic and ecological sustainability.

SUGGESTED REWORDING

"Using available information, the responsible official should identify and evaluate information about range such as:

1. The current level of grazing activity in the plan area and within the broader landscape.

[Add] The current diversity and proportion of grazing arrangements within the plan area (e.g., collaborative experiments, conventionally grazed lands, non-use areas, reference areas, grass banks, closed allotments

2. The current condition of livestock-grazed areas in the plan area.
3. Trends influencing conditions within plan areas grazed by livestock.
4. Sustainability of the ecological conditions of the plan areas that are grazed by livestock.
5. The effects of plan area grazing on social, economic and ecological sustainability."

"Internal sources of information include:

1. Forest Service NRM database system.
    a. IWEB (within Infra) for summary, monitoring, and riparian condition data as well as role of plan area in context or broader landscape.
    b. Rangeland Inventory and Monitoring.
2. Assessment reports, either broadscale or finescale, **that evaluate range conditions**.
3. Monitoring **information about range conditions** or management of livestock.
4. Completed National Environmental Policy Act (NEPA) analyses.
5. Summarized information from,
    a. 2210 – Range Allotment Management Plan folders, and
    b. 2230 – Permit Case File folders.

6. Local research station reports or analysis."

SUGGESTED REWORDING

"Internal sources of information include:
1. Forest Service NRM database system.
   a. IWEB (within Infra) for summary, monitoring, and riparian condition data as well as role of plan area in context or broader landscape.
   b. Rangeland Inventory and Monitoring.
2. Assessment reports, either broadscale or finescale, that evaluate conditions of livestock-grazed plan areas.
3. Monitoring information about conditions of grazed plan areas or management of livestock.
4. Completed National Environmental Policy Act (NEPA) analyses.
5. Summarized information from,
   a. 2210 –Range Allotment Management Plan folders, and
   b. 2230 – Permit Case File folders.
6. Local research station reports or analysis."

"External information sources include:
1. Information **describing rangeland** and grazing conditions.
2. The conditions and trends in availability and balance of seasonal grazing on private and public lands and its social and economic role.
3. Community, county, and State agricultural and ranching economic assessments and reports.
4. Relevant analysis or information offered for consideration by the public **about range conditions** or management of grazing."

SUGGESTED REWORDING

"External information sources include:
1. Information describing livestock-grazed plan areas and grazing conditions.
2. The conditions and trends in availability and balance of seasonal grazing on private and public lands and its social and economic role.
3. Community, county, and State agricultural and ranching economic assessments and reports.
4. Relevant analysis or information offered for consideration by the public about conditions of grazed plan areas or management of grazing"

B. Chapter 20 (Land Management Plan): 23.22e - Rangelands, Forage, and Grazing

Concern: Again, there is lack of reference (with one exception) to assessing the impacts (both beneficial and adverse) of livestock grazing on other national forest uses and natural resources.

"23.22e - Rangelands, Forage, and Grazing
The 2012 Planning Rule at 36 CFR 219.10 requires the following:

The plan must provide for ecosystem services and multiple uses, including … range ... as follows:

(a) *Integrated resource management for multiple use*. The plan must include plan components, including standards or guidelines for integrated resource management to provide for ecosystem services and multiple uses in the plan area… When developing plan components … the responsible official shall consider:
(1) forage, … grazing and rangelands, …
(36 CFR 219.10)

The assessment has information about conditions and trends of rangelands, transitory range, and other **grazing lands**, sustainability of the ecological conditions that support grazing, and the contribution of grazing to sustainability (sec. 13.32). In designing the plan components, the responsible official should use this evaluation of the conditions and trends, stressors, and **the ability of the plan area to provide forage** in the future. The evaluation should include consideration of the ability of the plan area to **sustain both native ungulates and domestic livestock** that depend on the forage produced in the plan area."

SUGGESTED REWORDING

"The assessment has information about conditions and trends of rangelands, transitory range, and other lands grazed by livestock, sustainability of the ecological conditions that support grazing and other multiple uses within livestock-grazed areas, and the effects of grazing on sustainability (sec. 13.32). In designing the plan components, the responsible official should use this evaluation of the conditions and trends, stressors, and the ability of the plan area to provide forage and other multiple uses in the future. The evaluation should include consideration of the ability of the plan area to sustain native ungulates, domestic livestock, and other wildlife that depends on the forage produced in the plan area."

"Where range allotments exist within the plan area, the responsible official should consider range management (FSM 2200) of these allotments in the development of plan components that apply to the allotments. Where wild horse-burro territory boundaries are present in the plan area, the responsible official should consider these territories and management for wild horses and burros in the development of plan components that apply to these territories.

The responsible official should also recognize potential adverse interactions between domestic livestock and native species and provide appropriate plan components to avoid or mitigate these risks.

Plans may include desired conditions for rangelands, transitory range and other grazing lands and the **type and level of grazing anticipated** in the plan area. Plans may have objectives that identify expected progress for indicators of rangeland health or other intended achievements **such as acres or number of range improvements.** Suitability may indicate management areas or other areas where livestock grazing or wild horse and burro management **is, or is not, suitable, depending on physical and ecological considerations** and the desired conditions for the areas. Standards or guidelines such as seasonal closures or restrictions based on forage condition may be needed **to maintain the sustainability of the range resource.** Other plan content may describe the approach to range management to provide for rangeland health, restoration, and grazing opportunities for domestic livestock."

SUGGESTED REWORDING

"Plans may include desired conditions for rangelands, transitory range and other grazing lands and the type, level, and areas of livestock and wild ungulate grazing anticipated in the plan area. Plans may have objectives that identify expected progress for indicators of rangeland health or other intended achievements such as acres or number of range improvements and accommodations for native wildlife species sensitive to livestock grazing. Suitability may indicate management areas or other areas where livestock grazing or wild horse and burro management is, or is not, suitable or desirable, depending on physical, social, economic, and/or ecological considerations and the desired conditions for the areas. Standards or guidelines such as seasonal closures or restrictions based on forage condition may be needed to maintain the ecological sustainability of plan area grazed lands. Other plan content may describe the approach to range management to provide for rangeland health, restoration, and grazing opportunities for domestic livestock."

"Plan components should be designed to **accommodate the range of site specific needs of individual areas, species, allotments,** and plant communities. Allotment management plans for livestock and territory management plans for wild horse and burro populations provide specific operational guidance and are the most appropriate planning level to implement management tools such as minimum stubble height, multiple year mean utilization, or stream bank alteration limitations. The appropriate management level for wild horse and burro populations is established in the territory management plan.

When a plan is developed, amended, or revised allotment management plans and wild horse and burro territory plans should be evaluated for consistency with the new plan, as described at 36 CFR 219.15(a)) and sec. 22.35)."

SUGGESTED REWORDING

"Plan components should be designed to accommodate the range of site specific needs of individual areas, species, allotments, reference areas, and plant communities. Allotment management plans for livestock and territory management plans for wild horse and burro populations provide specific operational guidance and are the most appropriate planning level to implement management tools such as minimum stubble height, multiple year mean utilization, or stream bank alteration limitations. The appropriate management level for wild horse and burro populations is established in the territory management plan."

C. Chapter 30 (Monitoring); 32.13f – Desired Conditions and Objectives

Explanation: An important aspect of social sustainability of plan area management is the ability of the public to engage with and provide effective input into plan area management. Desired conditions refer to "social, economic, and/or ecological characteristics" of the plan area (36 CFR 219.7(e)(1)(i)). As noted in the *Final Report and Consensus Recommendations* of the Collaborative Group on Sustainable Grazing for U.S. Forest Service Lands in Southern Utah (Collaborative Group on Sustainable Grazing 2012), opportunities for public engagement in livestock management is a desired condition with the following as some simple monitoring indicators:

2. Opportunities to participate in livestock grazing programs on Forest Service lands

For Permittees

- Number of individual permits and Animal Unit Months (AUMs) per permit by district
- Permitted AUMS by month by district
- Grazing use reported by district by month

For Other Entities

- Identification of programs and partners engaged in grazing management arrangements by district, e.g.:
    - Utah Division of Wildlife Resources (UDWR)
    - Conservation organizations
    - Utah Dept. of Agriculture's Grazing Improvement Program (GIP)
    - Watershed Restoration Initiative (WRI)

3. Diversity of grazing management arrangements and public involvement that reflects a broad range of societal values

Number and acreage by district and year of diverse grazing management arrangements, including but not limited to:

- Multiple allotments combined into a single system
- Range improvements
- Changing kind and class of livestock
- Rest-rotation systems
- Deferred rotation systems
- On-off systems
- Non-use
- Closed areas
- Grass banks

Basis of (NEPA) / administrative appeals / formal objections of Forest Service grazing management decisions

Number of Forest Service decisions made annually that have participation from multiple stakeholder interests (Forest Service, permittees and others). Count to be made by Ranger District, broken down by these four decision types:

- National Environmental Policy Act (NEPA) analysis leading to decisions on grazing systems
- Allotment Management Plan (AMP) revisions
- Annual Operation Instruction (AOI) review
- Annual monitoring (collection of data, report out of the findings, and discussions about the results and implications for future management)

Recommendation: We recommend that section 32.13f (Monitoring of Desired Conditions and Objectives) be fleshed out to address the socially desired condition of public involvement in livestock grazing and rangeland ecosystem management.

Minerals Management

Oil and Gas

I. Introduction

Provisions of chapter 20 appear to inappropriately abrogate the Forest Service's responsibility for making suitability determinations with respect to the management of federal mineral resources on National Forest System lands. According to the draft,

> "*Responsible officials should not make suitability of lands identifications for the use of any resource, such as minerals if an entity other than the U.S. Department of Agriculture (USDA) has authority over the disposal or leasing of minerals.* Congress has given the Secretary of the Interior authority over the disposal of locatable minerals (gold, silver, lead, and so forth) and leasable minerals (oil, gas, coal, geothermal, among others). The Secretary of Agriculture has authority over saleable minerals (sand, gravel, pumice, among others). The Forest Service regulation for minerals is detailed at Title 36 CFR 228, "Minerals." For example, analysis of the availability of lands for oil and gas leasing is at 36 CFR 228.102 and is a project decision that may be made at the same time as a plan revision." (Sec. 22.15, emphasis added)

With respect to federal oil and gas resource underlying NFS lands, this language is in direct conflict with Section 17(h) of the Mineral Leasing Act as amended by the Federal Onshore Oil and Gas Leasing Act of 1987, which states (unequivocally):

> Sec. 17(h) National Forest System Lands - The Secretary of the Interior may not issue any lease on National Forest System Lands reserved from the public domain over the objection of the Secretary of Agriculture. (43 U.S.C. 225(h))

In other words, for over 25 years the Forest Service has had the statutory authority under the Mineral Leasing Act to make determinations about whether or not federal oil and gas resources on NFS lands should be made available for leasing and development. The manual should reflect the Forest Service's authority to make "suitability" determinations with respect to oil and gas development on NFS lands.

Also, the Forest Service has the legal authority to request the Secretary of the Interior to administratively "withdraw" hard rock minerals subject to the 1972 Mining Law from mining claim location on National Forest System lands (see, for example, 43 CFR 2310.1-2(c)(3)). Therefore, the manual should reflect the Forest Service's legal authority to seek the withdrawal of federal hard rock minerals from mining claim location under the General Mining Law of 1872 (30 U.S.C. §§ 22-42). The manual should therefore provide Forest Service land use planners with guidance on making "suitability determinations" with respect to whether areas of the National Forests should be subjected to mining claim location or hard rock mineral development.

Finally, the Federal Coal Leasing Amendments Act of 1976 provides the Forest Service with the authority to make land use planning decisions with respect to federal coal leasing decisions for federal coal resources located on National Forest System lands (30 U.S.C. 201 (a)(3)(A)(i) - (iii)):

> "(iii) Leases covering lands the surface of which is under the jurisdiction of any Federal agency other than the Department of the Interior may be issued only upon consent of the other Federal agency and upon such conditions as it may prescribe with respect to the use and protection of the non-mineral interest in those lands."

II. Issues and Recommendations

A. Issue -- The proposed directives in Chapter 20, sections 22.15 and 23.22, inappropriately abrogate the Forest Service's responsibility to make suitability determinations with respect to the management of federal mineral resources located on National Forest System lands.

Explanation: The development of oil, gas, coal, hard rock, and other mineral resources on National Forest System lands can have damaging and even catastrophic environmental impacts on those lands. The Forest Service has ample legal authority – in fact, the legal *responsibility* - under various federal mineral and land management statutes and regulations to determine whether mineral development is an appropriate use of areas of National Forest System Lands, and under what conditions mineral development may be allowed. In other words, the Forest Service has a wide range of decision-making authority for federal mineral resources on the lands it manages, ranging from (for example) prohibiting mineral development altogether via administrative withdrawals to developing prescriptive management regimes for the safe development of these resources.

Recommendations: The provisions of Chapter 20 relating to the management of federal mineral resources on National Forest System lands need to be drastically revised to reflect the reality that the Forest Service has not only broad authority under existing statutes and regulations to decide if oil, gas, coal, hard rock and other mineral development should take place at all, but the responsibility to do so when, for example, the ecological integrity of watersheds or ecosystems would be compromised or when at-risk species would be harmed. Furthermore, the Forest Service has broad authority to determine the conditions under which mineral development can take place on NFS lands. As with all other national forest resources, the Forest Service should make these determinations via its land use planning process.

We recommend that the Forest Service develop criteria for determining the suitability of NFS lands for mineral exploration and development activities. For example, Inventoried Roadless Areas should be determined to be off-limits to oil and gas leasing. Though the "roadless rule" does not prohibit oil and gas leasing on IRAs *per se*, a forest plan could designate such areas as "no leasing zones." Another unsuitability criterion would be habitat for species listed under the Endangered Species Act. Another example would be areas determined by the Forest Service to be suitable for Wilderness designation by Congress.

We also recommend that the Forest Service develop an "unsuitability screening process" similar to the process used by the Bureau of Land Management to determines which areas of the BLM lands are suitable for federal coal leasing (see, for example 43 CFR 3461 et seq.) We recommend that the Forest

Service, in developing such a screening process, invite public commentary regarding the criteria that should be used to determine areas of the National Forest System that should be placed off-limits to mineral leasing or mining claim location.

Coal

I. Introduction

The draft directives fall short of ensuring appropriate guidance to address the Forest Service's obligations related to coal leasing and mining on National Forest System lands. The directives should be improved to ensure: 1) that comprehensive coal suitability decisions are carried out at a programmatic scale; 2) that appropriate guidance is established to ensure that coal leasing consent decisions are effectively and consistently undertaken; and 3) that the Forest Service's authority to limit and/or prevent the surface impacts of coal mining on National Forest System lands is expressly stated and understood by the agency.

II. Issues and Recommendations

A. Coal Mining Suitability

The Forest Service is obligated to ensure that surface coal leasing and mining on National Forest System lands is not undertaken on lands that are unsuitable.[14] Regulations specifically state that, while the Department of Interior is responsible for assessing the suitability of federal lands for leasing and consequent surface mining, such assessments are principally undertaken through "land use planning assessments by the surface management agency[.]" 43 C.F.R. § 3461.0-6. As a surface management agency, the Forest Service is therefore obligated to ensure that through land management planning, surface coal leasing and mining suitability assessments are completed consistent with the procedures set forth under 43 C.F.R. § 3461.2 and based on the criteria set forth under 43 C.F.R. § 3461.5.

The need to ensure that suitability assessments are completed through land use planning is critical to ensuring that the stringent suitability criteria are met on a forest-wide basis, and that any exemptions to the suitability criteria are credibly exercised consistent with the need to ensure that decisions are based on consideration of the "best available science." 36 C.F.R. § 219.3. The need to ensure that suitability assessment are completed through land use planning is further critical to ensure effective forest-wide, as opposed to piecemeal project-level, management and protection of National Forest System lands. Indeed, many unsuitability criteria hinge upon the surface management agency making determinations regarding habitat and populations of fish, wildlife, and plants, many of which must be managed on a forest-wide scale to ensure adequate diversity in accordance with the National Forest Management Act. *See* 16 U.S.C. § 1604(g)(3)(B).

The need to ensure that effective programmatic coal suitability determinations are made is especially critical in light of how the Forest Service has traditionally carried out its responsibilities. Too often, we have seen the Forest Service designate all lands within a national forest as "suitable" for coal leasing

[14] Surface coal mining operations are defined at 43 C.F.R. § 3400.0-5(m)(m) to include "activities conducted on the surface of lands in connection with a surface coal mine," as well as, "surface operations and surface impacts incident to an underground mine."

and wait for a coal lease application to be submitted before ever assessing whether any "suitable" lands are, in fact, "unsuitable." This often puts the Forest Service in a situation where its programmatic decision is at odds with a project-level decision, thus undercutting the ability of the Forest Service to effectively manage National Forest System lands in accordance with federal coal leasing regulations.

The current directives at chapter 20, Section 23.22m state that plan components dealing with minerals must be "in accord with Agency jurisdiction, applicable law and Federal regulations" and reference the criteria at 43 C.F.R. 3460, but they should be expanded upon to provide more precise direction ensuring that suitability assessments are effectively carried out at the planning level. To begin with, we request that the directives explicitly ensure that suitability analyses are undertaken at a programmatic level. Additionally, we request the directives ensure more precise guidance for the Forest Service. For example, we urge the Agency to provide guidance as to how to assess whether there exists "significant forest cover" on National Forest System lands west of the 100th Meridian, to provide guidance to aid the Secretary of Interior in determining whether there exists "significant recreational, timber, economic or other values which may be incompatible with [coal mining]" on any National Forest System land, and to provide guidance as to which methods of surface mining should or should not be allowed. *See* 43 C.F.R. § 3461.5(a)(2).

B. Guidance on Coal Leasing Consent Decisions Must be Provided for Through Land Management Planning

Before the U.S. Bureau of Land Management can lease coal underlying National Forest System lands, the U.S. Forest Service must provide its consent to the leasing and the attendant mining impacts. *See* 43 C.F.R. § 3400.3-1. Consent is not compulsory, however; it is a discretionary act that the Forest Service is vested with authority to issue or withhold.

There is little guidance, however, as to how the Forest Service should or should not issue its consent to coal leasing on National Forest System lands. In other words, there is little guidance as to how the Forest Service should exercise its discretion to issue or withhold its consent to coal leasing underneath National Forest System lands. This is problematic, particularly in the context of ensuring that coal leasing is consistent with programmatic management goals and direction.

We believe that the most appropriate place to provide that guidance is through land management planning. To this end, the planning directives should provide more specific guidance as to how the Forest Service should implement project-level consent responsibilities on a programmatic scale.

We recommend that chapter 20, Section 23.22m be expanded to provide this more specific guidance. To begin with, we urge the Forest Service to ensure that the directives expressly state that consent decisions are discretionary. We further urge the Forest Service to ensure that coal leasing consent decisions not only adhere to the coal leasing suitability criteria found at 43 C.F.R. § 3461.5, but also ensure that they adhere to other programmatic guidance adopted by the Forest Service, including, but not limited to, standards and guidelines, desired future conditions, and other programmatic needs.

C. Authority to Limit and/or Prevent Surface Impacts of Coal Mining

In addition to withholding consent to coal leasing, the Forest Service also has broad discretion to ensure that coal leases on National Forest System lands are conditioned to ensure adequate protection of resources. Federal coal regulations state that the Forest Service, in consenting to a coal lease, may prescribe "such conditions as that officer may prescribe to insure the use and protection of the lands for the primary purpose for which they were acquired or are being administered." 43 C.F.R. § 3400.3-1.

In addition to acknowledging this authority, we request the directives be expanded to provide guidance as to how coal leases should be conditioned on a programmatic level to ensure that National Forest System lands are adequately protected for the primary purpose for which they were acquired or are being administered. We do not suggest that the surface impacts of coal leasing be addressed only at the programmatic level, but rather that robust programmatic guidance be developed to ensure that at both the programmatic and project-level, the surface impacts of coal mining are appropriately managed.

Renewable Energy

I. Introduction

President Obama has made development of renewable energy resources and associated transmission infrastructure a priority for this administration. Through the White House's *We Can't Wait* initiative, through implementation of Executive Order 13604, and in the Administration's FY14 budget request, significant effort is being made to organize efforts to tap renewable energy on public lands. From OMB, "The vast acreage of Federal land holdings presents an opportunity for the Nation to smartly and sustainably facilitate large-scale clean energy projects." (See http://www.whitehouse.gov/omb/factsheet/creating-the-clean-energy-of-tomorrow-and-protecting-the-environment) Yet the Forest Service has relied on a piecemeal approach to identifying which areas are suitable—and which are not—for renewable energy infrastructure.

The conservation community has worked with the federal government to undertake policies to ensure a consistent approach to identifying sensitive habitats where wind development is inappropriate and places where wind development can proceed without undue environmental harm. This approach is essential to making sure we aren't faced with a false choice between our rich natural heritage and a clean energy future. If we take the time to study the landscape and determine in advance of project proposals where we can expect high and low impacts — both environmental and commercial — development can be steered to appropriate places and away from areas of conflict. This is already happening out west with big solar projects on public lands. But if this approach is not extended to wind and other renewable energy in our national forests, developers will continue to choose project sites based on energy potential alone. The Forest Service can do more to make sure land managers have the direction to make clear ahead of time what areas are too wild to develop, and what are not.

This concept is expressed in the Forest Service Strategic Energy Framework, 2011, which states: "The Forest Service will work with partners to use emerging knowledge when siting wind, solar, and conventional energy installations. Decision support tools will be used to understand effects of expanded interstate electric transmission on wildlife and plant populations, and to inform future decisions on transmission siting, including the design of appropriate mitigation options."

II. Issues and Recommendations

A. Direction for plan amendments does not adequately address wind or other renewable energy infrastructure.

Explanation: Chapter 10 lays out direction for assessments for plan amendments. This chapter implements the national wind directives, the Forest Service Strategic Energy Framework, the FWS wind and wildlife guidelines (presumably), and other key policies. It is likely to come into play for most renewable energy resources, as few national forests have affirmatively designated lands as available for wind, solar, transmission, or other renewable energy resources. Yet Chapter 10 has precisely one reference to wind power and energy generally (section 13.5). This reference does not adequately address the kind of suitability analysis required to assess the appropriateness of lands for this kind of infrastructure.

Recommendation: Revise section 13.5 to specifically address how future assessments should consistently consider lands with renewable energy and transmission potential.

B. Directive to assess social, economic, and ecological sustainability of energy should include negative as well as positive effects.

Explanation: Energy development of all kinds entails significant impacts on the landscape. To date, these impacts are often not assessed until late in the project permit process. Section 13.5 calls for this kind of analysis, but is worded in such a way as to imply only positive benefits will be accounted for. "6. The contribution of energy and mineral activity in the plan area to social, economic, and ecological sustainability."

Recommendation: Change wording of this sentence in Section 13.5 to read: "6. The impacts (positive and negative) of energy and mineral activity in the plan area on social, economic, and ecological sustainability." Standard guidance for how to address the full range of benefits and costs would increase the predictability of what is included in such an analysis.

C. Direction for future plans does not adequately address wind or other renewable energy infrastructure.

Explanation: Chapter 20 lays out direction for future plans. This chapter implements the Forest Service's national wind energy directives and Strategic Energy Framework, the Fish and Wildlife Service's wind and wildlife guidelines, and other key policies. This is where we would expect to see a robust discussion of how to consider renewable energy in particular, especially with regard to factors for consideration in making land allocations to specific energy generation and transmission types (23.22n). However, the consideration of suitability ("Suitable uses may identify areas suitable or not suitable for certain types of energy developments in accord with the appropriate legal authorities") relies only on legal authorities and should be supplemented with a discussion of other public policy objectives.

Recommendation: Provide clear direction to land managers regarding how to incorporate other key policies, including the FWS wind and wildlife guidelines, the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act, into forest planning for renewable energy development.

D. Directive to assess social, economic and ecological sustainability of energy should include negative as well as positive effects.

Explanation: Energy development of all kinds entails significant impacts on the landscape. To date, these impacts are often not assessed until late in the project permit process. Section 23.22n calls for this kind of analysis, but is worded in such a way as to imply that only positive benefits will be accounted for. "The assessment also describes how energy developments contribute to social, economic, and ecological sustainability."

Recommendation: Change wording of this sentence in Section 23.22n to read: "The assessment also describes how energy developments contribute to or detract from social, economic, and ecological sustainability." Standard guidance for how to address the full range of benefits and costs would increase the predictability of what is included in such an analysis.

Ecosystem Integrity and Species Diversity

I. Introduction

This section of our comments addresses the directives' treatment of ecological sustainability and plant and animal diversity in Chapters 10-40 (implementing 36 CFR 219.8 and 219.9, respectively in the planning rule) and the directives' overall approach to adaptive management and monitoring.
According to the Forest Service, the 2012 Planning Rule "provides a process for planning that is adaptive and science-based, engages the public, and is designed to be efficient, effective, and within the Agency's ability to implement (preamble, 77 Fed. Reg., p. 21162)." At the time of rule promulgation, the agency said that it would propose "directives (the Forest Service Manual and Handbook) that will provide additional guidance and more detailed interpretation *to ensure consistent and effective implementation of the rule* (preamble at p. 21178, emphasis added)." In this section, therefore, we provide recommendations to help ensure that the planning rule directives are clear, consistent, effective, and efficient.

II. Issues and Recommendations

Adaptive Management

A. Provide a conceptual model of the planning process and adopt a planning framework.

Explanation: The ecological sustainability and diversity planning process assumes causality between plan components and the ecological condition of the land. The ecological effectiveness of the directives relies upon a fundamental assumption: that species will persist over time if certain and necessary ecological "characteristics" and "conditions" are provided. The directives rely heavily on the use of proxy measures to assess progress toward achieving conceptual ecological goals. Selection of proxy characteristics and conditions for assessment, planning, and monitoring are therefore of fundamental importance to achieve ecological effectiveness. These attributes must be identifiable and measurable.

Recommendation: The directives should present a clear and simple explanation of how the sustainability and diversity planning process is intended to operate. Ecological concepts must be clearly matched with their respective proxy measures, without oversimplifying the conceptual goals. We strongly recommend that the Forest Service adopt the common conservation planning practice of applying conceptual models to illustrate, for example, the presumed relationships between ecological concepts and their proxy measures, between plan components and intended and unintended ecological effects, and between monitoring information and the plan's expectations.[15] Established conservation planning tools such as the Open Standards for Practice of Conservation should be considered to help facilitate logical adaptive management planning.[16] We understand that the Forest Service has successfully applied the Open Standards in planning and ecological assessments (Ecological Sustainability Evaluation ESE).

B. Assumptions, uncertainty, and lack of information should be addressed throughout the planning process.

Explanation: As hallmarks of adaptive management, Chapter 30 and section 41 of Chapter 40 clearly emphasize the role of testing assumptions associated with plan components, and reducing uncertainty through monitoring. Section 41 provides a thoughtful discussion of the adaptive management framework, but we strongly recommend that its core elements be integrated into the assessment, planning and monitoring chapters. However, Chapters 10 and 20 are almost completely silent on these key issues, despite Chapter 40 stating that Responsible Officials should during assessment "identify key assumptions, areas of uncertainty… (p. 4)."

Recommendation: For the adaptive management process to be effective, assumptions and uncertainty will need to be explicitly identified and documented during the assessment and plan component phases. The directives should also provide a useful example of how monitoring will be used to test assumptions and reduce uncertainty associated with a plan component or set of plan components. Finally, the directives need to provide a more effective process and criteria for determining when plan components are ineffective, including guidance on the use of adaptive management triggers.

C. Information gaps and science reviews

Explanation: Adaptive management should explicitly target areas of low information and use purposeful planning and monitoring to fill those gaps. Chapter 10 admirably requires the identification of information gaps (sec. 11.11, 12.53), and suggests they could be filled through plan monitoring (sec. 11, p. 7). However, Chapter 30 does not mention using monitoring to address information gaps.

Recommendation: Information gaps should be added as a consideration in section 32.11(4). Using planning and monitoring to increase information is especially important to conserving species not selected as species of conservation concern (SCC) because "there is *insufficient scientific information* available to conclude that there is a substantial concern about the species capability to persist in the

[15] Noon, B. R. 2003. Conceptual issues in monitoring ecological systems. Pages 27-71 in D.E. Busch and J. C. Trexler, eds. Monitoring ecosystems: Interdisciplinary approaches for evaluating ecoregional initiatives. Island Press, Washington, D.C.

[16] See http://www.conservationmeasures.org/initiatives/standards-for-project-management

plan area over the long term" (sec. 12.53, p. 37, emphasis added). Purposeful monitoring should be encouraged to address these types of information gaps. That requirement should be added to section 32.13b.

We also recommend that science reviews be encouraged in situations where there is a high degree of uncertainty to facilitate adaptive management and learning. For example, we recommend that the directives encourage the use of science reviews in the selection of SCC, or in critical diversity evaluations during the planning phase. To facilitate the application of these important review tools, the "may" at the top of Chapter 40, p. 15 should be changed to "should."

COMMENTS ON DIVERSITY ASSESSMENTS

A. Ecological terminology is confusing and reduces directives' potential effectiveness.

Explanation: The directives should provide a clear explanation of the planning rule's various ecological concepts and guide planners in how to break these concepts down and make them operational for the purposes of assessment, planning, and monitoring. For example, we were often confused by the use of several variants of terms including "dominant ecological characteristics," "key characteristics," "selected characteristics," "indices," "habitat conditions," and "habitat types."

Recommendation: We recommend that the directives take a more systematic approach of cataloguing the various ecological management concepts and targets, perhaps by introducing a table, matrix, or other visual aid that illustrates linkages and overlap.

B. Ensure coordinated identification of ecosystems, consider the needs of at-risk species in ecosystems.

Explanation: An initial step in the diversity assessment is the identification of target ecosystems and watersheds. The planning regulations pertaining to the assessment (36 CFR 219.6) state that the responsible official shall "(2) coordinate with or provide opportunities for the regional forester…to provide existing information for the assessment." The draft directives do not discuss the requirement for coordinating with the regional forester or provide direction on how to coordinate with the regional forester in identifying ecosystems.

Recommendation: To facilitate planning, management, and monitoring consistency across the units of a region, as well as to ensure coordinated at-risk species management, we recommend that the regional forester participate in and help coordinate the identification of target ecosystems. We suggest that the directives include specific guidance in how responsible officials should coordinate with regional foresters in identifying ecosystems.

In addition, the needs of at-risk species should be considered when identifying target ecosystems. Section 12.12(2) twice refers to the consideration of "habitat types," but fails to be purposeful in linking habitat types to identified species' conservation needs. When selecting ecosystems, the viability needs of SCC should be explicitly considered, as they should be throughout the section, referencing the parameters of distribution, resiliency and adaptability.

C. Key characteristics should be better defined and better integrated with at-risk species' needs

Explanation: Management and monitoring of key ecosystem characteristics and ecological conditions are needed to support confident conclusions about the effectiveness of plan components, yet section 12.14 is vague on key points and could be better integrated with section 12.5. In many cases the driver of selection of ecosystem characteristics will be conservation of at-risk species or groups of at-risk species. And while there are frequent references to species as a compositional characteristic, there is no guidance on how to determine which conditions managers will need to assess to determine the likelihood of persistence of the entire suite of threatened, endangered, proposed, candidate, or species of conservation concern. It is difficult to imagine how the responsible official will know which ecosystem characteristics will be important for *all* species of concern. Clearly, the responsible official must decide which species or species groups will serve as proxies for all species of concern or which ecosystem characteristics will serve as indicators for most species of concern, but the draft directives do not provide directions for doing so.

Recommendation: The ecological conditions necessary to conserve at-risk species should be recognized in the approach outlined in section 12.11, explicitly recognized in the selection of ecosystems in section 12.12, and play a more prominent role in the selection criteria for key characteristics described in section 12.14. We also suggest that the directives better define characteristics that would describe ecological conditions needed for SCC or for identifying proxy species to help choose important ecosystem characteristics. Describe the timing and sequence in choosing SCC and choosing ecological characteristics that are needed for those species.

The directives should provide guidance to planners on how to choose the most effective and efficient combination of key characteristics. The directives should state whether there is a minimum standard for choosing key ecosystem characteristics. The directives should be clear that the set of characteristics should be sufficiently robust to meet the requirements of 36 CFR 219.8 and 219.9, and should provide direction on how to determine whether or not this is likely to be the case. The draft directives state on p. 21 of Chapter 20 that "*one or more* of the following criteria should guide the selection of key ecosystem characteristics (emphasis added)." That sentence should be changed to state that "*each* of the following criteria should guide the selection of key ecosystem characteristics." One criterion alone is not sufficient to guide the process; for example, the selection of key ecosystem characteristics would clearly be inadequate if the responsible official considered only criterion 5: "the relevant information is available."

The examples of potential key ecosystem characteristics for composition, structure, function, and connectivity are helpful. We have a few suggested additions to this list. Under "composition," we suggest adding "presence and abundance of rare, endemic, sensitive, declining, threatened, and endangered species, and species of conservation concern." This would be a natural complement to species distribution and species diversity. Under "structure," we suggest adding "road density and spatial configuration" to the list of fragmentation characteristics and "stream connectivity and potential for fish passage" under a new bullet describing stream fragmentation characteristics. These two characteristics would also be included in the connectivity section. Under "functions (ecological processes)," we suggest adding "historic animal migrations" under the second bullet; "pollination" under the third bullet; and adding a new bullet "predation at multiple trophic levels (compared to the NRV)" as an important indicator of healthy ecological function. Under "connectivity," we suggest

adding stream complexity (e.g., wetlands, pools, meanders, woody debris, beaver dams). We also recommend including examples of key characteristics that may be at-risk of climate impacts, for example, stream flows.

We suggest re-orienting the at-risk species assessments in this process (re-ordering the steps in the directives such that the ecological needs of at-risk species are identified prior to the selection of target key characteristics) such that those species ecosystem and ecological needs can be proactively addressed when selecting key ecosystem characteristics. We are concerned that at-risk species ecological needs will not be adequately addressed during the assessment phase and thus inadequately addressed in planning and monitoring, resulting in less than effective plan components.

D. Provide more guidance on climate change vulnerability assessments on ecological integrity

Explanation: The directives should provide more clarity on factoring climate into ecological integrity assessments. Concepts of resiliency and redundancy are integral to this discussion as well, yet mostly absent. The Forest Service has a regulatory concern about the adaptability of ecosystems (36 CFR 219.6) and species (36 CFR 219.19 – definition of viable population). Yet, there is only one reference to adaptation in Chapter 10, in section 12.32(4), and it only refers to ecosystems. Surprisingly there is no reference to an assessment of a SCCs ability to adapt, despite the definition of viability in the rule. Nor is there a reference to the ability of a SCC to be resilient over time, despite that same definition. The directives should encourage the purposeful selection of at least some key characteristics that are at risk of climate impacts. The directives confuse the issue in section 12.14 by suggesting selection of characteristics that "respond to direct or indirect manipulation or modification that is within control of the Forest Service, or indicate something about the limits to Forest Service authority or the inherent capability of the land." This latter phrase is ambiguous, but suggests the selection of characteristics that may be vulnerable to climate change.

Recommendation: The directives need to proactively address integrity, indicators, and climate change, including the associated concepts of predicted future integrity and ecosystem/species adaptations. Frankly, we were expecting a much more comprehensive discussion of climate change vulnerability and adaptation within Chapter 10 and throughout the directives. It would be appropriate to expressly incorporate concepts of uncertainty and assumptions into climate change assessments related to diversity management, yet this appears to be lacking. This could be done in sections 12.31 and 12.32, which make a point of qualifying limited information in this area of information management.

A major stressor on National Forest System lands, particularly in the Intermountain West and Southwest, and relevant to climate change in those regions, is ungulate impacts. [17] In section 12.32, we recommend adding "ungulate impacts" to the list of stressor examples so that this particular stressor will be expressly addressed in the plans of those forests where large populations of domestic and/or wild ungulates are present: "Examples of stressors include invasive species impacts, *ungulate*

[17] Robert Beschta, Debra Donahue, Dominick DellaSala, Jonathan Rhodes, James. Karr, Mary O'Brien, Thomas L. Fleischner, and Cindy Williams. 2013. Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild, and Feral Ungulates. Environmental Management 51:474–491.

impacts, loss of spatial connectivity, disruption of natural disturbance regimes, and influence of climate change."

E. Identifying and assessing at-risk species

Explanation: The process outlined in section 12.52 of the directives for identifying and evaluating species of conservation concern (SCC) is confusing and should be clarified. We are also concerned that the process encourages *de facto* decisions regarding SCCs during the assessment phase.

A key area of confusion stems from the use of the term "potential species of conservation concern." This term is used, but undefined, in the assessment section of the planning rule (36 CFR 219.6 (5)), but the word "potential" is dropped in the plan development section of the planning rule (36 CFR 219.7 (3)). The planning rule, therefore, implies that there is a "potential" list of SCCs developed during the assessment phase and a "final" list of SCCs used in writing new forest plans. However, the draft directives do not indicate when the regional forester makes a *final* determination of the species of conservation concern from the *potential* species list. Section 12.52 provides a list of four possible ways in which the identification of *potential* SCCs may be conducted, yet none of the four appears to include public input.

The directives appear to enable *de facto* selection of "final" SCCs by the responsible official by including mandatory requirements based in the assessment phase that mirror the regulatory requirements. This language suggests that there will be no substantive difference between "potential" SCCs as targets for assessment and the formal SCCs as defined under the rule. This appears to be contrary to the intent of the rule which establishes a regional forester determination for this decision.

Recommendation: The process for "finalizing" the SCCs needs to be clarified. The directives should make clear when the potential SCC list is developed (and who develops it) and when the final SCC list is determined by the regional forester. In addition, the directives must clarify the avenues by which public information and proposals for potential SCCs may be integrated into the planning process. Generally, the directives should clarify how new information "brought forward during the public and governmental participation process" (e.g. in section 12.14) will be assessed and incorporated into the planning process.

We understand that preliminary SCC targets need to be identified early on in the process to enable meaningful and efficient assessments. There is tension between planning efficiency and accountability in decision-making. One way to improve the process is to make early formal designations of SCC. As a principle, it makes sense to have formal SCC identified early in the planning process so that information can be applied throughout the process, for example, in assessing the necessary ecological conditions for at-risk species.

In addition, we recommend that the regional forester couple SCC information with key ecosystem characteristics for each SCC. The regional forester's office should provide this fundamental ancillary information at the same time as the designation of the SCCs. That will be useful to individual planning units, which may not have the capacity to derive this information, and will lead to greater consistency in forest plans. The research station system should be encouraged to be involved in the development

of this supporting information. Science reviews should be encouraged for the selection of SCCs and supporting ecosystem information sets.

We recommend that the directives include species with status ranks G/T 3 and S 1-2 as species that must be potential SCC rather than as species of consideration. These rankings are sufficient to qualify the species as having potential substantial concern in the plan area. In addition, regional sensitive species should be included on the potential species of conservation concern list. Regarding sensitive species, we understand that changes are being made to the FSM pertaining to sensitive species and remind the agency that these two policy areas must be well coordinated and effective in meeting agency policy objectives, including avoidance of the need to list sensitive species as threatened or endangered.

We were also surprised to see, in effect, incomplete definitions of viable population used in the criteria under section 12.52. By definition SCCs must be sufficiently distributed to be resilient and adaptable to stressors and likely future environments, yet these parameters are absent from the discussion in 12.52. These parameters should be included in each reference to a species' ability to persist over the long term, because it is an essential part of the definition of viability (36 CFR 219.19).

F. Occurrence records

Explanation: Section 12.52 states that "all potential SCCs must meet two mandatory requirements for their identification as an SCC." We are concerned that these mandatory requirements confuse the SCC process.

The first of these requirements is worded so that it places the burden of evidence on proving that a native species still exists in the plan area by requiring an occurrence record from "within the last 10 to 15 years." This requirement is misguided for a number of reasons. 1) It downplays the BASI requirement. 2) It incorrectly assumes that the absence of evidence is evidence of absence. 3) It runs contrary to the precautionary principle, which states that if an action or policy has a suspected risk of causing harm to the environment, in the absence of scientific consensus or information, the burden of proof falls on those proposing a potentially harmful act. 4) It does not acknowledge that occurrence records will be more difficult to obtain as the species becomes rarer. And finally, it discounts the possibility that no one has attempted to locate the species in the last 10 to 15 years.

Recommendation: The agency should reconsider whether these requirements are necessary here, and rethink the SCC identification process.

The occurrence requirement could be moved to the second section that addresses when a species should NOT be identified as a potential SCC, and could be written as follows: "The species is a native species in the plan area, but after repeated, methodical and thorough searches of the plan area, it has not been located for at least 15 years." It is also critical to include the rationale for this determination, and to design monitoring to address this information gap if possible.

Recommendation: Furthermore in relation to SCC, we recommend that section 12.55(1) at p. 41 include "reference conditions" as a potential source of information about potential persistence of

certain species within the plan area, because current conditions within the plan area might at times be a better indicator of potential viability of the species than an estimated natural range of variability.

Similarly, section 23.11a(3) should include the potential use of reference areas in the plan area (e.g., areas that have been restored through passive or active restoration) which can reveal current potential of the particular plan area:

3. If NRV is not appropriate, use Best Available Scientific Information (BASI) *and/or reference conditions (e.g., of recovering areas) relevant to the plan area* to inform design of plan components. In these situations the responsible official should:

a. Design for ecosystem integrity based on a general scientific and ecological understanding of the conditions that would sustain key ecosystem characteristics and sustain at-risk species using factors such as: representativeness, redundancy, habitat associations of particular species, or other factors (FSH 1909.12, ch. 10, sec. 12.15b and sec. 23) *and/or observed conditions within reference areas relevant to the plan area*; and …

DIVERSITY PLANNING COMMENTS (Proposed Directives Chapter 20)

A. Standards and Guidelines

Explanation: As discussed in the Standards section of these comments, the directives are weak on the use of standards. This problem is particularly evident as it relates to the ecological effectiveness of plan components for ecological sustainability and diversity. Missing from this conversation is any discussion of uncertainty and risk in the application of plan components for diversity, or the role of adaptive management in the selection of plan components. Nor is there any reference to "compliance" (as used in 36 CFR 219.9) and the implications of that phrasing in the selection of diversity plan components.

Recommendation: Standards should be required for listed species recovery actions and application of conservation measures. Regarding "situations where certainty is important," standards should be required as a means of meeting requirements to provide *necessary* ecological conditions for SCCs. Using standards to meet this diversity requirement is consistent with the rule's emphasis on using standards where certainty is needed to meet legal requirements.

In addition, we recommend that the directives include adaptive management criteria for changes to plan components based on new monitoring information that reveals unintended consequences of plan implementation on at-risk species.

B. Focal species should be included in Chapters 10 and 20

Explanation: The failure to assess and plan for focal species removes an important planning tool from the planning process, including in developing effective and testable landscape scale conservation strategies, and we remain flummoxed why this is the case.

Recommendation: Focal species should be explicitly incorporated into assessment and planning to ensure the ecological effectiveness of plans and plan components, and the directives should provide criteria for the selection of focal species for assessment and planning. Assessing, planning, and monitoring, for example, a connectivity-dependent focal species would encourage planners to consider a landscape planning strategy that includes key characteristics in composition (distribution of the focal species as a desired condition), structure (patch arrangement for the focal species), function (ability of focal species to move throughout and between plan areas), and connectivity (all of the above). Monitoring of focal species' status, defined as a hypothesis and around a desired distribution, would allow inference into the integrity of the ecosystem and test the effectiveness of plan components. We offer our services in working with the agency to develop an efficient focal species policy that enhances the effectiveness of the planning rule.

C. Additional species-specific plan components for at-risk species (sec. 23.13)

Explanation: The determination of the adequacy of ecosystem components in meeting the needs of species at risk will be a critical step. It must be supported by BASI, and cannot simply conclude that desired conditions of NRV for vegetation are sufficient for this purpose (as apparently suggested in section 23.13). If vegetation conditions are used, they must clearly include ones that are important to at-risk species. They must also be projected to occur after taking into account the entire set of plan components and future scenarios. This will require some kind of analysis.

Recommendation: The directives provide little or no guidance on how to evaluate the effects of plan components on at-risk species. They do little more than restate the requirement to "evaluate how well they (plan components) would sustain the ecological conditions that support at-risk species" (sec. 12.13(6)(b)). For most species, vegetation conditions alone will not suffice, and species evaluation must be a holistic rating of the species' "capability to persist over the long-term in the plan area" (36 CFR 219.9(c)). A crosswalk between the species requirements (identified in the assessment) and plan components would facilitate this evaluation.

D. Threatened and endangered species (sec. 23.13a)

Explanation: The language in sections 23.13a and 23.13b needs to be much stronger. The goal should be for plans to include adequate regulatory mechanisms to avoid listing or support delisting. This will mean mandatory plan components, primarily standards, as we discussed earlier.

Recommendation: The requirement in the rule to provide ecological conditions necessary to contribute to recovery means more than just "considering" conservation measures in recovery plans (sec. 23.13a(2)). Recovery plans arguably represent BASI, and every effort needs to be made to respond to anything in recovery plans that implicates management of the plan area (a crosswalk between the two is essential). In addition, conservation measures identified in prior project-level consultation should be considered for application at the plan level. This should be reflected in the list in section 23.13a.

We also suggest employing ESA 7(a)(1) conservation reviews as part of the biological assessment process to help structure these plan components, and consider crosswalks between this handbook and

FSM 2670. In addition, collaboration with FWS and NOAA-Fisheries should be part of the assessment process.

For proposed and candidate species, coordination with the listing agencies should include using the Policy for Evaluation of Conservation Efforts (PECE policy) to determine how plan components could assist conserving the species and avoid the need to list.

E. Species of conservation concern (sec. 23.13c)

Regarding the five aspects of the SCC evaluation process, we have the following comments.

Regarding a viable population:

- We stress the importance of science review (sec. 42.2) in this process, as discussed earlier.
- The principles associated with a viable population are relevant to assessments and should be provided in that chapter.
- Issues such of "confidence in the risk evaluations" can and should be addressed via the adaptive management process
- Issues associated with "sufficient distribution" must be addressed in the SCC assessment, yet there is no reference to this consideration in Chapter 10. We question if ecosystem components can be successfully built if there is no assessment information on sufficient distribution for SCC. Similarly, there is no reference to "resilient" or "adaptable" in section 12.5 assessments, again raising questions as to whether ecosystem plan components have adequately addressed the parameters necessary for a viable population. If these factors have been considered, it is not clear to the reader.
- "Resilient" is conflated with "redundancy," making the explanation difficult to follow without crosschecking the definition of redundancy. Redundancy is defined in the context of ecosystems, not individuals/species. This furthers the pattern of complicated ecological jargon that may or may not be effectively stepped down into effective plan components.
- "Resilient and adaptable" are the desired conditions for SCC; this does not appear to be sufficiently addressed in the directives.
- "Adaptable" suffers from the same problems, introducing the concept of "locally adapted ecotypes" which is confusing. We remind the agency that these are important viability determinations and planners cannot be expected to simply guess at the meaning of new jargon. As mentioned earlier, the directives need a more robust and meaningful discussion of adaptation for ecosystems and populations of SCCs.
- Subsection 23.13c(1)(f), regarding species distributions, is also confusing and inadequate in that it simply repeats language from the rule but does not clarify how diversity of habitat types is directly linked to the viability of SCCs, and the directives provide no such linkage in our reading. Similarly, connectivity plan components may result in viability protection for SCC if and only if SCC connectivity needs are affirmatively built into those plan components and proactively addressed in the assessment.

Regarding the three possible outcomes of evaluating plan components in subsection 23.13c(2):

- Discussion of methods should occur earlier in section 23.13c, not in the outcomes subsection, and as discussed there needs to be more useful guidance on methods.

- The outcomes are overly simplified and it is unreasonable to portray the determinations as not including degrees of uncertainty and risk, a matter that needs to be cross-walked with Chapter 40 to enable effective adaptive management.
- The responsible official should document the basis for these determinations in the record of decision, not in the "planning record."

DIVERSITY MONITORING COMMENTS (Proposed directives Chapter 30)

A. The objective (sec. 30.2) of the monitoring section is too narrow

Explanation: The rule articulates the objectives of monitoring, including informing the management of resources on the plan area, testing relevant assumptions, tracking relevant changes, and measuring management effectiveness and progress toward achieving or maintaining the plan's desired conditions or objectives. The monitoring directives should be built around these types of monitoring goals.

Recommendation: The directives should define "adaptive management." We suggest that the directives define and discuss the meaning of "measuring management effectiveness" as this is clearly at the heart of the directives and the adaptive management process. In particular, the directives should clarify how monitoring will address the effectiveness of standards and guidelines (sec. 32.1). There is also the matter of "compliance" as used in 36 CFR 219.9, which is related to effectiveness, but is not referenced in Chapter 30. To fulfill these gaps the directives should be refined to better align Chapters 20 and 30, as discussed throughout this comment.

B. Provide better monitoring examples

Explanation: Chapter 30 generally does a good job of tying monitoring indicators to key ecosystem characteristics – better than Chapter 20 does of tying plan components to them. The indicators in the exhibit in section 32.1 are good examples of key ecosystem characteristics that should be part of plan components and should be monitored. However, the plan components in the example are very poor. It would be difficult to tell if the desired conditions are being achieved. This monitoring example should include good examples of plan components (and they could be derived from these monitoring indicators).

Recommendation: The example should provide more discussion on the relationship between indicators and key ecosystem characteristics. It appears that characteristics are being used as monitoring indicators but not used as plan components, but the measurable attributes should be in the plan component itself rather than simply in the indicator. In other words, why not embed the quantitative attributes (e.g., the NRV conditions for the dominant characteristic) into the plan components themselves? Is this not the point in developing key ecosystem characteristics? The example raises more questions than it provides answers, particularly in how this program would test underlying plan assumptions and be used to modify plan components.

Monitoring questions must address underlying plan component assumptions, yet we are not clear on how this will be accomplished given the failure to document these assumptions throughout the planning process. In our experience, it seems that these monitoring questions will be an afterthought

if they are not addressed directly during the assessment and planning phases, as discussed. An example, provided in an adaptive management context, would be useful. Regarding uncertainty, it is important that the monitoring questions inquire into unexpected ecological effects, as discussed earlier in these comments. A monitoring program that only seeks to measure what is expected is not valuable in adapting to uncertainty.

C. Monitoring ecological conditions for ecosystems and at-risk species (Sec. 32.13b)

Explanation: The draft directives state, "Monitoring questions and indicators should measure the effectiveness of plan components…where practical…to contribute to the recovery of threatened and endangered species, conserve proposed and candidate species, and maintain viable populations of species of conservation concern within the plan area." First, the phrase "where practical" should be removed in that passage. In addition, monitoring questions and indicators are stressed for the selected ecological conditions and key ecosystem characteristics. Here, effectiveness is measured at the species level, not at the level of ecological conditions. Monitoring the status and trend of a key ecosystem characteristic will not reveal the effectiveness of that characteristic, i.e. whether at-risk species are recovered, conserved, or viable, or are using the selected ecological conditions or key ecosystem characteristics. As discussed, the assumptions associated with the coarse/fine filter conservation strategy need to be tested and verified, and that should be done via species level monitoring. Validation of assumptions is a higher priority in cases where the ecosystem plan component is more uncertain in its ability to conserve the species (i.e. higher risk of viability loss), suggesting that species monitoring can be focused on those cases of high uncertainty and tenuous assumptions.

The best available scientific information about application of the coarse-filter approach indicates that the coarse-filter approach is unlikely to provide a reliable basis for multispecies conservation planning.[18] Only limited testing of the approach's validity has occurred,[19] and the monitoring of a select group of species is necessary to determine the efficacy of coarse-filter approaches.[20] [21]

Recommendation: Clearly species monitoring is necessary for compliance with 36 CFR 219.9 for SCC; therefore plans must provide certainty that it will occur, and the directives must ensure this. Species monitoring is referenced yet not encouraged in section 32.13b where it considers "selecting monitoring questions and associated indicators for ecological conditions and key ecosystem characteristics at both the ecosystem and *species-specific levels*…" As we have discussed, focal and at-

[18] Cushman, S. A., K. S. McKelvey, C. H. Flather, and K. McGarigal. 2008. Do forest community types provide a sufficient basis to evaluate biological diversity? Frontiers in Ecology and the Environment 6:13–17.

[19] Noon, B. R., K. S. McKelvey, and B. G. Dickson, 2009. Multispecies conservation planning on U.S. federal lands. Pages 51–84 in J. J. Millspaugh and F. R. Thompson, III, editors. Models for planning wildlife conservation in large landscapes. Academic Press, New York, New York, USA.

[20] Committee of Scientists. 1999. Sustaining the people's land: recommendations for stewardship of the national forests and grasslands into the next century. USFS, Washington, D.C., USA.

[21] Flather, C. H., K. R. Wilson, and S. A. Shriner. 2009. Geographic approaches to biodiversity conservation: implication of scale and error to landscape planning. Pages 85–121 in J. J. Millspaugh and F. R. Thompson, III, editors. Models for planning wildlife conservation in large landscapes. Academic Press, New York, New York, USA.

risk species should be considered as key compositional characteristics of ecosystems during assessment, planning, and monitoring, which would enable changes in their distribution to be monitored to test for the effectiveness of plan components. The directives need to require monitoring in relation to the rule's specific viability requirements of long-term persistence with sufficient distribution (36 CFR 219.19). The intensity of population monitoring would need to be greatest where risk or uncertainty is highest.

The monitoring program should make use of "triggers" or using the directives language, "structured hypothesis testing" (Chapter 40), for they are the same thing. Unfortunately Chapter 30 does not refer to "structured hypothesis testing", but doing so would allow for rational testing of assumed causal relationships between plan components and ecological effects, and between ecosystem plan components and species responses. According to the Preamble, triggers were deemed not appropriate to require of all monitoring programs in the rule (preamble, 77 Fed. Reg., p. 21231), but they are not precluded and are warranted and necessary in this case.

We encourage the use of climate indicators in section 32.13b, including climate indicator species ("indicators that may be among the first affected by stressors, like climate change"). This appears to be a good role for focal species, but could also apply to at-risk species for which there is a concern over climate impacts.

D. Focal species selection (sec. 32.13c)

Explanation: The role of focal species was unclear in the rule and remains unclear in the directives, contradicting the role of the directives. Focal species are not referenced in Chapters 10 or 20. This implies that the FS does not intend for focal species status to be assessed, nor will plan components be developed to achieve their desired status. Failing to do so will make it difficult to measure the effectiveness of plan components, because the focal species relationship to ecosystem integrity will not have been considered when those components were developed. Even if one argues that we shouldn't be "managing for" focal species, it remains important to be cognizant of their role in the planning process throughout the planning phases, for effective adaptive management to occur.

Chapter 30 introduces the focal species concept; however, the example provided contradicts the way the directives present focal species. In the example (sec. 32.13 a-c – Exhibit 01) the desired condition outlines key characteristics explicitly for conservation of red-cockaded woodpecker. Ignoring the fact that RCW is an at-risk species, to actually do this, it would seem that focal species would need to be addressed in Chapters 10 and 20. Interestingly, Chapter 10's 12.14 Exhibit 01 calls for the assessment of "keystone" species, a term also used in conjunction with focal species in Chapter 30. These terms need to be used consistently throughout the directives. Focal species, focal species that are also at-risk species, and at-risk species should all be added to section 12.14 Exhibit 01 as compositional characteristics of ecosystems, and addressed elsewhere in Chapter 10 and 20 related to monitoring the effectiveness of plan components.

Recommendation: Defining and predicting the "status" of focal species through the application of plan components is of utmost importance if they are to be used effectively for their stated purpose, and to facilitate "structured hypothesis testing." Focal species are "believed to be responsive to ecological

conditions", thus solidifying their use in hypothesis testing. To do so requires ecological condition plan components quantifying their status as part of desired conditions, objectives, etc.

While the directives include SCC as candidates for focal species (sec. 32.13c), they don't encourage their use. With the rule asking for a "small subset" of species, the directives should state that SCC should be a priority for selection as focal species if they are responsive to management actions. It's good that the example in section 32.13c (Exhibit 02, p. 20) does this. The relationship between focal species and SCC should be discussed in conjunction with Exhibit 01, p. 19.

One focal species, beaver, is particularly important for climate change adaptation, responsive to management of riparian areas, easy to monitor, and an indicator of the presence of a large range of associated species. It would be an example of a species which, while not at risk, is of broad utility and therefore would be a candidate for a limited list of focal species.

Watersheds and Water

I. Introduction

To a great extent, the ability of the planning directives to maintain and restore watershed integrity and water resources will depend on how well the directives address many of the other issues raised in these comments.

- Standards – Every forest plan needs to have forest-wide and management area-specific standards to protect and improve water quality and watershed health. Standards are an integral part of the science-based aquatic conservation strategies developed through the Northwest Forest Plan, Sierra Nevada Framework, PACFISH, and INFISH. Strong standards are especially important to ensure that Riparian Reserves and other riparian management areas are adequately protected and restored.
- Roads – In many national forests, roads are the primary cause of water quality degradation. Roads trigger landslides, increase erosion and stream sedimentation, and accelerate run-off during rain storms. Conversely, restoration actions like road decommissioning that reduce road density can significantly improve water quality and watershed health. Decommissioning of high-risk roads through the Legacy Roads and Trails Remediation program has been shown to reduce stream sedimentation by 80 percent (Wilderness Society and Wildlands CPR 2013).
- Wilderness – An analysis by The Wilderness Society found a strong correlation between designated Wilderness Areas and healthy watershed conditions (Anderson et al. 2012). Using the Forest Service's Watershed Condition Classification of 15,000 sixth-field watersheds, the analysis found that 80 percent of national forest land within designated Wilderness is located in properly functioning watersheds. In comparison, just 38 percent of national forest lands outside Wilderness and Inventoried Roadless Areas is in properly functioning watersheds.
- Recreation – Recreational activities can have seriously impacts on water quality if they are not properly managed. Off-road vehicles should not be allowed in sensitive meadows or wetlands or to run across streams. Camping areas and access routes located along rivers and lakeshores need to be carefully regulated or in some cases re-located to less sensitive ground.
- Grazing – Livestock grazing is one of the most harmful – and reversible -- impacts on riparian areas. Unless properly regulated, grazing can eliminate willows and other natural vegetation that stabilize stream banks, shade streams, and provide cover habitat for fish. Livestock also trample fragile stream banks and pollute

the water. However, riparian conditions and water quality can improve quickly once livestock are excluded or restricted.

- Minerals – Mining can have profoundly negative and long-lasting impacts on water quality. For example, selenium pollution of streams from phosphate mining in Idaho's Caribou-Targhee National Forest has imperiled the rare Yellowstone cutthroat trout. Oil and gas leases in the Thompson Divide area in Colorado's White River National Forest threatens the pure water of several streams that flow into the North Fork Gunnison River and Colorado River.
- Species Diversity – The national forests are the home, and sometimes the final refuge, for many imperiled fish species such as salmon, steelhead, bull trout, and cutthroat trout, as well as innumerable aquatic invertebrates that provide sustenance for fish. National forest streams and rivers provide 50 percent of the nation's salmon spawning and rearing habitat.
- Climate Change – Aquatic resources will be profoundly affected by climate change. Fish species like bull trout that require cold water habitat will be imperiled by warming stream temperatures. Reductions in winter snowpack will reduce summer and fall water flows, providing less water for downriver irrigation, municipal drinking water, and fish habitat. More extreme storm events will increase flooding and the risk of road washouts, landslides, stream sedimentation, and degradation of spawning habitat.
- Wild and Scenic Rivers – The headwaters of many great American rivers are located in the national forests. Wild and Scenic River designation protects these rivers from dams and other harmful development, while enhancing their recreational, ecological, and other "outstandingly remarkable" values.

II. Issues and Recommendations

A. Selection criteria are needed for Priority Watersheds

Explanation: We strongly support the Forest Service's Watershed Condition Framework (WCF) and the planning rule's requirement to identify Priority Watersheds for maintenance and restoration (36 CFR 219.7(f)(1)). However, we are concerned that the draft directives do not provide criteria for the selection of Priority Watersheds. Section 22.31 advises planners to "consider the WCF approach or another approach with similar purpose" and supplies a link to the WCF guidebook on the Forest Service publications website. While the WCF publication does contain some useful criteria for Priority Watershed selection, we believe that including criteria in the directives would provide more useful, reliable, and readily accessible guidance.

Carnefix and Frissell (2010) explain the scientific foundation for establishing criteria for priority watersheds in forest planning.[22] They recommend that priority watersheds should be those that 1) provide the highest-quality habitat for aquatic-associated or -dependent (including terrestrial) species, 2) are well-distributed across the planning unit landscape, 3) accommodate the needs of all native riparian/aquatic dependent species, and 4) together make up a network that provides or restores biological and biophysical landscape connectivity. (Page 16).

Recommendation: The directives should provide specific criteria for selection of Priority Watersheds, based on the recommendations of Carnefix and Frissell (2010).

[22] See Carnefix and Frissell, 2010. Science for Watershed Protection in the Forest Service Planning Rule: Supporting Scientific Literature and Rationale. Pacific Rivers Council.

B. Clarify the role of Priority Watersheds in the forest planning and WCF processes.

Explanation: The directives should clarify the relationship between the forest planning process and the WCF process with regard to identification of Priority Watersheds. Presumably, the Forest Service intends to complete the identification of Priority Watersheds through the WCF process for all national forests within the next few years, long before many forest plans would be revised under the new planning rule. However, the criteria for Priority Watershed selection in the WCF process are vague, designed for a three- to five-year timeframe, and seemingly based more on budgetary constraints than on ecological factors. Short-term criteria should not drive the identification of priority watersheds for 15-year land management plans designed in part to restore, maintain, and protect aquatic elements and watersheds.

Recommendation: The directives should explain the relationship between the WCF Priority Watersheds and those identified pursuant to the planning rule, and clarify that plans should identify Priority Watersheds based on the long-term ecological needs of aquatic resources.

C. Require plan components to guide restoration management activities in Priority Watersheds

Explanation: Section 22.31 states that plans "should" develop plan components for Priority Watersheds and that "identification of a priority watershed in the plan does not by itself guide management activities." This direction should be strengthened to ensure that only management activities that promote restoration and do not cause degradation of Priority Watersheds will be allowed.

Recommendation: Revise Section 22.31 to require ("must" develop) plan components that provide clear guidance to ensure that management activities restore and do not degrade Priority Watersheds.

D. Clarify that Priority Watersheds must be protected after they are restored.

Explanation: Section 22.31 does not provide clear guidance on the long-term management direction for Priority Watersheds. It states that priorities "could change quickly" and that changes in priority could be done through an administrative change rather than a plan amendment. We are concerned that once a Priority Watershed is restored (moves from "at-risk" to "properly functioning" condition), it will no longer have any special status and the watershed could become degraded again through harmful management activities or neglect.

Recommendation: Revise Section 22.31 to require that once a Priority Watershed is restored, plan components, including standards and guidelines, ensure that it is managed to maintain or improve its "properly functioning" condition and not allow management activities that could degrade the watershed condition.

E. Adequate water flows and levels are an integral component of watershed integrity.

Explanation: In many national forests, especially in relatively arid portions of the Southwest and Intermountain West, aquatic resources suffer from inadequate water flows due to excessive water withdrawals for irrigation and other uses. Section 23.12c addresses this problem by including direction

to consider plan components to maintain or restore water quantity "necessary to sustain ecosystems into the future." Section 23.12c(1)(c) provides specific guidance on quantifying water needs and specifying appropriate environmental flows and levels for aquatic ecosystems and species.

Recommendation: We strongly support this proposed direction to ensure adequate amounts of water to maintain and restore the integrity of aquatic ecosystems and species.

F. Incorporate the concept of watershed refugia into the directives.

Explanation: Watershed-scale refugia are important for the conservation of freshwater species in dynamic and altered landscapes. Watersheds with relatively limited human disturbance often provide regional refuge to sensitive species that are otherwise in regional decline; they also can serve as anchors of potential future restoration and reconnection efforts (Carnefix and Frissell, 2010). For example, Frissell and Carnefix (2007) reported significant association of higher red densities of Threatened bull trout (Salvelinus confluentus) in Rock Creek (Montana) subwatersheds with high proportions of Wilderness and/or Inventoried Roadless Area acres. Similarly, The Wilderness Society, in a recent analysis, demonstrated that watershed condition was much higher in watersheds with more wilderness acres (Anderson et al, 2012). Protecting relatively intact watersheds is even more important in this day and age when we are facing rapid climatic and related changes.

Carnefix and Frissell (2010) recommend that Watershed-Scale Landscape Refugia be designed to perform several key functions in the context of larger landscape conservation design and freshwater resource protection, such as:

- Ensure some watersheds in every region remain able to benefit from natural disturbances such as wildfire;
- Ensure blocks of habitat with existing highest value—and the populations of sensitive and declining species inhabiting them—are maximally protected;
- Provide a demographic source of locally adapted, genetically appropriate colonizers to populate surrounding habitats as they become suitable through restoration and natural recovery processes; and
- As a crucial element of monitoring and adaptive management, provide relatively natural, unaltered examples of land-aquatic ecosystems that remain intact to serve as a benchmark and quasi-controls to evaluate the success of active and passive restoration and management treatments and programs on other parts of the landscape.

Recommendation: Provide direction that relatively intact landscape scale-watersheds should be recognized and protected in the forest plan by requiring that the most intact watersheds are included within the selection of priority watersheds, and considering:

- Using management or geographic areas to delineate watershed refugia and establish plan components, including standards and guidelines, that maintain the watershed refugia in an undeveloped and natural state with little human interference; or
- Designating watershed refugia as designated areas for the purposes of protecting and studying undisturbed areas, anchoring future restoration efforts, and conserving aquatic biodiversity.

Climate Change

The Forest Service has been a leader in understanding, researching, and developing policy mechanisms to deal with the impacts of climate change. We are disappointed that the directives are so woefully inadequate in their guidance for integrating climate change into forest planning and in cross-walking and integrating other Forest Service climate change frameworks and documents, including the National Roadmap for Responding to Climate Change.

Definitions:
The definitions section within the "zero code" chapter directives contains only one reference to climate change, under the definition of "connectivity." The directives would benefit from inclusion of a definition of climate change that accurately captures the speed, severity, and anthropogenic nature of this problem. We were particularly surprised to find that the definition of "stressors" does not mention climate change, since both the rule itself and the directives repeatedly include climate change among the list of stressors (see for instance section 12.32). Given the important role that "stressors" play in assessment and in the development of plan components, it is critical that the final directives include climate change in the definition.

Several other important terms are also left undefined within the directives, and their omission is likely to lead to confusion and misinterpretation. Among these are "adaptation," "resistance," "resilience," "response," and "re-alignment." All of these are terms of art in climate change parlance, and are used in other Forest Service documents regarding climate change response, including the 2008 "Strategic Framework," the 2010 "National Roadmap," and the 2011 "Guidebook for Developing Adaptation Options." The potential for confusion is heightened by the fact that "adapt" and "adaptable" are also used in their general ecological and evolutionary senses within the document, so it is unclear whether references to the terms are meant generally or in a specific climate change context. Similar potential for confusion exists with respect to the term "mitigation," which is also undefined in the directives and can refer generally to amelioration of conditions, to greenhouse gas reduction in climate change discussions, or to reduction of adverse impacts in the NEPA context. We strongly recommend that definitions be provided for these terms.

Chapter 10- Assessment

We had hoped that the Assessment chapter of the directives would lay the groundwork for assessment of climate change impacts to national forests with clear direction for incorporation of these considerations into discussions of ecosystem integrity, impacts to plant and animal community diversity (including at-risk species and species of conservation concern), and other relevant assessment areas. We had expected that this chapter would build on the good work of the 2011 "Guidebook" but with more specific direction relevant to the planning process as envisioned in the 2012 Rule. Unfortunately, the climate change discussion in the Assessment chapter does little more than repeat the language from the planning rule itself, with very little guidance on how climate change information is to be incorporated.

Virtually absent from the directives is any clear description of the particular exposure factors associated with climate change, such as higher mean temperatures, hotter high temperatures, reduction in frost-free days, changing proportions of precipitation falling as rain vs. snow, occurrences of extreme precipitation events, alterations in snowpack, and lengthier periods of drought (to name a few). Many of the Key Ecosystem Characteristics for Composition, Structure, Function and Connectivity (12.14 Exhibit 01) will be sensitive to one

or more of these specific types of exposures, but there is no guidance on how to select, evaluate, or rank these. Climate-related stressors will also interact with other stressors (for instance, warmer winters may facilitate spread of invasive or noxious species that are held in check by winter die-off, including bark beetles which have impacted millions of acres of forests). Societal responses to climate change will also likely compound stresses to species and ecosystems (some examples include increased water withdrawals from stream systems in response to drought and heat, and habitat modification to reduce fire risk at the wildland-urban interface). We believe that utilization of a planning framework like Open Standards can be very helpful in illustrating and ranking the various threats to a conservation target, like a habitat type or an individual species; unfortunately no framework or process whatsoever is delineated in the directives.

We are also wary of language within the "Ecosystem Integrity" section of the assessment chapter which states "**Where information is available**, the responsible official should consider the influence of climate change. . ." (emphasis added). It has been our experience, in evaluation of many types of assessment and planning documents, that the existing wealth of climate change data, model projections, and impact assessments is frequently ignored by planners, and the problem is often dismissed with a vague reference to "uncertainty." We are concerned that conditional language like "Where information is available" is tantamount to allowing planners an excuse to avoid the sometimes difficult task of finding and evaluating climate change information that may be applicable to the situation at hand. We see a high potential for this kind of omission to occur, given that the directives have provided so little guidance on where to find climate change information and how to incorporate it into assessment. Including this conditional language is unnecessary given the rule's clear requirements for the application of best available scientific information. Furthermore, uncertainties and information gaps associated with climate impacts on resources should be explicitly addressed via the adaptive management and monitoring programs outlined in the directives.

Sections 12.3 (Assessing System Drivers and Stressors) and 12.5 (Identifying and Assessing At-Risk Species in the Planning Process) are similarly lacking in direction as to how climate change information should be incorporated. Guidance is sorely needed in these areas:

1) Identification of species of conservation concern (Section 12.52). Climate change is never mentioned within this section, and while "stressors" are mentioned under part 5a, there is no explicit direction that climate change be considered among these because the definition of "stressor" currently does not include climate change.

2) Determination of which species require "fine-filter" treatment due to climate change factors that would be missed in a coarse-filter assessment of ecosystem integrity. An example of this would be a species that is susceptible to a disease that is projected to become more widespread or severe under climate change projections, and is thus potentially more vulnerable than the projected conditions of its habitat would imply. The current language in section 12.55 on integrating coarse and fine filter considerations is insufficient to accomplish this important objective.

The directives are also very unclear within section 12.4, "Assessing Carbon." The directives state that one of the purposes of the baseline carbon assessment is to "assess issues associated with climate change." Nowhere do the directives indicate what those issues might be, let alone how the baseline carbon assessment will guide those considerations. Carbon sequestration and storage is an important ecosystem service provided by forests. The directives should provide guidance to planners on how to assess carbon and develop plan components to optimize carbon sequestration and storage in relation to other ecosystem services and plan goals.

Chapter 20- Land Management Plan

Since the parameters for assessing climate change impacts are poorly defined in the directives, it follows logically that the Land Management Plan chapter also offers little direction on how best to integrate climate change adaptation into plan components.

Because the directives had not articulated an integrated manner for incorporating climate change impacts into threat assessment, or established a framework for evaluating and selecting among various adaptation responses (such as resistance, resilience, response, and realignment), the directives fail to provide direction on how plan components can contribute to these responses. In fact, the directives imply a sense of futility on the part of the Forest Service, as evidenced by these passages in the sections defining Natural Range of Variation and discussing landscape design considerations:

> "The coarse-filter approach uses NRV as a framework, because native species evolved and adapted within the limits established by natural landforms, vegetation, and disturbance patterns before extensive human alteration. NRV is a tool, because maintaining or restoring ecological conditions similar to those under which native species have evolved would offer good assurance against losses of biological diversity and would maintain habitats for the vast majority of species in an area, **subject to factors outside of the Agency's control, such as climate change**" (§23(e), emphasis added).
>
> "Examples of providing plan components for [landscape patterns that promote long-term ecological integrity and ecosystem diversity] include: a. Designing ecosystem (coarse-filter) connectivity through a conservation design based on landscape patterns created under ecological processes and landscape disturbance regimes that occurred before extensive human alteration **if appropriate considering the influence of climate change"** (§23.11b(3)(a), emphasis added).

The weakness of this language is very disheartening in light of the good work that the Forest Service has already done on integrating climate change into management, and the promising language from the rule that implied climate change would be fully incorporated into assessment and management. The other mentions of climate change within Chapter 20 are hardly more illustrative, as they are mainly reiterations of rule language with little further guidance on how to take climate change into account.

We urge the Forest Service to revise the Land Management Plan chapter to give forest planners a framework for selecting among resistance, resilience, and response options, and for incorporating these into the Desired Conditions and Objectives for the various ecosystem integrity and diversity requirements, and following from these, Standards and Guidelines as appropriate to achieve adaptation goals for biodiversity in national forests and grasslands. We also note that the "Goals," being "optional plan components . . . usually related to process or interaction with the public" (sec. 22.16) may be a natural place to advance publication and outreach in accordance with the Strategic Framework and Scorecard.

Chapter 30 – Monitoring

We are pleased to see that "measurable changes on the plan area related to climate change" are required in the monitoring program (sec. 32.13e). The rest of the discussion of climate change monitoring is much weaker, with language like "may relate to," "may consider," and "has the discretion to identify" when

discussing interactions with other stressors, and vulnerabilities to climate change. However, we reiterate that in the absence of an assessment and management framework in support of climate change adaptation for ecosystem integrity, diversity, and at-risk species, it is unclear how well the monitoring objectives will be tied to management or the protection of biodiversity and natural resources. We recommend that the directives more explicitly establish how the various monitoring strategies discussed in the Roadmap, including systematic monitoring, targeted monitoring, and effectiveness monitoring, can advance understanding of how well objectives are proceeding toward desired conditions, and how management may need to be altered to protect species and habitats in the face of an array of stressors.

Chapters 40 & 60

There is no mention of climate change in the chapters on Key Processes Supporting Land Management Planning or Forest Vegetation Resource Planning. These omissions are a major weakness in the directives, as Chapter 40 explains the Adaptive Management Framework, guides consideration of Best Available Scientific Information, and outlines procedures for public participation. Chapter 60 discusses issues of timber management, which are clearly both affected by climate change and can be an interacting stressor with respect to habitat quality and persistence of species of concern.

Public Participation – Chapter 40

I. Introduction

Since the 1980s, the forest planning process has been one of the principal opportunities for members of the public to become involved in shaping the future of national forest management. The National Forest Management Act (NFMA) requires the Forest Service to "provide for public participation in the development, review, and revision of land management plans…" (16 USC 1604(d)). The NFMA also requires the Forest Service to insure that forest plans "are prepared in accordance with the National Environmental Policy Act [NEPA]…" (16 USC 1604(g)(1)). Federal regulations on implementing NEPA require all federal agencies to integrate NEPA into their planning processes (40 CFR 1500).

In developing the 2012 planning rule, the Forest Service went out of its way to provide ample opportunities for public involvement. The agency held 33 regional roundtables, four national roundtables, and a science forum prior to release of the draft rule, and another 28 regional forums after release of the proposed rule. Throughout the rulemaking process, the agency did an exemplary job of integrating NEPA into the rulemaking process. The agency issued a scoping notice at the outset of the rulemaking process that presented principles and questions and invited public response. The draft EIS contained a range of alternatives in response to the initial public feedback.

Like the rulemaking process, the 2012 planning rule provides numerous opportunities for public participation, encompassing the Assessment, Planning, and Monitoring stages of the adaptive planning process (36 CFR 219.4(a)). The rule requires the Forest Service to "engage the public … early and throughout the planning process…, using collaborative processes where feasible and appropriate" (36 CFR 219.4(a)(1)). The agency must encourage public participation at the local, regional, and national levels (36 CFRR 219.4(a)(1)(i)). The planning rule also specifies that "plan revision requires preparation of an environmental impact statement" (36

CFR 219.5(a)(2)(i)). However, the planning rule otherwise does not clearly lay out the way in which NEPA will be integrated into the forest planning process.

II. Issues and Recommendations

A. Integrate NEPA public involvement into the planning process.

Explanation: The public participation section of the draft directives (Sec. 43) contains virtually no mention of the NEPA process. In fact, NEPA is notably omitted in the directives' statement that "[p]ublic participation activities described in this handbook fulfill public engagement requirements of both the planning rule and the NFMA" (43.1, final sentence), which suggests that Chapter 40 may not fulfill the public engagement requirements of NEPA.

We consider the absence of guidance on integrating NEPA into the forest planning process under the 2012 rule to be a serious omission. We think it is very important that the directives provide much more clarity about how the public participation requirements of NEPA and the planning rule should work together. Otherwise, we fear that both planners and the public will be confused and frustrated about when and how public input should be requested, made, and considered.

Recommendation: Section 43 should be thoroughly revised to ensure that NEPA is fully and efficiently integrated into the planning process for public participation. Clarify that Chapter 40 (in concert with applicable NEPA regulations) is intended to fulfill public engagement requirements of NEPA, as well as NFMA and the planning rule.

B. Clarify when and how NEPA scoping occurs during the planning process.

Explanation: The CEQ regulations require the Forest Service to integrate NEPA "at the earliest possible time" in the forest planning process (40 CFR 1501.2).[23] The first step of the NEPA process is the initial public notification and commencement of the "scoping" process, which is "an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7).[24]

Neither the planning rule nor the directives are clear about when the NEPA scoping process begins or how long it continues in relationship to the forest planning process. The planning rule specifies that the first "formal public notification" in the planning process is to initiate a plan revision or amendment (36 CFR 219.16(a)(1)). Is that when the NEPA scoping process begins as well? Can there be an "informal" public notification of public participation opportunity in the Assessment stage before the

[23] The regulations state, "Agencies shall integrate the NEPA process with other planning *at the earliest possible time* to insure that planning and decisions reflect environmental values, to avoid delays later in the process, and to head off potential conflicts" (40 CFR 1501.2, emphasis added).

[24] The Forest Service's own NEPA regulations simply state, "Scoping shall be carried out in accordance with the requirements of 40 CFR 1501.7. Because the nature and complexity of a proposed action determine the scope and intensity of analysis, no single scoping technique is required or prescribed" (36 CFR 220.4(e)(2)).

"formal" plan initiation? If NEPA scoping begins at the start of the plan Assessment, does the scoping period continue throughout the Assessment and into the Planning stage?

This is an especially important issue for members of the public who are not able or willing to participate in locally-based "collaborative" processes, but do want to engage through the NEPA process. Many people who live too far away or do not have enough spare time to participate in an intensive collaborative process should have a fair opportunity to engage early in the process of determining the significant issues or the "need for change" that should be addressed in forest planning. Those people should not be excluded from early opportunities to participate in the planning process when key issues are being scoped.

Recommendation: The directives should make clear when the NEPA scoping process begins and how long it continues, in relationship to the forest planning process. Consistent with the CEQ regulations, the NEPA scoping process should begin as early as possible in the forest planning process.

C. Better define the appropriate role of collaboration in forest planning

Explanation: Section 43.11 of the draft directives provides extensive guidance on the role of collaboration in forest planning. Collaboration is portrayed as "the most intensive level of public participation," on a four-level scale with collaboration at the highest level of public engagement, followed by "involve," "consult," and "inform." This hierarchy of participation is based on a 2007 CEQ publication, "Collaboration in NEPA," which is also referenced in the planning rule's definition of "collaboration or collaborative process" (36 CFR 219.19).

We are concerned that the emphasis on "collaboration" – as it is described in the draft directives – could have negative effects on participation by the vast majority of citizens who might be interested in the forest planning process. Very few people have the time and energy for an "intensive" level of public participation, such as the Forest Service is attempting in the Nez Perce-Clearwater plan revision. While some non-participants may feel that their views and interests are being adequately represented by participants in a forest plan collaborative, others will feel unrepresented, excluded, and alienated from the process.

Focusing public involvement on a small group of intensive participants could also send the wrong message to the urban youth, low-income populations, and underrepresented minorities that the Forest Service is hoping to engage in the planning process. If the perception is that a small group of traditional stakeholders is in control of the process, it will be much more difficult for the agency to overcome distrust and convince potential newcomers that their voices will really be heard and can make a difference. The best way to reach and converse with many of these new voices is to <u>go to them</u> – to their group meetings, their schools, their churches – rather than expect them to send a representative into a series of intensive meetings and workshops about forest planning.

In addition, we question whether it is realistic to form a collaborative group specifically to work on a forest plan revision, except in rare circumstances. Collaboration takes time to build trust and common understanding among diverse interests and viewpoints. A key objective of the Forest Service, on the other hand, is to speed up the planning process so a plan revision can be completed within two to four years (see proposed FSM 1921.04d(3)f)). The large scale of forest planning is also likely to be a

significant barrier in many cases, forcing potential collaborators to drive long distances to attend multiple meetings at a central location. While video-conferencing is becoming more available, it still makes a poor alternative to face-to-face meetings as a means of finding common ground on difficult issues.

We do not want to discourage the Forest Service from supporting or participating in collaborative processes. Clearly, collaboration has transformed public participation in national forest management for the better in many situations, such as the two dozen CFLRP projects across the country. In some situations, it may make sense to engage an existing collaborative group in a forest planning process, perhaps focusing on a particular geographic area or on a particular issue like fuel reduction or fish habitat restoration.

We also think that the Forest Service should be able to talk about taking a "collaborative" approach toward public participation in forest planning without implying that it will primarily consist of the high-intensity type of involvement that is indicated in the draft directives. Rather, the entire planning process under the 2012 rule can and should be described as a more collaborative model of forest planning, meaning that public involvement is encouraged early and throughout the three stages of the adaptive planning process, with opportunities to interact with agency personnel and other people holding diverse viewpoints, and agency plans clearly reflect public input. Members of the general public are more likely to feel inclined to participate in a planning process that provides meaningful and convenient options for involvement. The Forest Service should seriously consider management alternatives submitted by the public during scoping, even if they are not the product of a diverse stakeholder process.

Recommendation: The directives should re-frame and re-define public participation in forest planning so that it is less hierarchical and intimidating to the general public. The directives should make clear that the "most intensive" form of public participation does not mean that it is the most desirable form, or that forming a high-intensity collaborative group is the only way to design a meaningful public engagement strategy with multiple options for engagement and avenues to exchange ideas.

D. Require a defined comment period of no less than 30 days on a draft assessment.

Explanation: The assessment is critical as it is the information base that informs the plan revision or development. Although we applaud the outreach and public participation concepts related to the assessment articulated in the planning rule, the proposed directives language needs to be strengthened by ensuring that the public has an opportunity to review and comment on a draft assessment. The comment period is not intended to replace public participation during the development of the draft assessment, but is necessary to give the public at one point in time the opportunity to review a completed draft of the entire assessment document. The comment period should ideally be two months but at least 30 days.

Recommendation: In 43.17a, require a defined comment period no less than 30 days on a draft assessment.

E. Require that all GIS data and models are made available to the public at the beginning of review, comment, and objection opportunities.

Explanation: It is often difficult for the public to access digital data and analytical/GIS models fundamental to the review of documents during open comment periods. Often, we are told that we need to file a Freedom of Information Act request to acquire data, even though it is clear that the request would not be filled within the commenting window. Hence, in furtherance of the planning directives' themes of using Best Available Science, enabling effective public participation, and facilitating transparency, it is important that the final directives require that data, models, methods, and parameters are made available to the public at the start of public review and comment periods. *Recommendation:* Require that data (including GIS and other digital data) and analytical models, methods, and parameters are made available to the public at the latest when 1) the draft assessment is made available for public review and comment, 2) the draft plan and EIS are made available for public review and comment, and 3) the clock starts on the objection process.

Objection Process - Chapter 50

I. Introduction

The right to petition the government for redress is a fundamental democratic right. The 2012 Planning Rule provides for this right through a pre-decisional objection process, which is a change from the traditional post-decisional administrative appeal. While we remain skeptical that there is a need to shift to pre-decisional objections, or that this process will result in administrative efficiencies as some claim, the process outlined in FSH Chapter 50 nonetheless adequately provides for public engagement in the LRMP revision and amendment process. We provide the following specific feedback and recommended changes to this Chapter.

II. Issues and Recommendations

A. Required public review of changes to forest plans based on the resolution of objections of others. (FSH Chapter 50 generally)

Explanation: Chapter 50 at some point should address the rights of objectors and non-objectors in the following circumstance: a party chooses not to object to a plan/revision/amendment or portion thereof, but due to settlement of the objections of another party, the decision maker changes aspects of the plan/revision/amendment that the first party now finds objectionable. The first party should be permitted to object to this change, or at least seek judicial review. While this is generally the case law in the Ninth Circuit, it may not be the case everywhere, so the Directives should address it by explicitly giving such an aggrieved party the ability to either administratively or judicially challenge the changed provision.

Recommendation: Provide the requested clarifying language.

B. Legality of 36 C.F.R. § 219.51(b) and reference to it in section 50.1 (*see also* sec. 51.1 (exempting decisions made by the Secretary or Under Secretary from pre-decisional objections)).

Explanation: Although changes to the Planning Rule are not possible, the Federal District Court for the District of Montana has held that exempting decisions made by the Under Secretary of Agriculture from administrative review, as 36 C.F.R. 219.51(b) and section 50.1 do, is unlawful. *See Wilderness*

Soc'y v. Rey, 180 F. Supp. 2d 1141 (D. Mont. 2002) (holding that Under Secretary of Agriculture Mark Rey could not exempt a project from administrative appeal under 36 C.F.R. § 215.20, because that provision – similar to the one at 36 C.F.R. § 219.51(b) – conflicted with the Appeals Reform Act). While *Rey* addressed projects and not forest plans, it is simply bad policy – as the Planning Rule and these FSH sections permit – to exempt a forest plan amendment or revision from pre-decisional objection.

Recommendation: Because this Directive stems from the regulation, which cannot be amended through the Directives, no recommendation is made. However, the legality of the provision remains dubious, and the Forest Service should clarify and document the legal basis behind the conclusion that decisions made by particular individuals are exempt from pre-decisional objections.

C. Selection of species of conservation concern (SCC) should be subject to pre-decisional objection. (sec. 50.41)

Explanation: While section 50.41 clearly states that selection of SCC is subject to pre-decisional objection, section 52 does not display similar clarity.

Recommendation: Clarify that the selection of SCCs is subject to pre-decisional objection throughout the Directives.

D. Responses to objections should be completed within a designated time period, rather than "promptly." (sec. 50.44)

Explanation: The Forest Service, just like members of the public, should be held to deadlines for completing the administrative review process.

Recommendation: Include language from 36 C.F.R. § 219.57(b)(1), which requires the reviewing officer to resolve objections in writing within 90 days of the close of the objection period, rather than "ensuring that responses to the objections are completed promptly." While this responsibility is the reviewing officer's, it is ultimately the Responsible Official who must complete the review.

E. Evidence of timely filing is confusing. (sec. 51.43)

Explanation: This section of the Directives is confusing and overly complex. There is confusion regarding which time zone (the sender's or the recipient's) will be used as the basis for determining timeliness, and what is meant that an objection must be "shipped by" a certain time and date: unlike by mail, there is no single "postmark" that can serve as evidence of timely filing for all express delivery services.

Recommendation: Clarifying language should be added to the Directives to clearly state which time zone (sender's or recipient's) will be used as the basis for determining timeliness, as well as what is meant by "shipped by" a certain date and time.

F. Type of NEPA process required if resolution of an objection requires a forest plan amendment or other change. (sec. 51.6)

Explanation: The provision specifies various ways that an objection can be resolved. But it does not make clear what kind of public and NEPA process (if any) must be followed if, for example, an objection is resolved by modifying the forest plan. Can a plan be modified through the objection process without allowing the public to review and comment on the change? Can new information be included in a plan EIS in response to an objection, without providing an opportunity for public comment on the change? *See, Klamath Siskiyou Wildlands Ctr. v. Boody*, 468 F.3d 549 (9th Cir. 2006) (requiring formal amendment process, including NEPA and ESA compliance, for changes to forest plans outside of the formal revision/amendment process); *Douglas Timber Operators, Inc. v. Salazar*, 774 F. Supp. 2d 245 (D.D.C. 2011) (same).

Recommendation: Provide clarifying language that explains what additional NEPA analysis and public comment is required (if any) if resolution of an objection requires changes to the forest plan under revision/development/amendment.

G. Inclusion of "interested persons" in the objection resolution process. (sec. 51.65)

Explanation: As a general matter, the planning rule specifies that "interested persons" may participate in meetings to resolve objections. The rule does not include criteria to determine who is considered "interested." The FSH states that "requests to be given interested person status…should generally be approved. If the request is denied, the response must include the explanation for the denial." The FSH does not explain why a request could be denied or provide any criteria for denying such a request. Nor is it clear that the Planning Rule or FSH provides the USFS discretion to deny a person "interested person" status.

Recommendation: At a minimum the USFS should explain why interested person status might be denied, and ideally should clarify what an "interested person" is, and how it is determined.

III. Conclusion

In general, Chapter 50 is fairly complete, but would benefit from some clarifying language that better identifies the rights and responsibilities of the public as well as the Forest Service.

Vegetation Management -- Chapter 60

I. Introduction

Chapter 60 accurately reflects many of the concepts in the 2012 Planning Rule as well as required forest planning provisions from the National Forest Management Act. However, significant questions about the role of biomass, salvage logging, and other aspects of vegetation management remain unanswered and require clarification.

II. Issues and Recommendations

A. Additional definitions and clarification of existing definitions is needed. (sec. 60.5)

Explanation: Additional definitions are need for the terms "regeneration" and "clear cut," which are used throughout this Chapter. The definitions also fail to recognize several specific issues regarding biomass removal from national forests. For example, the definition of "Planned Sale Quantity" does not mention biomass: presumably if there is a "utilization standard" for commercially valuable fuelwood, then presumably woody biomass would be included as part of PSQ. Similarly, the definition of "Timber Production" apparently excludes wood fuels chipped at the landing and sold by the ton, and could even exclude chips sold for paper or fiberboard. In addition, the definition of "Timber Sale Program Quantity" is broad enough to include fuelwood or firewood in some cases: this wording could be interpreted to mean that fuelwood and firewood will always be excluded from the PSQ definition, since it is part of the "as well as" phrase.

Recommendation: 1) provide the requested additional definitions; 2) clarify how to determine whether biomass sales are included in PSQ; 3) clarify whether the definition of "timber production" includes chipped material sold for manufacturing, fuel, or other commercial purposes; 4) clarify whether fuelwood and firewood will always be excluded from the PSQ definition; 5) clarify whether biomass from roundwood or chipped stems that is sold under a commercial utilization standard is included in the PSQ calculation.

B. Clarification of compatibility of desired conditions and objectives with harvest methods. (sec. 61.2)

Explanation: The Directives require the Forest Service to consider whether timber production is compatible with the desired conditions and objectives of the plan based on five enumerated criteria. It is unclear why "regeneration of the stand is intended" is part of the determination of whether timber production is compatible with the desired conditions and objectives.

Recommendation: Clarify why "regeneration of the stand is intended" is part of the determination of whether timber production is compatible with the desired conditions and objectives.

C. Assessing timber production suitability should be tied to monitoring. (sec. 61.3)

Explanation: An assessment of timber production suitability is required by the Directives, but it is an isolated requirement that does not appear to be related to ecological conditions.

Recommendation: The requirement to reassess timber production suitability should be a required monitoring question, at least at the 5th biennial review, to support the provision at 36 C.F.R. § 219.11(a)(2).

D. Public and administrative review of the timber suitability determination. (sec. 61.3)

Explanation: The Directives do not state whether the timber suitability review or determination is subject to public and administrative review.

Recommendation: Clarify whether the timber suitability review is subject to public disclosure and objection.

E. Direction regarding post-fire management is needed. (sec. 63)

Explanation: There is no direction in the Directives about the controversial practice of salvage logging, which is often implemented using clear cut harvest methods. Salvage logging also has significant adverse effects on the environment, and yet the USFS permits the activity on a landscape level.

Recommendation: Strongly recommend clarifying language that generally limits salvage logging except in rare circumstances. *See generally*, Northwest Forest Plan Standards and Guidelines, C-13 – C-16; David B. Lindenmayer et al., *Salvage Logging and Its Ecological Consequences* (2008).

F. Role of salvage logging on lands not suited for timber production needs clarification. (sec. 64.1)

Explanation: Historically, post-fire logging or other methods of salvage logging – often using clear cutting prescriptions – have been implemented on sensitive lands that otherwise would not be subject to timber harvest. Post-disturbance, there is little evidence to suggest that these lands are any *more* suitable for logging than they were prior to the disturbance. Therefore, the loophole that allows for salvage to take place on lands otherwise not suitable for timber production should be eliminated or significantly constrained.

Recommendation: Clarify whether salvage logging is considered "timber harvest" or "timber production." If it is, it should be so defined. If not, then this section needs to be so clarified.

G. Crosswalk between Directives and monitoring re: precluding timber harvest if it leads to irreversible damage. (sec. 64.2)

Explanation: The Directives require forest plans to have "standards that the timber harvest practices and technology will only be applied if the harvest would not cause irreversible damage to soil, slope, or other watershed conditions." However, there needs to be a link or way for the agency to determine whether existing practices are causing irreparable damage: monitoring is the way to accomplish this goal. Without monitoring, there is no way to know whether practices are damaging or not.

Recommendation: Expressly require that all forest plans contain at least one monitoring question that addresses whether timber harvest practices are causing irreparable damage to soil, slope, or other watershed conditions.

H. Not all restocking is the same. (sec. 64.51b)

Explanation: Unnaturally dense stands (plantations) have been created as the result of over-restocking following harvest. Continuing to encourage "full stocking" perpetuates fire-prone young stands, which places ecological values at risk.

Recommendation: Include language that directs managers to reforest areas at a lower density than historically applied to avoid artificial overstocking of stands, which then leads to higher fire risk and risk to other resource values. Require a monitoring question that addresses whether restocking activities are achieving desired conditions, beyond "fully stocked" conditions (i.e., monitor the type of habitats created and sustained via restocking).

I. "Clear cutting" vs. "regeneration harvest." (sec. 64.52a)

Explanation: Many Forest Service managers will adamantly maintain that the agency no longer "clear cuts," but rather "regenerates" a stand. In this context, semantics is important. What is meant by "clear cutting" versus "regeneration"? Are they the same, or different, concepts?
Recommendation: Clarify whether clear cutting is the same as regeneration harvest, and consider addressing this issue in the definition section for this chapter.

J. Role of Best Available Scientific Information and use of even-aged harvest methods. (sec. 64.52a)

Explanation: The Directives permit the responsible official to use clear cutting or other even-aged harvest methods, but does not specify what type of information the responsible official must/may use to make that determination.

Recommendation: Clarify whether BASI is required when the responsible official makes a determination that clear cutting or other even-aged harvest methods "is the optimal method for the project" and those methods are "consistent with all other applicable plan components."

K. Role of biomass in the long-term sustained-yield capacity, timber sale program quantity, planned sale quantity, and quantity of timber sold calculations. (sec. 64.61, 64.62)

Explanation: Sections 64.61 and 64.62 purport to "describe how to identify the LTSYC, the timber sale program quantity (TSPQ), the planned sale quantity (PSQ) and the amount of timber actually sold to evaluate compliance with this standard." However, these sections do *not* describe how to report "timber actually sold": they only describe how to report the anticipated amounts - "timber sale program quantity" and "planned sale quantity." Presumably managers would use the same categories included in TSPQ and PSQ to report actual total removals over time and actual timber volume sold, so that actual can be compared to planned amounts, but the Directives are unclear on this point.

Similarly, the language "the timber volume used to estimate the LTSYC, the departure increment, the sale quantity limit and the planned sale quantity is the timber volume that meets utilization standards — the TSPQ includes all woody biomass" is unclear. It may be interpreted to mean that the TSPQ includes biomass harvested for fuelwood, while LTSYC, departure increment, sale quantity limit, and PSQ all exclude biomass harvested for fuel.

Recommendation: Clarify and explicitly state whether managers must use the same categories included in TSPQ and PSQ to report actual total removals over time and actual timber volume sold, so that actual can be compared to planned amounts. Clarify that when biomass is sold as a commercial product with utilization standards, it will be included in the LTSYC, departure increment, sale quantity limit, and PSQ calculations.

L. Calculation of sustained yield, and the role of biomass in the calculation, needs clarification. (sec. 64.61)

Explanation: The Directives state that "the responsible official must base the determination of the LTSYC on the amount of timber that could be produced on all lands that may be suitable for timber production and assuming all of these lands were managed to produce timber." However, if timber production means only roundwood, as implied by the earlier definition, then LTSYC does not include

material cut and chipped at the landing for wood fuel or other purposes. When fuelwood materials are tops and branches that are byproducts of commercial harvest, that omission does not matter since harvest volume will be limited by sustained yield of the timber trees. As fuelwood markets expand, excluding fuelwood chips from the definition of "timber production" could leave a loophole that allows over cutting of low-grade trees without regard to sustainability limits. Foresters generally think this is appropriate because it removes low-grade trees to make more room for high-value growth, but those low-grade trees may have important ecological functions. If the intention is to track growth and removals of all commercial valuable wood, then correcting the definition of "timber production" - to include low-grade material not necessarily sold as roundwood - would fix this passage as well. Standard growth and yield equations (referred to in the Directives) often refer to growing stock (trees of commercial species, not cull, greater than 5" dbh) which used to fit the definition of timber before biomass markets matured. These models would rarely reflect changes in the inventory of low-grade trees that have now become marketable commodities, even though those trees meet "utilization standards" for commercial fuelwood.

Recommendation: Provide clarification on the following: 1) how budgetary constraints may affect the sustained yield calculation, or clarify whether there is a relationship between appropriations for forest management and the sustained yield calculation; 2) the intent behind "The calculations of LTSYC may be based on application of intensified management practices such as reforestation, thinning and tree improvement," and whether this phrase means practices such as the application of herbicides; 3) that "intensified management practices" must be consistent with other provisions of the rule, statute, and directives (i.e., "(v) such cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, and esthetic resources, and the regeneration of the timber resource. (16 U.S.C. 1604(g)(3)(F))," and sec. 64.52e); 4) whether biomass is included in the sustainable yield calculation; 5) whether the Forest Service expects to cut low-grade stems for fuel wood, and if so, require growth and yield modeling for that component.

M. Role of salvage volume in PSQ calculations. (sec. 64.62)

Explanation: In the past, Forest Service personnel have maintained that salvage volume is *not* part of the PSQ because it is unplanned (i.e., opportunistic) harvest, but the Directives seem to indicate otherwise.

Recommendation: Clarify whether salvage volume is part of the PSQ, and if so, why and how can it be reasonably calculated when it is unplanned.

N. Role of federal appropriations and timber harvest levels. (sec. 64.62)

Explanation: The Forest Service must be clear that fiscal constraints may nullify predicted harvest levels.

Recommendation: Emphasize the provision that "Both the PSQ and the TSPQ must take into account the fiscal capability of the planning unit in the first two decades and be consistent with the plan components." *See generally, Swanson Group et al. v. Salazar*, No. 10-cv-1843 (D.D.C. filed Oct. 29, 2010) (alleging that the BLM is required to offer for sale 500 MMbf from Oregon & California lands pursuant to the Oregon and California Lands Act, regardless of fiscal and other legal constraints).

O. Role of biomass in PSQ calculations. (sec. 64.62)

Explanation: The Directives state that "the TSPQ is the total output of timber and other wood products anticipated in the first two decades of the plan, recognizing that the plan must be revised every 15 years. Display of the TSPQ must include a separate identification of the planned sale quantity (PSQ) to show the relationship between the planned timber sale program and the LTSYC." However, it is unclear how whole-tree biomass sold as a commercial product will be treated here. It will definitely be included in TSPQ. It may also be appropriate to include biomass in the PSQ, which is how the plan demonstrates compliance with sustainable yield requirements.

Recommendation: If biomass is included in PSQ, then biomass also needs to be part of LTSY calculations because it will draw mostly from non-growing stock components of forest inventory.

III. Conclusion.

Chapter 60 creates a fairly complex framework directing forest vegetation resource planning, and would benefit from clarification and simplification of concepts where possible.

Wilderness Evaluation - Chapter 70

I. Introduction

We commend the Forest Service on its revisions to Chapter 70, which addresses the Wilderness Evaluation process in forest planning. The revision significantly improves the wilderness evaluation process by adhering more closely to the criteria for Wilderness set forth in the Wilderness Act, simplifying the evaluation, and enhancing transparency. Below we discuss and offer recommendations for specific issues, including aspects of the draft chapter that we support and aspects with which we have concerns.

II. Issues and Recommendations

A. Starting the evaluation process with an identification and inventory of all lands that may be suitable for inclusion in the National Wilderness Preservation System makes sense.

Explanation: This approach is logical for the simple reason that between planning cycles shifts in land tenure (e.g., acquisition of lands by the Forest Service) and land conditions (e.g., roads have been decommissioned and reclaimed, or have faded away) that affect the roadless land base occur. For example, some lands within Inventoried Roadless Lands[25] (IRA) may contain roads that would eliminate portions of the areas from consideration under the proposed section 71.22a; conversely, roads may have been reclaimed on lands outside of IRAs rendering additional acres roadless.

In addition, it is important every planning cycle to update the inventory of roadless lands because roadless lands have value independent of the wilderness evaluation process (e.g., ecological strongholds, primitive recreation opportunities, high quality water and aquatic systems). The inventory

[25] Pursuant to the 2001 Roadless Rule and Final Environmental Impact Statement. Federal Register .Vol. 66, No. 9. January 12, 2001.

generated in the proposed section 71 will inform not only the wilderness evaluation process but also other types of land management decisions made within and outside of the forest planning process. Lastly, we agree with the requirement for documenting and identifying on a map lands included in the inventory. A map enables us to understand the spatial extent and distribution of lands, as well as the context within the broader landscape, including how the lands overlap with other designations and resource values.

Recommendation: In the final directives, keep section 71 as proposed.

B. The approach in section 71.22a of using maintenance levels to determine what constitutes a road improvement is thoughtfully crafted and makes sense.

Explanation: The proposed revision takes a thoughtful, efficient, and fair approach to identifying an inventory of roadless areas. The newly proposed directives utilize the Forest Service road classification system to provide greater clarity about which roads to count as improvements that disqualify an area from the inventory. Specifically, Maintenance Level 1 (i.e. closed) roads do not count as improvements, while Maintenance Level 3-5 (regularly maintained for passenger vehicle use) roads generally do count. Maintenance Level 2 roads will be evaluated based on several criteria, such as the extent to which the road has been improved and maintained for regular use. In addition, roads that the Forest Service plans to close or decommission in the future are not to be considered as improvements that would disqualify undeveloped areas from the inventory.

This is a positive change from the 2006 version of the directives, which excluded areas that contained any "forest road," including both open and closed roads. The 2006 approach meant that the Forest Service's entire 373,000-mile forest road system, which includes more than 100,000 miles of closed roads, eliminated areas from being included in the initial inventory that serves as a basis for the subsequent evaluation. The 2006 approach was an extreme interpretation of the Wilderness Act and an unreasonable restriction on the planning process.

It is important to note that the proposed approach to identifying road improvements conforms much more closely to that used historically by the Forest Service in its RARE surveys and in its implementation of the 1982 rule. Now defunct Chapter 7 of the planning directives, which was created to implement the 1982 rule, stated that "Roadless areas qualify for placement on the inventory of potential wilderness if . . . (3) they do not contain *improved* roads *maintained for travel by standard passenger-type vehicles* . . . ." FSH 1909.12 Ch. 7.11 (emphasis added).[26] In other words, since the beginning of forest planning, the Forest Service did not eliminate areas from consideration as roadless if they included four-wheel drive roads. It was only seven years ago with the 2006 handbook revision that the Forest Service approach shifted from its historical course. The approach currently proposed by the Forest Service in section 71.22a reflects the traditional approach for identifying roadless areas.

[26] The Forest Service Handbook Chapter 7 approach closely tracks that used in the preparation of the RARE II inventory and Final EIS: "RARE II began with a Forest Service inventory of roadless, undeveloped areas that have met minimum criteria for wilderness consideration under the Wilderness Act. The criteria defined a roadless area as an area exclusive of improved roads constructed or maintained for travel by means of motorized vehicles intended for highway use." USFS, Final EIS, RARE II, at 6 (Jan. 1979).

In addition, the proposed approach moves the Forest Service closer to that utilized by the Bureau of Land Management (BLM), which will lead to enhanced interagency consistency in the wilderness evaluation process, facilitate cross-boundary inventory efforts, and make it easier for the public to understand and engage in wilderness evaluations. The BLM approach is based on the legislative history of the Federal Land Management and Policy Act where the word "roadless" refers to the absence of roads which have been improved and maintained by mechanical means to insure relatively regular and continuous use; a way maintained solely by the passage of vehicles does not constitute a road.[27] In the context of travel management planning, the BLM also has guidance that provides a standard definition of "road" in their Travel Management Planning Manual as: *"A linear route declared a road by the owner, managed for use by low-clearance vehicles having four or more wheels, and maintained for regular and continuous use."*[28]

Furthermore, the proposed approach echoes that used often by Congress when legislating Wilderness areas. Many roadless areas and wilderness areas contain routes not passable by a passenger car, indicating that Congress does not view areas that contain "two-tracks" and other such routes as being *a priori* eliminated from wilderness consideration. The presence of two-tracks and the like is appropriately addressed when evaluating whether to recommend an area for wilderness designation, and not when identifying which lands are roadless.

We also very much appreciate the inclusion of subsections 71.22a(1)(b) and (c) which add a restoration element to the wilderness evaluation process. This is an innovative addition, which will result in identifying places that are soon to be roadless and should be managed for those values during the term of the plan.[29]

Although for the most part section 71.22a is well crafted, we have two specific concerns. First, we are concerned with the inclusion of subsection 71.22a(3)(d). The text states: "Other on-the-ground knowledge of the level 2 road that would preclude evaluation and consideration of the area during the public participation process as potentially suitable for wilderness recommendation." We are uncomfortable with this wording, as it seems to add a subjective element to what should be an objective process. The first three filters in section 71.22a(3) set forth an adequate objective framework that can be applied by the Forest Service and public alike; the fourth filter adds ambiguity and muddies the objective framework. Hence, we think you should remove it.

Second, as we expressed above, we like the wording in section 71.22a(1) that states: "The road has been improved and is maintained by mechanical means to ensure relatively regular and continuous use." However, we are concerned that someone could interpret this to mean that regular driving of the road constitutes maintenance by mechanical means. (For instance, someone might think that driving a jeep down a road once a month keeps the vegetation down enough to keep the road passable, and hence the act of driving constitutes maintenance.) To preclude confusion, we recommend that you add the language that "a route maintained solely by the passage of vehicles does

[27] See H.R. Rep. No. 94-1163 at 17 (1976).

[28] Bureau of Land Management Manual 1626, page 34. Issued 7/14/2011.

[29] Likewise, we appreciate the forward-looking restoration language in subsections 71.22b (2), (3), (5), (6) and (10) as well.

not constitute a road maintained for regular and continuous use." This is consistent with the legislative intent related to BLM wilderness inventories expressed in House Report No. 94-1163 at 17 (1976). *Recommendation:* In the final directives, delete subsection 71.22a(3)(d). To provide clarity, add the sentence "a route maintained solely by the passage of vehicles does not constitute a road maintained for regular and continuous use" to subsection 71.22a(1). Also to provide clarity, in subsection 71.22a(3)(c), insert "motorized" in front of "public access."

C. The approach in section 71.22b of identifying other improvements that do not disqualify an area from consideration makes sense and is generally consistent with that used by other agencies.

Explanation: The Wilderness Act says, "A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable…." (Section 2(c)) The legislative history of the Wilderness Act tells us that the first sentence of this excerpt was intended to communicate the ideal of wilderness, and the second was to communicate the practical. And, specifically, with the language "with the imprint of man's work substantially unnoticeable," Congress intended that lands that had suffered historical abuse should be eligible for wilderness designation.[30] This intention is evidenced, for instance, by the fact that numerous wilderness areas contain old two-tracks, and that abandoned roads were incorporated into a number of the original 54 wilderness areas that were designated immediately by the 1964 Wilderness Act itself.[31]

The language in section 71.22b is a reasonable interpretation of the Act's language as the enumerated items constitute imprints of man's work that are substantially unnoticeable. The BLM and the USFWS take similar approaches to interpreting this phrase, and do not disqualify areas from consideration for wilderness designation because of the existence of similar types of improvements.[32]

---

[30] See Douglas Scott, 2002. *"Untrammeled,""Wilderness Character," and the Challenges of Wilderness Preservation*. In Wild Earth. Fall/Winter 2001-2002. 11 (3; 4): Pages 72-79. See also Douglass Scott, 2001. "Congress's Practical Criteria for Designating Wilderness." Wild Earth. Spring 2001. 11(1): 28-32.

[31] See Campaign for America's Wilderness, 2004. *Closing and Restoring Roads for Inclusion in a Wilderness Area.* Briefing Paper. Page 2.

[32] See BLM Manual 6310.06(C)(2)(b), pages 6. Also see Part 610, chapter 4, section 4.9 (b) and (C) of the USFWS' Natural and Resources Management Policy that states:

"B. We avoid an approach to assessing naturalness that limits wilderness designation only to those areas judged pristine. Land that was once logged, used for agriculture, or otherwise significantly altered by humans may be eligible for wilderness designation if it has been restored or is in the process of being restored to a substantially natural appearance.

"C. We use caution in assessing the effects on naturalness that relatively minor human impacts create. An area being evaluated may include some human impacts provided they are substantially unnoticeable in the unit as a whole. Examples of manmade features that would not disqualify an area for consideration as a WSA include: trails, trail signs, bridges, fire towers, fire breaks, fire presuppression facilities, pit toilets, fisheries enhancement facilities (such as fish traps and stream barriers), fire rings, hitching posts, snow gauges, water quantity and quality measuring devices, research monitoring markers and devices, wildlife enhancement facilities, radio repeater sites, air quality monitoring devices, fencing, spring developments, and small reservoirs. Even with these features, an area may express wilderness character and values."

We appreciate the proposed consideration of restoration potential in the inventory process by providing direction in section 71.22b to include areas with improvements "if wilderness character can be maintained or restored through appropriate management actions." This is consistent with the Planning Rule's overarching mandate to "maintain or restore" the ecological integrity of ecosystems and watersheds. However, we do not find this same or similar restoration direction carried through from the inventory stage into the evaluation stage. Therefore, we urge you to include similar language in the evaluation of wilderness characteristics in subsection 72.1(1)(c).

Recommendation: In the final directives, keep section 71.22b as proposed. In the evaluation of wilderness characteristics section, add "and the feasibility of restoration through appropriate management actions" at the end of subsection 72.1(1)(c).

D. Use criteria set forth in the Wilderness Act as the basis for the evaluation.

Explanation: The Wilderness Act criteria are the presence of naturalness and outstanding opportunities for solitude or a primitive and unconfined recreation, and whether the area is of sufficient size to be practicable to manage as wilderness; an area *may* also contain special features or values but does not have to in order to meet the statutory definition.[33] In the previous version of Chapter 70 that went into effect in 2006, the Forest Service relied on criteria for evaluating areas for Wilderness characteristics that did not accurately reflect those established in the Wilderness Act and related Congressional interpretations.[34] Previous evaluative criteria included such factors as light pollution, water pollution, health of at-risk or rare communities, and outside sights and sounds. In addition, the 2006 directives led to the conflation of *solitude* and *primitive and unconfined recreation*, when the Wilderness Act language clearly requires one or the other but not necessarily both to exist. The proposed revision in section 72.1 is an improvement from the 2006 version in that it is much clearer and simpler and adheres more closely to the Wilderness Act criteria. However, we still have some concerns with the language describing the evaluative criteria.

Our first concern lies in the language of section 72.1(1) that addresses the naturalness criteria. It has long been understood that naturalness refers to "apparent naturalness" and not necessarily ecological naturalness. The Wilderness Act defines wilderness as an area that "...generally *appears* to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable." (Emphasis added) The area must appear natural to the average visitor. This interpretation based on plain reading of the Wilderness Act is used by US Fish and Wildlife Service[35] and the BLM.[36] The

[33] The Wilderness Act defines a wilderness area as "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value. 16 U.S.C. § 1131(c).

[34] For instance, see House Report 95-540, 95th Congress, July 27, 1977, page 5.

[35] Part 610, chapter 4, section 4.9 of the USFWS' Natural and Resources Management Policy states: "4.9 How does the Service evaluate the naturalness criteria to identify a WSA during inventory? Section 2(c) defines wilderness as an area that ". . . generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable." To make this determination, it must be possible to observe the area as being generally natural.

proposed version of section 72.1(1) incorrectly lists ecological factors that can be considered in assessing naturalness. Instead, this section should make the distinction between apparent naturalness and ecological integrity and clarify that naturalness in this context refers to the former. Ecological factors are best considered in the section on supplemental values and in the analysis.

Our second concern lies in the language in section 72.1(2) related to evaluating solitude where the text reads, "Consider impacts that are pervasive and that influence a visitor's opportunity for solitude. Factors that may be considered include topography, presence of screening, distance from impacts, degree of permanent intrusions, and sights and sounds from outside the area." (Page 10) We disagree with including "sights and sounds from outside the area" as a valid factor for consideration of solitude. The legislative history of the Wilderness Act and related acts makes it clear that sights and sounds from outside the area should not impact determinations regarding solitude."[37] Hence, it is valid to consider the ability of visitors to avoid the sights and sounds *inside* the unit, but it is not valid to consider the ability of visitors to avoid the sights and sounds *outside* of the unit. Regarding "distance from impacts," does this refer to impacts outside the area? If so, based on the same argument that applies to outside sights and sounds, it should not be included as a factor for consideration. Regarding "topography" and "screening," these are valid factors so long as they refer to a person's ability to avoid seeing others within an area, and not applied to viewing sights outside of the area. Because solitude is the state of being alone or remote from others, we think that a primary factor for

---

A. We make a distinction between an area's "apparent naturalness" and "historic conditions" in the context of biological integrity, diversity, and environmental health. The term "historic conditions" refers to the condition of the landscape in a particular area before the onset of significant, human-caused change. The term "apparent naturalness" refers to whether or not an area looks natural to the average visitor who is not familiar with historic conditions versus human-affected ecosystems in a given area. We address the question of the presence or absence of apparent naturalness (i.e., are the works of humans substantially unnoticeable to the average visitor?) in the inventory phase of the wilderness review. In the study phase of the wilderness review, we make an assessment of an area's existing levels of biological integrity, diversity, and environmental health.

B. We avoid an approach to assessing naturalness that limits wilderness designation only to those areas judged pristine. Land that was once logged, used for agriculture, or otherwise significantly altered by humans may be eligible for wilderness designation if it has been restored or is in the process of being restored to a substantially natural appearance."

http://www.fws.gov/policy/610fw4.pdf.

For application of the USFWS policy, see James Campbell National Wildlife Refuge Comprehensive Conservation Plan, Appendix D: Wilderness Review, page D-1." (2012). http://www.fws.gov/jamescampbell/Final%20CCP%20files/Appendix%20D.pdf.

[36] See BLM Manual 6310.06(C)(2)(b), pages 6-8:
"i. Affected Primarily by the Forces of Nature. Determine if the area appears to be in a natural condition. 1) The area must appear to have been affected primarily by the forces of nature, and any work of human beings must be substantially unnoticeable. Examples of human made features that may be considered substantially unnoticeable in certain cases are: trails, trail signs, bridges, fire breaks, pit toilets, fisheries enhancement facilities, fire rings, historic properties, archaeological resources, hitching posts, snow gauges, water quantity and quality measuring devices, research monitoring markers and devices, minor radio repeater sites, air quality monitoring devices, fencing, spring developments, barely visible linear disturbances, and stock ponds.
ii. Describing Human Impacts. Document noticeable human impacts within the area. If several minor impacts exist, summarize their cumulative effect on the area's degree of apparent naturalness. The review of human impacts will assess the presence or absence of apparent naturalness (i.e., do the works of humans appear to be substantially unnoticeable to the average visitor?). There is an important difference between an area's natural integrity and its apparent naturalness as explained below.

http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.38337.File.dat/6310.pdf

[37] See Scott, Douglas. 2006. Congressional Guidance on Outside Sights and Sounds.

consideration should simply be whether a person can be alone in the area or sufficiently distant from others to feel secluded, and the language in this section should say so.

Third, the text in section 72.1(2) rightly points out that an area can possess outstanding opportunities for solitude even if there is variation in the degree of solitude spatially: "Evaluate the degree to which the area has outstanding opportunities for solitude or for a primitive and unconfined type of recreation. The word "or" means that an area only has to possess one or the other. The area does not have to possess outstanding opportunities for both elements, *nor does it need to have outstanding opportunities on every acre.*" (Page 10, emphasis added) The text should also acknowledge that variation in the degree of solitude can be temporal in addition to spatial. For instance, an area that is popular with hunters in the fall and in the rest of the year has little visitation can possess outstanding opportunities for solitude.

Recommendation: In the final directives, keep section 72.1 as proposed with the following changes:

- The language in 72.1(1) should make it clear that naturalness refers to apparent naturalness (looks natural to the average visitor) and not necessarily to ecological naturalness.
- The language in 72.1(2) that addresses evaluating solitude should not cite "outside sights and sounds" as a valid factor for consideration. In addition, we recommend that the evaluation of solitude should hinge primarily on whether a person can be alone in the area or sufficiently distant from others to feel secluded. Lastly, the text should make clear that an area can possess outstanding opportunities for solitude even if there are spatial and temporal variations in solitude.

E. The proposed chapter 70 appropriately provides for public engagement and calls for increased transparency.

Explanation: We appreciate that the proposed directives emphasize public engagement and transparency, as it will make it easier to understand, follow, and engage effectively in the process. In particular, we appreciate the inclusion of the following language:

- Sec. 71.4: "The responsible official shall document the process used to identify and inventory areas. The purpose is to present a transparent description of how the inventory process was conducted. Record each area included in the inventory on a map…"
- Sec. 72.2: "Document the evaluation and include this documentation, along with the map(s) required by section 71.4, in the planning record. The intent is to ensure that the process for inventory and evaluation is transparent and accessible to the public for input and feedback. This documentation will be available for public participation opportunities during the plan revision or development process."
- Sec. 74: "Additionally, the final decision document must recognize lands in the inventory and evaluation which were not recommended for inclusion in the NWPS and briefly identify or describe what management direction is provided in the plan for those lands."

Recommendation: In the final directives, maintain the emphasis on public engagement and transparency throughout the entire wilderness evaluation process.

F. Examples of supplemental values should include factors such as connectivity and representation.

Explanation: The proposed directives at 72.1(4) address the evaluation of supplemental values that an area under consideration may possess. The proposed directives rightfully point out that although these values are not required to be present in an area for it to be recommended for inclusion in the National Wilderness Preservation System, it is useful to understand the values the areas possess, and whether a recommended wilderness designation would sufficiently protect the identified supplemental values or whether a secondary designation (e.g., botanical area, important habitat area, scenic area) might be warranted. The proposed directives at 72.1(4) offer examples of supplemental values such as the presence of outstanding landscape features and the cultural sites. We agree with these, but also think that ecological factors, especially those that might facilitate climate change adaption, should be added to the list. These would include:

- Facilitates species migration and landscape connectivity; and
- Includes under-represented habitats or under-represented geophysical conditions.

Recommendation: Add the following examples to 72.1(4): 1) Facilitates species migration and landscape connectivity; and 2) Includes under-represented habitats or under-represented geophysical conditions.

G. The elimination of separate criteria for eastern national forests is an improvement *so long as* the approach to what constitutes a road improvement in section 71.22a does not change.

Explanation: Up until now, the Chapter 70 directives have treated national forests east of the 100th meridian differently from the western national forests. For example, the wilderness inventory criteria have allowed up to one-half mile of roads per 1,000 acres in eastern forests, and the suitability evaluation has allowed some non-wilderness structures such as log cabins that can be easily removed. The draft directives eliminate the special treatment of eastern national forests. We support this apparent effort to simplify Chapter 70 so long as the inventory continues to be "broad and inclusive," maintains the language in section 71.22a related to road improvements, and allows for restoration of wilderness character.

Specific to the language in section 71.22a, most closed roads on national forests in the east are categorized as maintenance level 2 roads even if they are for all intents and purposes in storage, are never used, and are unusable (numerous examples with trees growing in the roadbed and culverts washed out). The proposed language in section 71.22a assures that these roads would not disqualify areas from consideration. <u>However</u>, if the language in section 71.22a were changed in the final directives to be more narrow (that is, disqualify more areas from consideration based on road conditions) and at the same time specific eastern provisions were not reinstated, many deserving eastern areas would be eliminated from consideration, and the final policy would be a step back from even the 2006 criteria, which had provision for 1/2 mile of roads per 1,000 acres. <u>Special provisions for the east are only expendable if the provision remains not to count ML 1 and unmaintained and unimproved ML 2 roads in the inventory</u>.

Recommendation: Because the removal of the eastern specific provisions relies on the new road improvements language in section 71.22a, keep in the final directives both of these changes.

H. The responsible official should have to consider conservation measures for those lands that are identified as roadless and/or having wilderness character but not recommended for wilderness designation.

Explanation: Lands identified in the evaluation process as roadless and/or possessing wilderness character are the last remaining unprotected wild places in our national forests and have high ecological and social value. By virtue of the wilderness evaluation process, some fraction of these lands will not be recommended for wilderness designation in the Record of Decision. The question then becomes what happens to these lands. Are they returned to the general land base and made available for a variety of uses including mining, energy development, and logging? Or are they provided some level of protection in the planning process? As currently proposed, chapter 70 does not require that the responsible official confer or consider conferring conservation measures or other types of conservation designations to these areas.[38] We think it should.

Roadless lands have special value and merit additional management attention and protection. Indeed, the Wilderness Act of 1964 and the Roadless Area Conservation Rule (RACR) of 2001 are products of this sentiment. Roadless values and characteristics are articulated elegantly in the RACR preamble[39] as well as in the FEIS for the RACR (Final Environmental Impact Statement, Vol. 1, 3–3 to 3–7), and include: High quality or undisturbed soil, water, and air; sources of public drinking water; diversity of plant and animal communities; habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land; primitive, semi-primitive non- motorized, and semi-primitive motorized classes of dispersed recreation; reference landscapes; natural appearing landscapes with high scenic quality; traditional cultural properties and sacred sites; and other locally identified unique characteristics (e.g., include uncommon geological formations, unique wetland complexes, exceptional hunting and fishing opportunities). The value of areas with wilderness qualities is described in numerous essays by Aldo Leopold, Wallace Stegner, and others.

Although most of the remaining roadless lands on national forests are captured within Inventoried Roadless Area boundaries and subject to the protections of the RACR, many are not. Moreover, the RACR protects roadless lands from future road-building but does not necessarily provide conservation measures warranted by particular roadless and wilderness quality lands (e.g., protection of outstanding recreational opportunities, geologic formations, high quality habitats). This argues that the final directives include a requirement to confer protections – or, at a minimum, consider conferring - to roadless and wilderness quality lands not recommended for wilderness designation through an alternative administrative designation or other means. Such protections should include but certainly not be limited to designating the lands as not suitable for timber production under 36 CFR 219.11(a)(1)(iii).

Note that this is not a new idea. The Forest Service included the concept in the 2000 Forest Planning Rule when it stated: "Identify and evaluate inventoried roadless areas and unroaded areas based on

[38] However, the proposed language in 74 does appropriately require that the final decision document describe management direction for lands in the inventory and evaluation that were not recommended for wilderness designation.

[39] Federal Register .Vol. 66, No. 9. January 12, 2001. Pages 3245-3247.

the information, analyses, and requirements in 36 CFR 219.20(a) and 219.21(a). During the plan revision process or at other times as deemed appropriate, the responsible official must determine which inventoried roadless areas and unroaded areas warrant additional protection and the level of protection to be afforded."[40]

Recommendation: In section 74, change the penultimate paragraph to say: "Additionally, the final decision document must recognize lands in the inventory and evaluation which were not recommended for inclusion in the NWPS and briefly identify or describe what management direction is provided in the plan for those lands, *including what types of conservation measures and/or designations he/she is applying to these areas and why*." (Italics denote our recommended additions.)

Wild and Scenic Rivers - Chapter 80

I. Introduction

We commend the Forest Service on its revisions to Chapter 80, which addresses the Wild and Scenic River evaluation process in forest planning. The revision improves the Wild and Scenic River evaluation process by better describing and clarifying key requirements under the Wild and Scenic Rivers Act. Below, we discuss and offer recommendations for specific issues, including aspects of the draft chapter that we support and aspects with which we have concerns. Key areas of concern are the protective management of eligible rivers related to water resource projects and the scope and timing of eligibility assessments.

II. Issues and Recommendations

A. Section 80.5: Eligible Wild and Scenic Rivers definition should be revised

Explanation: The second sentence of the Eligible River definition should be stricken since the explicit linkage to suitability could be misconstrued. A description of the methods for eligibility determination should be substituted.

Recommendation: Delete-"An eligible river is a river that is further evaluated in a suitability study to determine if it should be included in the National System." Sample language for a substitute: "Eligibility is determined through two methods, congressionally authorized studies under Section 5(a) of the Wild and Scenic Rivers Act (the Act) and through agency inventory and planning processes, Section 5(d)(1)."

B. Section 82.1-Clarify that all streams and rivers must be evaluated for eligibility.

Explanation: Currently there is no guidance for forest planners to guide the proper scope of evaluation of eligible rivers on National Forests and Grasslands. Managers are required by the Act to evaluate all streams and rivers on National Forest lands including rivulets and intermittent streams which are explicitly mentioned in the plain language of the statute. This lack of guidance has kept many forests from meeting these requirements.

[40] 36 CFR 219.9(b)(8) (2000 Planning Rule)

Recommendation: Insert language in section 82.1 that mirrors the plain language of the Act relating to the types of streams that should be analyzed for eligibility.

C. Section 81.21-Wild and Scenic eligibility assessments should be permitted outside of forest plan revisions or a decision document.

Explanation: Previous guidance specifically stated that eligibility assessments did not require a decision or approval document. Many eligibility assessments are outdated and/or were completed prior to the improvements in guidance for managers, which has led to inadequate assessments of rivers on National Forest lands. Forests should retain the latitude to conduct comprehensive eligibility assessments that include rivers and streams in current plans as they are often outdated.

Recommendation: Allow forests to conduct eligibility assessments through amendment if new information is made available justifying a determination. Add to section 82.21.1 first paragraph-Eligible Rivers: "Additional study may be done if changed circumstances warrant additional review of eligibility outside plan revision or decisional document." As a part of eligibility assessments, require forests to review past assessments for adequacy and consistency with current guidelines.

D. Section 82.14(a)-Outstandingly Remarkable Values criteria should remain objective.

Explanation: The Act recognizes the wide range of outstandingly remarkable values that can justify an eligibility determination. The draft guidelines provide an excellent description of examples of categories and recognizes in section 82.14(a)(7) that other values may be considered. The new introductory paragraph is a bit unclear compared to the previous version. Language should retain the flexibility of the previous version for ORV determinations.

Recommendation: Add sentence in the introductory paragraph for Section 82.12(a): “The examples below are intended to set minimum thresholds to establish outstandingly remarkable values and are illustrative and not all-inclusive.”

E. Section 82.53: Protective management of rivers found eligible under Section 5(d)(1) should prohibit water resource projects and hydroelectric projects and facilities pending an ineligibility or not suitable determination.

Explanation: Protective management of stream segments in federal ownership should begin at the time a segment is found eligible under Section 5(d)(1) of the Act through the agency’s action such as the completion of a forest plan. These stream reaches must be managed to preserve them in a free flowing condition and cannot be modified by construction or development of stream impoundments, diversions, or other water resource projects. The draft guidance in section 82.53 should be modified to make these protections clear. The prohibition on new water resource or hydroelectric projects for stream reaches found eligible under 5(d)(1) of the Act should be identical to the protections afforded river segments for which Congress has requested a Study under Section 5(a) under the Act.

Recommendation: Modify Section 82.53 to prohibit water resource projects and hydroelectric projects and facilities pending an “ineligible or not suitable” determination.

F. Section 83.1 - Suitability determinations should be completed as soon as practicable.

Explanation: Suitability determinations are called for in the land management planning process or outside the plan revisions when justified by Congressional study. Given resource limitations for forests, suitability determinations for all congressionally mandated study rivers should be prioritized while study of eligible rivers should be completed as soon as practicable.

Recommendation: Provide latitude and flexibility for forest managers to complete suitability for Section 5(a)(1) eligible river determinations as necessary.

References

American Hiking Society, 2005. *Trails at Risk: The Impacts of Unmanaged Motorized Recreation and Off-Road Vehicle Use on Hiking Trails and the Hiking Experience.*

Anderson, Mike, Collene Gaolach, Janice Thomson, and Greg Aplet. 2012. Watershed health in wilderness, roadless, and roaded areas of the National Forest System. The Wilderness Society. http://wilderness.org/resource/watershed-health-wilderness-roadless-and-roaded-areas-national-forest-system.

Belsky, Joy, and Dana Blumenthal. 1997. Effects of livestock grazing on stand dynamics and soils in upland forests of the interior West. *Conservation Biology* 11(2):315-327)

Beschta, Robert, Debra Donahue, Dominick DellaSala, Jonathan Rhodes, James. Karr, Mary O'Brien, Thomas L. Fleischner, and Cindy Williams. 2013. Adapting to Climate Change on Western Public Lands: Addressing the Ecological Effects of Domestic, Wild, and Feral Ungulates. Environmental Management 51:474–491.

Bowker, J.M., J.E. Harvard III, John C. Bergstron, H. Ken Cordell, Donald B.K. English, and John B. Loomis. 2005. The net economic value of wilderness. In: Cordell, H.K., J.C. Bergstrom and J.M. Bowker (eds). *The Multiple Values of Wilderness*. Venture Publishing: State College, PA.

Bureau of Land Management Manual 1626, page 34. Issued 7/14/2011. http://www.blm.gov/pgdata/etc/medialib/blm/wo/Information_Resources_Management/policy/blm_manual.Par.38337.File.dat/6310.pdf

Campaign for America's Wilderness, 2004. *Closing and Restoring Roads for Inclusion in a Wilderness Area.* Briefing Paper. Page 2.

Clearwater National Forest, Travel Planning Draft Environmental Impact Statement, p. 3-83.

Collaborative Group on Sustainable Grazing for U.S. Forest Service Lands in Southern Utah. 2012. *Final Report and Consensus Recommendations.* http://www.law.utah.edu/wp-content/uploads/Sustainable-Grazing-So-UT-FS-Final-Report.1231121.pdf.

de Groot, Rudolf S., Matthew A. Wilson and Roelof M. J. Boumans, 2002, A typology for the classification, description and valuation of ecosystem functions, goods and services*, Ecological Economics* 41(3):393-408

Executive Office of the President: President's Council of Advisors on Science and Technology. 2011. Report to the President: Sustaining Natural Capital: Protecting Society and the Economy. (PCAST 125 pp). Available at http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_sustaining_environmental_capital_report.pdf.

Forman, R. T. T., and A.M. Hersperger. 1996. Road ecology and road density in different landscapes, with international planning and mitigation solutions. Pages 1–22. IN: G. L. Evink, P. Garrett, D. Zeigler, and J. Berry (eds.), Trends in Addressing Transportation Related Wildlife Mortality. No. FLER- 58-96, Florida Department of Transportation, Tallahassee, Florida.

Forman, R. T. T., and L. E. Alexander. 1998. Roads and their major ecological effects. Annual Review of Ecology and Systematics 29:207-231.

Great Lakes Envtl. Ctr., *National Level Assessment of Water Quality Impairments Related to Forest Roads and Their Prevention by Best Management Practices* (2008)

Gucinski, H., M. J. Furniss, R. R. Ziemer, and M. H. Brookes. 2001. Forest roads: a synthesis of scientific information. Gen. Tech. Rep. PNWGTR-509. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, Portland, OR. http://www.fs.fed.us/pnw/pubs/gtr509.pdf

Holderegger, R. & Di Giulio M., 2010. The genetic effects of roads: A review of empirical evidence. Basic and Applied Ecology 11: 522–531.

House of Representatives Report 95-540, 95th Congress, July 27, 1977, page 5.

House of Representatives Report No. 94-1163 at 17 (1976).

Hutto, R.L. and Belote, R.T. 2013. Distinguishing four types of monitoring on the questions they address. Forest Ecology and Management 289 (2013) 183-189.

Idaho Conservation League, 2011. *In Need of Protection: How Off-Road Vehicles and Snowmobiles Are Threatening the Forest Service's Recommended Wilderness Areas.*

James Campbell National Wildlife Refuge Comprehensive Conservation Plan, Appendix D: Wilderness Review, page D-1." (2012). http://www.fws.gov/jamescampbell/Final%20CCP%20files/Appendix%20D.pdf.

Jones, J. A., F. J. Swanson, B. C. Wemple, and K. U. Snyder. 2000. Effects of roads on hydrology, geomorphology, and disturbance patches in stream networks. Conservation Biology 14: 76-85.

Krutilla, J.V. 1967. Conservation reconsidered. *American Economic Review* 57(4):777-86.

Lindenmayer, David B., et al., *Salvage Logging and Its Ecological Consequences* (2008).

Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC. Available at http://www.millenniumassessment.org/en/Synthesis.html.

Morton, Pete. 1999. The Economic Benefits of Wilderness: Theory and Practice. *Denver Law Review* 76(2): 465-518.

Nie, Martin & Emily Schembra, Evaluating the Role of Standards in U.S. National Forest Planning (2013).

Nie, Martin, Professor, Natural Resources Policy, College of Forestry and Conservation, University of Montana, & Emily Schembra, College of Forestry and Conservation, University of Montana. Letter to United States Forest Service (March 8, 2013).

Noon, B. R. 2003. Conceptual issues in monitoring ecological systems. Pages 27-71 in D.E. Busch and J. C. Trexler, eds. Monitoring ecosystems: Interdisciplinary approaches for evaluating ecoregional initiatives. Island Press, Washington, D.C.

Proescholdt, Kevin, 2006. *Off-Road Vehicle Impacts on Hunting and Fishing.* Izaak Walton League of America.

Reyers, Belinda; Polasky, Stephen; Tallis, Heather; Mooney, Harold; Larigauderie. 2012. Finding common ground for biodiversity and ecosystem services. Bioscience 62(5): 503-507.

Rivers and Menlove, 2006. Winter Recreation on Western National Forest Lands: *A Comprehensive Analysis of Motorized and Non-Motorized Opportunity and Access.* Winter WIldlands Alliance.

Schultz et al., *Wildlife Conservation Planning Under the United States Forest Service's 2012 Planning Rule*, J. of Wildlife Mgmt. (2012)

Scott, Douglas, 2006. Congressional Guidance on Outside Sights and Sounds.

Scott, Douglas, 2002. *"Untrammeled,""Wilderness Character," and the Challenges of Wilderness Preservation*. In Wild Earth. Fall/Winter 2001-2002. 11 (3; 4): Pages 72-79. See also Douglas Scott, 2001. "Congress's Practical Criteria for Designating Wilderness." Wild Earth. Spring 2001. 11(1): 28-32.

Smith, Nikola; Deal, Robert; Kline, Jeff; Blaha, Dale; Patterson, Trista; Spies, Thomas; and Bennett, Karen. 2011. Ecosystem services as a framework for forest stewardship: Deschutes National Forest Overview. USDA Forest Service General Technical Report PNW-GTR-852.

The Nature Conservancy, 2010. Key findings from recent national opinion research on ecosystem services. Fairbank, Maslin, Maullin, Metz and Associates. Public Opinion Strategies. 13 pp.

The Wilderness Society, 2012. Summary of Information Related to Road Density and National Forests. November 2012.

Trombulak, S. C., and C. A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic communities. Conservation Biology 14:18-30. http://onlinelibrary.wiley.com/doi/10.1046/j.1523-1739.2000.99084.x/pdf

US Fish and Wildlife Service. Natural and Resources Management Policy. http://www.fws.gov/policy/610fw4.pdf.

US Forest Service and Bureau of Land Management, Record of Decision for Amendments to Forest Service and Bureau of Land Management Planning Documents within the Range of the Northern Spotted Owl, Standards and Guidelines C-13 – C-16 (1993) (Northwest Forest Plan Standards and Guidelines) available at http://www.reo.gov/library/reports/newsandga.pdf.

US Forest Service. 2001. National Forest System Road Management Strategy Environmental Assessment. Forest Service, Washington Office, *available at* http://www.fs.fed.us/eng/road_mgt/Final-Forest-Service-EA/PDF/FINAL%20EA.PDF

US Forest Service. 2012. National Forest System Land Management Planning. Federal Register 77(68) (April 9, 2012) pp. 21162-276.

Wildlands CPR and The Wilderness Society. 2013. Restoration in action: the first five year of the Legacy Roads and Trails Program. http://www.wildlandscpr.org/resources/restoration-action-report.

Wildlands CPR. 2009. Managing the Miles: A Review of Forest Service Road Policies and Practices.

Appendix - Acknowledgements

Principal Authors:

- David Alberswerth, The Wilderness Society
- Mike Anderson, The Wilderness Society
- Susan Jane Brown, Western Environmental Law Center
- Matt Dietz, The Wilderness Society
- Chase Huntley, The Wilderness Society
- Jay Lininger, Center for Biological Diversity
- Noah Matson, Defenders of Wildlife
- David Moryc, American Rivers
- Peter Nelson, Defenders of Wildlife
- Jeremy Nichols, Wildearth Guardians
- Mary O'Brien, Grand Canyon Trust
- Sarah Peters, Wildlands CPR
- Spencer Phillips, The Wilderness Society
- Adam Rissien, Wildlands CPR
- Vera Smith, The Wilderness Society
- Paul Sanford, The Wilderness Society
- Sara Vickerman, Defenders of Wildlife

Editor:

- Barbara Young, The Wilderness Society