April 3, 2015

Mr. Champe Green, Forest Planner
Cibola National Forest and National Grasslands
2113 Osuna Rd. NE.
Albuquerque, NM 87113

Sent via email and certified mail this date

Re: Notice of Intent to revise the Cibola National Forest Mountain Ranger Districts Land and Resource Management Plan and prepare an associated Environmental Impact Statement.

Dear Mr. Green:

We appreciate the opportunity to submit the attached comments in response to the Notice of Intent to revise the Cibola National Forest Mountain Ranger Districts Land and Resource Management Plan and prepare an associated Environmental Impact Statement. The referenced appendices and attachments to our comments are included in the copy sent via ground mail. If you have any questions regarding this matter, please do not hesitate to contact us.

Respectfully,

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I. Introduction

The Cibola National Forest (CNF) is comprised of four "sky island" mountainous ranger districts that span across central New Mexico and total approximately 1.64 million acres. The CNF's mountain districts rise from the desert plains offering soaring vistas. These lands are ecologically diverse and geologically unique. Many of the mountain ranges, including the San Mateos, Magdalenas, Datils, Bears, and Mt. Taylors are rugged, remote, and wild offering outstanding opportunities for unconfined, primitive recreation. The landscape has a rich history of indigenous peoples, Spanish explorers, pioneers, outlaws and the settlement of the West. Many of the roadless lands on the CNF's mountain islands border undeveloped wild lands managed by the BLM, including a handful of wilderness study areas (WSAs) and lands with wilderness characteristics (LWCs). Together, the adjacency of these national forest and BLM lands make an inter-connected network of wilderness quality lands. This landscape holds the potential to conserve some of New Mexico's most outstanding wilderness, wildlife and traditional way of life.

While the CNF's ecological integrity is quite high compared to other landscapes in the Lower 48 states, substantial areas of the forest have been intensively managed during the past century. These management activities, coupled with a century of fire suppression, accelerating climate change impacts, and intensive road building present significant opportunities for ecological restoration. The Forest Plan Revision Process is *the* opportunity to create a vision and guiding framework that will protect those natural resources that are currently intact but also restore those values that have suffered from a history of intensive use.

II. Organizational Interests

The Wilderness Society (TWS) represents more than 500,000 members and supporters who share our mission to protect wilderness and inspire Americans to care for our wild places. Since our founding in 1935, TWS has worked closely with diverse interests who care about the future of our national forests. TWS provides scientific, economic, legal, and policy guidance to land managers, communities, local conservation groups, and state and federal decision-makers. In doing so, TWS hopes to ensure the best management of our public lands. Our members in New Mexico and throughout the United States are deeply interested in forest planning as it pertains to the conservation, restoration, and protection of wildlands, wildlife, water, recreation and the ability to enjoy public lands for inspiration and spiritual renewal. Many of our members visit and recreate on the CNF.

The New Mexico Wilderness Alliance is a nonprofit organization dedicated to the protection, restoration, and continued enjoyment of New Mexico's wildlands and wilderness areas, with thousands of members across the state.

Great Old Broads for Wilderness is a national organization with more than 5100 members that inspires and engages the activism of elders to preserve and protect wilderness and wild lands. Broads give voice to the millions of older Americans who want their public lands protected as Wilderness for this and future generations. We bring experience, commitment and humor to the movement to protect our last wild places on earth. Our members, including more than 500 in New Mexico, are deeply interested in forest

planning on the CNF and many of them use and enjoy the CNF for its values such as quiet recreation and solitude, protection of wildlife and cultural resources, and clean water and air.

The New Mexico Backcountry Hunters & Anglers is a state chapter of Backcountry Hunters and Anglers (BHA) – a national non-profit organization. Our members and supporters in New Mexico and across the nation have a deep connection and longing to return to the natural world to experience the wonders that the backcountry and wilderness provide. We cherish hunting and angling and realize our outdoor traditions are inextricably linked to a healthy environment. We believe that it is a privilege to experience the awesome power of nature and wildlife and it is our responsibility to recognize its importance and therefore we strive to preserve and maintain wild country - where human beings are only visitors. BHA's members greatly value undeveloped, natural areas of our national forests and other public lands. We work to maintain the backcountry values of solitude, silence, clean and free flowing rivers and habitat for fish, fowl and large, wide-ranging wildlife. We strive to deploy a variety of legal and administrative tools to maintain these values for present and future generations.

Back Country Horsemen of New Mexico (BCHNM) is a state chapter of Back Country Horsemen of America (BCHA). BCHA chapters are active in 27 states consisting of roughly 13,000 members who are dedicated to keeping trails open for all on our public lands. There are seven chapters under BCHNM and we work closely with trail partners and federal land management agencies to clear and maintain pubic land trails.

WildEarth Guardians is a non-profit organization dedicated to maintaining, protecting, and restoring the native ecosystems of New Mexico and the American West. Guardians has an organizational interest in the proper and lawful management of these National Forests. Our members, staff, and board members participate in a wide range of hunting, fishing and other recreational activities on these National Forests, including the CNF. Guardians represents approximately 43,000 total members and e-activists.

III. General Comments about the Planning Process

A. We Appreciate that the CNF Used a General Scoping Notice and Did Not Release a Detailed Proposed Action

We appreciate that the CNF did not release a detailed proposed action with its scoping notice. A handful of early adopters have released a detailed proposed action with their scoping notice and requested that the public respond to the proposed action. We discourage the agency from taking this approach as we are concerned the agency's development of a proposed forest plan so early in the process results in NEPA, and public involvement in general, becoming simply a pro forma exercise whereby the agency, in many ways, has already decided what it wants the forest plan to include. We believe it is better if the agency releases a general scoping notice that asks the public for input about important issues that should be addressed in the plan and analyzed in the environmental analysis. By taking this approach, the agency will be more open-minded about the scope of the analysis it needs to undertake and the issues it needs to address and more responsive to public feedback. We believe that accepting and reviewing public comments before developing a proposed action or draft plan is imperative to building more trust with the public, will contribute to a better NEPA process, and will ultimately result in a better forest plan.

B. Consider the Cited Studies and Articles Best Available Science

While certainly not exhaustive, we believe the information contained in this letter and its appendices represents the best available science, which the 2012 planning rule requires the agency to utilize.[1] We ask that you regard it as such, or explain clearly why you disagree while providing the scientific basis for your analysis and conclusions.

C. We Urge the CNF to Use Standards in the Forest Plan

We urge the CNF to establish enforceable standards in the forest plan because it will ensure accountability and better environmental protection. Martin Nie (2014), a professor of forest policy at the University of Montana and a member of the national FACA committee overseeing implementation of the 2012 planning rule, recommends that the Forest Service utilize standards in second-generation forest plans:

> "Not only do law and regulation require standards, 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."[2]

We agree and encourage the CNF to establish standards in its revised forest plan. In our scoping letter, we recommend several standards for the agency to adopt.

IV. Need for Change Statements

Need for change statements paint a picture of changes necessary to address issues identified in the Forest Assessment Report, revise the current plan to be compliant with the 2012 planning rule, and present a vision for future management of the forest. Last fall, the CNF provided the public the opportunity to propose need for change statements. Based on this public input, the CNF developed proposed needs for change, which were included in the plan revision scoping notice. Subsequently, the CNF also released a detailed needs for change document, online here -- https://fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3829267.pdf -- which explains the fate of need for change statements proposed by the public.

We very much appreciate that the CNF provided the public the opportunity to participate in the crafting of the needs for change, and that the CNF posted the more detailed change statements online. While the

[1] 36 C.F.R. § 219.3 (agency "shall use the best available scientific information to inform the planning process" and "shall document how [that] information was used to inform the assessment").
[2] Nie, Martin and Schembra, Emily. 2014. The Important Role of Standards in National Forest Planning, Law, and Management. *Environmental Law Reporter* 44 ELR 10282.

proposed needs for change in the scoping notice are a good start, we believe there are a few shortcomings. We offer the following revisions and additions to the proposed needs for change:

A. Designated Areas

The scoping notice includes the following need for change:

> a. There is a need for the revised plan to provide direction for managing Inventoried Roadless Areas, including opportunities for restoration.

We agree that many Inventoried Roadless Areas (IRAs) are in need of restoration but are concerned about the agency's intention with this statement. To the extent that the agency provides management direction about restoring IRAs, we request that the CNF focus on restoring roadless character, such as the removal of unneeded roads, fences, abandoned mines and other unneeded improvements, invasive species and restoring aquatic function. We do not believe that IRAs are appropriate for mechanical vegetation treatments. Given this, we request that the CNF revise this statement to read as follows:

> a. There is a need for the revised plan to provide direction for managing Inventoried Roadless Areas, including opportunities for *restoring roadless character.*

We believe the CNF should include a need for change statement that explicitly addresses the need for additional designations. Currently, there are needs for change that address the management of designated areas and areas recommended for designation. The scoping notice does not, however, include a need for change addressing the need for additional designations. The 2012 planning rule *requires* the CNF to assess the "potential need and opportunity for additional designated areas" and "determine whether to recommend any additional areas for designation."[3] To that end, the Assessment Report identifies three areas for potential designation and cites the submission by TWS and Sierra Club that clearly identifies a need for potential designations.[4] We therefore request that the CNF include the following need for change:

> There is a need for the revised plan to recommend for designation or designate *additional areas* to provide specific management direction to unique or important resources and values that exist in the planning area.

B. Recreation

The direction for recreation management in the 1985 Land and Resource Management Plan is limited, focusing on maintaining and updating ROS settings and visual quality objectives, and visitor education. It is not sufficient to meet the substantive provisions of the 2012 planning rule or the travel management rule.

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[3] 36 C.F.R. §§ 219.6(b)(15), 219.7(b)(2)(vii).

[4] The submission of May 22, 2013 by The Wilderness Society and Sierra Club stated that the information should be considered best available science absent an explanation by the Forest Service as to why it is not. The planning rule requires the Forest Service to "[d]ocument . . . how the best available scientific information was used to inform the assessment," including "[i]dentify[ing] what information was determined to be the best available scientific information, explain[ing] the basis for that determination, and explain[ing] how the information was applied to the issues considered." 36 C.F.R. § 219.3.

Hence, we agree that there is a need to change recreation management on the forest, and agree with the elements in the need for change statement provided in the scoping notice. However, we recommend that the need for change statement be broadened to ensure that the plan meets the applicable regulatory direction. Specifically, we recommend the following language:

> There is a need to define and implement a sustainable recreation strategy on the national forest. There is a need for the plan and strategy to address: 1) the spatial allocation of sustainable settings, 2) the relationship and integration of recreation settings with other activities and uses on the forest, 3) sustainable opportunities that are compatible, reinforce the setting, and minimize conflict and resource impacts, 4) sustainable infrastructure that supports identified opportunities, is compatible with the recreational settings, and implements best management practices for water, 5) minimization of impacts related to off-road vehicles in summer and winter, and 6) better connecting people, with an emphasis on youth and underserved populations, with nature.

V. Designated, Management and Geographic Areas

A. Regulatory and Policy Framework Under the 2012 Planning Rule

The planning rule provides three general approaches for administratively protecting important conservation areas in a forest plan. The agency can establish designated areas (for the purposes of this letter, we are including areas recommended for designation in this category), geographic areas, and management areas.

The first approach is for the Forest Service to establish **designated areas.** The rule defines a designated area as "[a]n area or feature identified and managed to maintain its unique special character or purpose."[5] Specific to designated areas, the planning rule requires the following of the Forest Service:

- Identify areas that may be suitable for inclusion in the National Wilderness Preservation System (NWPS), and determine whether to recommend any such lands for wilderness designation;
- Identify the eligibility of rivers for inclusion in the National Wild and Scenic Rivers System; and
- Identify existing designated areas (e.g., botanical areas, zoological areas, paleontological areas, etc.), and determine whether to recommend any additional areas for designation.[6]

The planning rule requires that the plan must include plan components, including standards or guidelines, that will ensure the appropriate management of designated areas or recommended designated areas.[7] The Forest Service Handbook offers direction regarding the development of plan components for designated areas and recommended designated areas:

> The Responsible Official shall include plan components that will provide for appropriate management of designated areas based on the applicable authorities and the specific purposes for which each area was designated or recommended for designation. Uses and management

[5] 36 C.F.R. § 219.19
[6] 36 C.F.R. §§ 219.7(c)(2)(vii), 219.19 (definition of designated areas calls out Research Natural Areas as an example of an administratively designated area).
[7] 36 C.F.R. § 219.10(b)(1)

> activities are allowed in designated areas to the extent that these uses are in harmony with the purpose for which the area was designated. For recommended designated areas, the uses and activities allowed should be compatible with the basis of the recommendation.[8]

Further management of designated areas, in addition to plan components, is guided by policy in the Forest Service directives at Forest Service Manual 2300.

The second approach for administratively protecting important conservation areas in a forest plan is for the Forest Service to establish **geographic areas**. The planning rule defines geographic area as "a spatially contiguous land area identified within the planning area" for which specific management direction (i.e., a set of plan components) is developed. [9]

The third approach is for the Forest Service to establish **management areas** that are protective. The rule defines management area as "a land area identified within the planning area that has the same set of applicable plan components. A management area does not have to be spatially contiguous."[10]

Simply put, "geographic areas are based on place, while management areas are based on purpose."[11] Every plan is required to have management areas or geographic areas or both.[12] Forest plans use management areas or geographic areas to describe how plan components apply to specific parcels of land, with locations shown on maps. Note that designated areas, management areas, and geographic areas can overlap.

B. Factors to Consider in the Environmental Analysis

The National Environmental Policy Act (NEPA) requires federal agencies to assess the direct, indirect and cumulative environmental impacts of proposed actions, taking a "hard look" at environmental consequences and performing an analysis commensurate with the scale of the action at issue. 42 U.S.C. § 4321 *et seq*; 40 C.F.R. § 1508.8; s*ee also Metcalf v. Daley*, 214 F.3d 1135, 1151 (9th Cir. 2000); *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 348 (1989). Forest planning affects the entire landscape and can only be thoroughly and properly assessed by considering potential impacts at a comparable level. In this section of our letter, we raise several significant issues pertaining to designated, management, and geographic areas that the Forest Service must analyze in its impacts analysis in order to satisfy NEPA's requisite "hard look" analysis. Further, many of the issues raised pertain to the Forest Service's ability to achieve the rule's substantive requirement to provide for ecological sustainability, integrity and diversity. Therefore, it is necessary for the CNF to utilize this information and analyze the impacts that we raise in its EIS in order to fulfill the rule's substantive mandates.

1. Rare Ecosystems and Ecosystems that Are Under-Represented in the System of Protected Area Designations

[8] FSH 1909.12, § 24.2(1)(b)
[9] 36 C.F.R. § 219.19
[10] *Ibid.*
[11] *Id.*
[12] 36 CFR § 219.7(d)

Wilderness and other protected conservation areas are the cornerstones of most regional, national, and international efforts to conserve biological diversity and ecological processes of natural ecosystems (Bertzky *et al*. 2012). Research has shown that protected areas reduce the loss, degradation, and fragmentation of natural habitats (Bruner *et al*. 2001; Naughton-Treves *et al*. 2005) and slow the rate of extinction of threatened species that occur therein (Butchart *et al*. 2012). Conversely, federal public lands in the United States that are managed for a variety of uses including mining, logging, and motorized recreation – and not primarily for conservation purposes – do not have the same benefits. For protected areas to conserve genetic, species, and community diversity – as well as the composition, structure, function, and evolutionary potential of natural systems – they must encompass the full variety of ecosystems (Olson & Dinerstein 1998; Margules & Pressey 2000). Therefore, the representation of different ecosystem types in the NWPS and other protected areas (e.g., Research Natural Areas, ecological or botanical areas, or other conservation designations) is critically important to conserving biological diversity and ecological integrity – both substantive requirements set forth in the planning rule.

To that end, we conducted an analysis of ecosystem representation in wilderness at the national- and forest-level scales to provide the CNF with the best available scientific information. The results of that analysis (which are included and described in detail in Appendix A) show that the CNF hosts numerous ecosystem types that are poorly represented in the NWPS both locally and nationally. The ongoing wilderness inventory and evaluation and plan revision process present the Forest Service with a crucial opportunity to begin to remedy that under-representation by recommending diverse ecosystems for wilderness and other conservation-oriented designations such as Research Natural Areas (RNAs), ecological or botanical areas, etc.

We appreciate that the CNF conducted its own ecosystem representation analysis. We request that the CNF take the information from the assessment and from our analysis (detailed below and appended) and incorporate this information into its impacts and alternatives analyses under NEPA and into its recommendations for additional designated areas. The impacts analysis should consider the extent to which each alternative will contribute to/detract from protecting these ecosystems. Moreover, given the nexus between protected areas and their role in conserving biological diversity and ecological integrity, we also ask the CNF to evaluate and incorporate ecosystem representation information into its environmental analysis and plan revision, including the wilderness evaluation process and consideration of designated areas pursuant to 36 C.F.R. §§ 219.7(c)(2)(v) & (vii). Only by utilizing ecosystem representation information to establish a network of recommended wilderness and other protected areas that represent the full expression of ecosystem diversity can the Forest Service satisfy the substantive mandates of the 2012 planning rule to provide for ecological sustainability, integrity, and diversity.

Recommendation: We request that the CNF conduct an analysis to identify how well protected each ecosystem is through existing protective land designations such as wilderness and RNAs, and disclose the effect of each alternative on the protection of under-represented ecosystems and the achievement of the substantive provisions in the rule related to ecological integrity and species diversity.

2. Unique Features, Values, or Resources

The CNF is fortunate to have numerous unique features, values, and resources that likely merit recognition and protection as administrative designated areas pursuant to 36 C.F.R. § 219.7(c)(2)(v) & (vii). Some of these features likely include, but are not limited to:

1. Botanical, geological, historical, cultural, paleontological, recreational, scenic, aquatic, or zoological resources,
2. Climate refugia, migratory corridors, and other features that enhance species protection, and
3. Educational and learning areas that enhance connections with nature.

We applaud the CNF for asking the public for assistance with identifying potential additional special area designations. We believe the interactive online mapping tool is a great way to engage the public in this process and to collect important information about potential special areas across the forest. We encourage the CNF to include administrative designations as an agenda topic throughout the plan revision process at future public meetings in order to seek local public knowledge about important areas. We request that the Forest Service coordinate with other state and federal agencies to determine whether they believe there are additional areas worthy of a special designation.

Recommendation: We encourage the agency to continue engaging the public and other stakeholders to help the agency identify potential special areas for designation. We request that the agency identify unique elements that exist on the CNF, describe their current status of protection, and administratively designate in multiple alternatives including the preferred alternative those that are under-protected in order to ensure that remarkable natural and cultural resources on the forest are protected. We request that the EIS analyze and disclose the extent to which each alternative will contribute to/detract from protecting and interpreting these unique elements.

3. Protection and Restoration of Roadless Lands

Undeveloped natural lands provide numerous ecological benefits. They safeguard biodiversity, enhance ecosystem representation (see discussion above), facilitate connectivity (Loucks et al. 2003; USDA 2001; Crist and Wilmer 2002; Wilcove 1990; The Wilderness Society 2004; Strittholt and Dellasala 2001; DeVelice and Martin 2001), and provide high quality or undisturbed water, soil, and air resources (Anderson et al. 2012; Dellasalla et al. 2011). They also serve as ecological baselines to facilitate better understanding of our impacts to other landscapes (Arcese and Sinclair 1997).

Forest Service roadless lands, in particular, are heralded for their conservation values. Those values are described at length in the preamble of the Roadless Area Conservation Rule (RACR)[13] and in the Final Environmental Impact Statement (FEIS) for the RACR.[14] They include: high quality or undisturbed soil, water, and air; sources of public drinking water; diverse 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

[13] 66 Fed. Reg. at 3245-47.
[14] Final Environmental Impact Statement, Vol. 1, 3–3 to 3–7, *available at* http://www.fs.usda.gov/roaddocument/roadless/2001roadlessrule/finalruledocuments.

(e.g., uncommon geological formations, unique wetland complexes, exceptional hunting and fishing opportunities).

Numerous articles in the scientific literature similarly recognize the contribution of roadless and undeveloped lands to biodiversity, connectivity, and conservation reserve networks. For example, Loucks et al. (2003) examined the potential contributions of roadless areas to the conservation of biodiversity, and found that more than 25% of IRAs are located in globally or regionally outstanding ecoregions[15] and that 77% of IRAs have the potential to conserve threatened, endangered, or imperiled species. Arcese and Sinclari (1997) highlighted the contribution that IRAs could make toward building a representative network of conservation reserves in the United States, finding that protecting those areas would expand eco-regional representation, increase the area of reserves at lower elevations, and increase the number of large, relatively undisturbed refugia for species. Crist et al. (2005) looked at the ecological value of roadless lands in the Northern Rockies and found that protection of national forest roadless areas, when added to existing federal conservation lands in the study area, would: 1) increase the representation of virtually all land cover types on conservation lands at both the regional and ecosystem scales, some by more than 100%; 2) help protect rare, species-rich, and often-declining vegetation communities; and 3) connect conservation units to create bigger and more cohesive habitat "patches."

Roadless lands are also responsible for higher quality water and watersheds. Anderson et al. (2012) assessed the relationship of watershed condition and land management status, and found a strong spatial association between watershed health and protective designations. Dellasalla et al. (2011) found that undeveloped and roadless watersheds are important for supplying downstream users with high-quality drinking water, and that developing those watersheds comes at significant costs associated with declining water quality and availability. The authors recommend a light-touch ecological footprint to sustain healthy watersheds and the many other values that derive from roadless areas.

The Forest Service, National Park Service, and U.S. Fish and Wildlife Service recognize that protecting and connecting undeveloped areas is an important action agencies can take to enhance climate change adaptation. For example, the Forest Service's National Roadmap for Responding to Climate Change (2011) establishes that increasing connectivity and reducing fragmentation are short- and long-term actions the agency should take to facilitate adaptation to climate change.[16] The National Park Service also identifies connectivity as a key factor for climate change adaptation, along with establishing "blocks of natural landscape large enough to be resilient to large-scale disturbances and long-term changes." The

[15] Loucks et al utilize an ecosystem ranking system developed by Ricketts et al. (1999) found at Ricketts, T. H., E. Dinerstein, D. M. Olson, C. J. Loucks, W. Eichbaum, D. DellaSala, K. Kavanaugh, P. Hedao, P. T. Hurley, K. M. Carney, R. Abell, and S. Walters. 1999. Terrestrial ecoregions of North America: a conservation assessment. Island Press, Washington, D.C., USA. ("Ricketts et al. (1999) classified the biological importance of each ecoregion based on species distribution, i.e., richness and endemism, rare ecological or evolutionary phenomena such as large-scale migrations or extraordinary adaptive radiations, and global rarity of habitat type, e.g., Mediterranean-climate scrub habitats. They used species distribution data for seven taxonomic groups: birds, mammals, butterflies, amphibians, reptiles, land snails, and vascular plants (Ricketts et al. 1999). Each category was divided into four rankings: globally outstanding, high, medium, and low. The rankings for each of the four categories were combined to assign an overall biological ranking to each ecoregion. Ecoregions whose biodiversity features were equaled or surpassed in only a few areas around the world were termed "globally outstanding." To earn this ranking, an ecoregion had to be designated "globally outstanding" for at least one category. The second-highest category, or continentally important ecoregions, were termed "regionally outstanding," followed by "bioregionally outstanding" and "nationally important" (Ricketts et al. 1999).")

[16] Forest Service, FS-957b, *National Roadmap for Responding to Climate Change* at 26 (2011), *available at* http://www.fs.fed.us/climatechange/advisor/roadmap.html.

agency states that "[t]he success of adaptation strategies will be enhanced by taking a broad approach that identifies connections and barriers across the landscape. Networks of protected areas within a larger mixed landscape can provide the highest level of resilience to climate change."[17] Similarly, the Climate Adaptation Strategy adopted by a partnership of governmental agencies including the U.S. Fish and Wildlife Service calls for creating an ecologically-connected network of conservation areas.[18]

The 2012 planning rule's substantive ecological sustainability provision sanctions this reserve design and landscape connectivity approach, requiring the Forest Service to formulate "plan components, including standards and guidelines, to maintain or restore [the] structure, function, composition, and connectivity" of terrestrial and aquatic ecosystems and watersheds, taking into account stressors such as climate change.[19]

The CNF's Chapter 70 wilderness inventory will culminate with the release of a series of maps that will identify areas across the forest that are largely unroaded and undeveloped. These areas will include both IRAs and other roadless lands. Some of these Chapter 70 inventoried lands will be carried forward and recommended for wilderness in one or more alternative in the EIS. Others, however, will not be recommended for wilderness.

As detailed above, roadless lands provide tremendous ecological benefits. The CNF must analyze and disclose the impact of not protecting the conservation values of those non-IRA lands that are identified in the wilderness inventory but that are not recommended for wilderness. Specifically, the CNF must analyze the impacts of 1) not protecting the wilderness character of these lands, which includes those values identified in the Chapter 70 wilderness evaluation process, and 2) not protecting the roadless character of these lands, which includes the ecological values summarized above. This analysis must include the effect on the Forest Service's ability to achieve the rule's substantive requirement to "maintain or restore ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area" taking into account "structure, function, composition, and connectivity."[20]

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[17] National Park Service, Climate Change Adaptation, http://www.nps.gov/subjects/climatechange/adaptation.htm (last visited Dec. 23, 2014). *See also* National Park Service, *Climate Change Response Strategy* (2010), *available at* http://www.nature.nps.gov/climatechange/docs/NPS_CCRS.pdf (Objective 6.3 is to "Collaborate to develop cross-jurisdictional conservation plans to protect and restore connectivity and other landscape-scale components of resilience.").

[18] *See* National Fish, Wildlife and Plants Adaptation Partnership, *Climate Adaptation Strategy* at 55-59 (2012), *available at* http://www.wildlifeadaptationstrategy.gov/strategy.php. Relevant goals and strategies include:

> Goal 1: Conserve habitat to support healthy fish, wildlife, and plant populations and ecosystem functions in a changing climate.
>
> > Strategy 1.1: Identify areas for an ecologically-connected network of terrestrial, freshwater, coastal, and marine conservation areas that are likely to be resilient to climate change and to support a broad range of fish, wildlife, and plants under changed conditions.
> >
> > Strategy 1.2: Secure appropriate conservation status on [hig
> >
> > h priority areas] to complete an ecologically-connected network of public and private conservation areas that will be resilient to climate change and support a broad range of species under changed conditions.
> >
> > Strategy 1.4: Conserve, restore, and as appropriate and practicable, establish new ecological connections among conservation areas to facilitate fish, wildlife, and plant migration, range shifts, and other transitions caused by climate change.

[19] 36 C.F.R. § 219.8(a)(1).

[20] *Ibid.*

Further, the value and benefits of conserved and connected undeveloped lands on the CNF are that much more important in light of climate change. The CNF must analyze and disclose the value of a system of protected lands (e.g., wilderness, recommended wilderness, IRAs, RNAs, relevant designated areas) to species, including their ability to move across the landscape, taking into account predicted environmental conditions and trends.

Recommendations: The Forest Service must analyze in its impacts analysis the extent to which roadless lands across the CNF, including those identified in the Chapter 70 wilderness inventory, contribute to maintaining or restoring:

- Air, soil, and water quality;[21]
- Ecological integrity – including structure, function, composition, and connectivity – of terrestrial and aquatic ecosystems and watersheds;[22]
- System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as natural succession, wildland fire, invasive species, and climate change; and the ability of terrestrial and aquatic ecosystems on the plan area to adapt to change;[23]
- Wildland fire and opportunities to restore fire adapted ecosystems;[24]
- Opportunities for landscape scale restoration;[25]
- The diversity of ecosystems and habitat types throughout the plan area;[26]
- Key characteristics associated with terrestrial and aquatic ecosystem types;[27]
- Rare aquatic and terrestrial plant and animal communities;[28] and
- The diversity of native tree species similar to that existing in the plan area.[29]

The CNF must analyze the impacts of not protecting the wilderness character of lands identified in the wilderness inventory. The CNF must analyze the impacts that each alternative will have on roadless lands and their associated ecological and social benefits listed above. We also request that the impacts analysis identify key landscapes (e.g., San Mateo Mountains) where roadless lands are providing these ecological and social benefits, and describe the more localized impacts that each alternative will have on the benefits these places provide.

The CNF must also analyze and disclose the value of a system of protected lands (e.g., wilderness, recommended wilderness, IRAs, RNAs, relevant designated areas) to species, including their ability to move across the landscape, taking into account predicted environmental conditions and trends.

4. Cross-Boundary Conservation Opportunities To Protect Regionally Significant Roadless Areas

[21] 36 C.F.R. § 219.8(a)(2)
[22] *Id.* § 219.8(a)(1)
[23] *Id.* § 219.8(a)(1)(iv)
[24] *Id.* § 219.8(a)(1)(v)
[25] *Id.* § 219.8(a)(1)(vi)
[26] *Id.* § 219.9(a)(2)
[27] *Id.* § 219.9(a)(2)(i)
[28] *Id.* § 219.9(a)(2)(ii)
[29] *Id.* § 219.9(a)(2)(iii)

There are a handful of places across the CNF where roadless lands are contiguous to BLM WSAs and proposed LWCs. We believe all of these Forest Service roadless lands have wilderness characteristics; the CNF identified some of these lands in its preliminary wilderness inventory. The places where this adjacency occurs are as follows:

- Preliminary wilderness inventory polygons D2_5K12, D2_5K11, and D2_5K10 in the far northeast corner of the Mt. Taylor Ranger District are adjacent to the Ignacio Chavez WSA, Chamisa WSA, and the proposed Chamisa LWC in the BLM's Rio Puerco Field Office.
- The Ryan Hill IRA in the Magdalena Ranger District's Magdalena Mountains is directly adjacent to the Devils Backbone and Devils Reach WSAs and the Ladron Mountain – Devils Backbone Complex ACEC in the BLM's Socorro Field Office.
- The 1,588 acre tract of land adjacent to the northeast corner of the Scott Mesa IRA in the Magdalena Ranger District's Bear Mountains serves as a bridge to the Sierra Ladrones WSA in the BLM's Socorro Field Office.

Although the latter two areas were improperly excluded from the CNF's preliminary wilderness inventory, we are hopeful that the agency will correct this oversight and include them in its final inventory. These contiguous Forest Service/BLM roadless areas provide potential opportunities to protect larger roadless tracts that include lower and higher elevation lands and often provide conduits for wildlife between highlands and lowlands.

Enhancing these cross-boundary opportunities is the fact that the CNF has regionally significant wild areas. In 2000, Aplet et al. applied an index to map "wildness" across the contiguous United States. The index was based on aggregated values for six attributes: solitude, remoteness, uncontrolled processes, natural composition, unaltered structure, and pollution. Although there are a number of wildness indices in the literature, Aplet's index in particular enables a consistent comparison of wildness values across a region and the country, and highlights larger landscapes with wildness values and the potential to connect them. With respect to the region encompassing the CNF, Aplet's index shows that the CNF contains some of the wildest areas in New Mexico and the surrounding region (see Appendix B). In addition, at a landscape scale, the lands within the CNF are important pieces in a larger network of wild lands in central and southern New Mexico that includes BLM WSAs, designated wilderness, US Fish and Wildlife Service Refuges, and Ted Turner's Pedro Armendaris Ranch.

Recommendations: There are several places where Forest Service roadless lands (some are IRAs while others are not) are contiguous or proximal to BLM roadless lands. Further, this cross-agency network of roadless land is enhanced by the fact that the CNF contains lands that are wild relative to other places regionally and nationally. The CNF's impacts analysis must recognize the contiguous BLM roadless lands, and analyze and disclose how the roadless lands managed by the CNF contribute to the conservation of a larger undeveloped, wilderness quality landscape that includes BLM WSAs and LWCs.

5. Socio-Economic Benefits of Wilderness

In addition to its ecological values, protected areas, including wilderness, are important because they contribute to people's social and economic well-being. When analyzing the impacts of recommending

areas for wilderness, we request that the agency include important socio-economic considerations, including the positive impacts, of wilderness. This section offers information about some of these impacts for the agency to consider in its impacts analysis.

a. Wilderness in New Mexico is under-represented compared to other states.

New Mexico comparatively has less designated wilderness than other western states. Consider the following statistics:

- Nationally, designated wilderness represents just over 18% of all National Forest System acres. In Region 3, designated wilderness represents about 13% of all National Forest System acres.
- For wilderness acres in the region to achieve the national average would require the addition of about one million acres.
- Only 2% – or 1,695,596 acres – of New Mexico's total land base is protected as federally designated wilderness by all federal land management agencies, the smallest amount of the eleven western states.
- The CNF's current forest plan recommends 0 acres for wilderness designation.

b. Participation in outdoor, nature-based recreation is steady or on the rise.

Recreational surveys show that Americans are participating in increasing numbers in recreational pursuits that natural areas such as wilderness provide. According to Cordell (2008a), both the total number of Americans and the total number of days annually in which we participate in nature-based recreation have grown since 1994. In particular, viewing, photographing, and studying nature (e.g., wildlife and birds), have grown strongly (see Table 1 below under the Sustainable Recreation section of this letter) and primitive camping and backpacking days increased 12% and 24%, respectively, between 2000 and 2008 (Cordell 2008a).

In addition, a significant percentage of Americans participate in outdoor recreation. For instance,

- Across the country, an estimated 35% of Americans, both urban and rural residents, participated in birding between 2004 and 2007 (Cordell 2008b).
- More than 90 million U.S. residents participated in some form of wildlife-related recreation in 2011. Participation is up 3% from five years earlier. The number of American's who hunted or fished rose from 33.9 million in 2006 to 37.4 million in 2011 (USFWS 2011).
- Americans take between 16 and 35 million trips to wilderness each year on their own or with a guide to hike, backpack, camp, climb mountains, ride horses, ski, raft, canoe, take pictures, view wildlife, or stargaze (Cordell 2005).

Specific to New Mexico and the Southwest region, recent surveys demonstrate that New Mexicans are very active in the outdoors:

- 47%, 27% and 17% of New Mexicans report that they day hike, primitive camp, and backpack, respectively, compared to 33%, 16%, and 11% of Americans nationally (Cordell, 2004).

- In 2012, 50% of New Mexico voters reported that they are regular hikers or campers, and more than 33% engage in other outdoor activities such as bird watching or boating. Forty-one percent identify themselves as a hunter or angler (Colorado College, 2013).
- Two-thirds (67%) of New Mexicans plan to visit a national park in the next year (Colorado College, 2013).
- Despite their high level of outdoor activity, 87% of New Mexico voters say children not spending enough time outdoors is a serious problem (Colorado College, 2013).

Specific to the CNF, the 2011 National Visitor Use Monitoring Report cites the two most popular recreational activities by far are hiking/walking and viewing natural features with 35% and 15% of CNF visitors citing these as their main activities, respectively (USFS 2011: 21). This compares to non-wilderness compatible activities such as off-highway vehicle riding in which less than 1% of the CNF visitors participate as their main activity (see Table 2 below under the Sustainable Recreation section).

c. Wilderness visitation is predicted to continue growing.

- The number of days Americans visited wilderness and other primitive areas increased 12% between 2000 and 2008. The number of participants visiting a wilderness area increased 3% in the same time period (Cordell 2008).
- Bowker predicts that population growth in expanding cities in the West and Southwest in particular will result in increased use in wildernesses in the vicinity (Bowker et al. 2006).
- It can also be expected that population increases in the communities adjacent to the National Forests will occur because of their attractiveness in terms of the availability of quality outdoor recreation experiences, clean air and water, and a natural setting (USDA 2005).

Region 3 of the Forest Service echoes these conclusions in its wilderness evaluation guidance for forest planning under the 1982 planning rule, stating:

- Increased demand for additional wilderness in New Mexico should be anticipated based on population growth during the period of 2000 to 2010, which exceeded the national growth rate.
- Public demand increases with proximity to Albuquerque as a major population center in New Mexico and the southwest.
- Some additional public demand for wilderness in the Southwestern Region will occur from the influx of people moving to communities in the vicinity of the National Forests.
- Desirability of the scenic mountainous settings available in the rural communities within and adjacent to national forests in the Southwestern Region will attract new retirees and others, further contributing to a growth in wilderness visitation.
- In terms of geographic distribution of wilderness, the Southwestern Region is under-represented with five percent fewer wilderness acres as compared with the representation nationally. Additionally, all quadrants in Arizona and New Mexico are under-represented with the exception of the southwest and southeast quadrants in Arizona. The most under-represented quadrants are

southeast and northwest New Mexico, and northeast Arizona which are at 6 percent or less in the number of wilderness acres (compared with total federal wilderness acres).[30]

d. Economics benefits of protected public lands

Based on a wealth of existing rigorous and scientifically validated research, the general rule is that there is a neutral-to-positive relationship between the presence and extent of wilderness and other protected areas on one hand, and the economic performance of local economies and the economic benefits available to nearby residents on the other (see Appendix C). Here are just a few examples from this body of research:

- A recent study of the Rio Grande del Norte National Monument found that the expected annual economic impacts of National Monument designation could reach $32.2 million, which represents an increase of approximately $15 million in regional economic activity. Following Monument designation, operations and visitor spending associated with the Rio Grande del Norte area would be expected to increase to about 591 jobs, an increase of 279 jobs (BBC Research & Consulting 2012).
- Protected public lands can and do play an important role in stimulating local economic growth, especially when combined with access to markets and an educated workforce, and are associated with some of the fastest growing communities in the West (Rasker 2006 and Rasker et al. 2009).
- Wilderness designation enhances nearby private property value (Phillips 2004).
- Wilderness and conservation lands are associated with rapid population, income, and employment growth relative to non-wilderness counties (Lorah and Southwick 2003; Lewis, Hunt and Plantinga 2002).
- There is no evidence of job losses associated with wilderness and no evidence that counties more dependent on logging, mining, or oil and gas suffered job losses as a result of wilderness designation in 250 non-urban counties in the Rocky Mountains (Duffy-Deno 1998).
- The total annual value of retaining the wilderness character associated with IRAs in New Mexico ranges up to $42 million for maintenance of water quality, $24 million for carbon sequestration, $26 million for outdoor recreation, $14 million for passive uses, and $1.4 million in enhanced property values. Annual community effects range up to 938 jobs and $23 million in personal income. (Berrens, Talberth, Thacher, Hand 2006).

Recommendations: When analyzing the impacts of recommending areas for wilderness, we request that the agency include in its analysis the following socio-economic considerations:

- The economic benefits of protected lands, including wilderness,
- The projected increase in wilderness visitation rates,
- The increased participation in outdoor, nature-based recreation, and
- The under-representation of designated wilderness in New Mexico when compared to other states.

B. Alternatives to Consider in the EIS

[30] USDA Forest Service Southwestern Region, Regional Demand for Wilderness, Wilderness Evaluation Guidance for Forest Planning.

The "heart" of an EIS is its exploration of alternatives to the proposed action: the agency must "[r]igorously explore and objectively evaluate all reasonable alternatives."[31] The alternatives analysis allows agencies to "sharply defin[e] the issues and provid[e] a clear basis for choice among options by the decisionmaker and the public."[32] Alternatives are important because:

> Ultimately, of course, it is not better documents but better decisions that count. *NEPA's purpose is not to generate paperwork – even excellent paperwork – but to foster excellent action*. The NEPA process is intended to help public officials make decisions that are based on [an] understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.[33]

The agency is not required to consider every conceivable alternative to a project. Rather it must consider a range of reasonable alternatives that will foster informed decisionmaking and public participation. Reasonable alternatives are those that are viable, feasible, meet the stated goals of the project, and are distinguishable from the alternatives already considered.[34] "[A]n agency must look at every reasonable alternative, with the range dictated by the nature and scope of the proposed action, and sufficient to permit a reasoned choice."[35]

In the context of administrative designations, a range of reasonable alternatives would include alternatives that to varying degrees emphasize conservation in the form of wilderness recommendations, wild and scenic river eligibility findings, roadless and wildlife protection, and other conservation management. The Forest Service Handbook guides managers to "[d]evelop other alternatives fully and impartially…[and] ensure that the range of alternatives does not prematurely foreclose options that might protect, restore, and enhance the environment."[36]

In other parts of this letter, we provide numerous recommendations on elements – including standards, guidelines, and other forest plan components – that should be included in alternatives. The purpose of this section of the letter is to provide information on specific elements related to designated areas. We request that the agency please contact us if it is considering eliminating a recommendation proposed in our letter from detailed study in an alternative in order to give us a chance to clarify any confusion or misunderstandings that may be cause for elimination.[37]

1. Lands Documented with High Conservation Values by a Coalition of Citizens

From 2012 through 2014, a coalition of conservation, recreation, and sportsmen organizations conducted fieldwork on the CNF to identify unprotected areas of high conservation value. It identified seven areas, six of which are located on the Magdalena Ranger District. Brief descriptions of the seven areas are provided below. The citizen coalition will be providing more detailed information about the conservation

[31] 40 C.F.R. § 1502.14
[32] *Id.*
[33] 40 C.F.R. § 1500.1(c))(emphasis added); *see also* 40 C.F.R. § 1500.2(e)
[34] *See New Mexico ex rel. Richardson v. BLM*, 565 F.3d 683, 708-10 (10th Cir. 2009); *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519-20 (9th Cir. 1992)
[35] *Idaho Conservation League*, 956 F.2d at 1520 (internal quotations and citations omitted).
[36] FSH 1909.15 § 14.2
[37] *See* 40 C.F.R. § 1502.14(a) (agency must provide rationale for eliminating alternatives from detailed study).

values of these areas in a supplement to this scoping letter; the CNF should expected to receive this information in April 2015. We request that the CNF recognize the conservation values of the seven areas, and protect them by establishing plan components, including standards and guidelines, in multiple alternatives, including the preferred alternative, that would protect their roadless character and natural values. We fully recognize that the CNF contains many more areas with important conservation values that deserve elevated protections in the forest plan. The coalition is requesting protections for these seven areas because we had limited resources to conduct fieldwork and document the conservation values, not because other areas do not merit consideration and protection.

a. Greater Guadalupe Canyon Area

The Guadalupe area encompasses the roadless lands in the remote, far northeastern corner of the Mt. Taylor Ranger District in Sandoval County and is about a 2.5 hour drive from Grants, NM. The area is adjacent to an interconnected network of BLM WSAs in the Rio Puerco Field Office. The area encompasses several major canyons, including Guadalupe Canyon and Cañon Salado. The absence of any significant human development within or near the area has helped to keep it isolated and predominantly natural. The scenery found throughout the area is exceptional, with several deep canyons, numerous open meadows, and expansive ridgelines that provide remarkable views. Opportunities to find solitude and experience wild nature are abundant in the area. It boasts a variety of wildlife including large elk herds, mule deer, black bear, mountain lion and Merriam's turkey. Opportunities for backcountry hunting are rich. Primary access to the Guadalupe area is via Forest Road 239, 194A, and BLM Road 1103. However, both Forest Road 239 and BLM Road 1103 have seasonal closures between July 1 – September 14 and November 15 – April 14. Protecting this area would not result in a change in public access.

b. Datil Mountains

The Datil Mountains are an isolated landscape located just north of the town of Datil. The area is about 61,000 acres and overlaps with the Madre Mountain and Datil IRAs. The area includes the major ridgeline of Madre Mountain, which is sacred ground to the Acoma, Laguna, and Zuni tribes, as well as several other unnamed peaks and ridges (Basham, 2011). The scenery found throughout the area is alluring, with significant geological features, numerous open meadows to explore, steep-sided hills cloaked with dense conifer forest, and dramatic ridgelines that offer exceptional views. Outstanding opportunities for hiking, camping, backpacking, hunting, rock climbing, horseback riding and other forms of primitive, dispersed recreation are excellent in the area given its natural and rugged character, quality habitat, remarkable views, and size. Thompson Canyon is a special draw for rock climbers seeking a challenging experience in the backcountry, while Main Canyon invites would-be explorers to venture through the numerous open meadows and sheer-walled canyons common throughout the area. The Datils contain a variety of high-quality habitats, which is a primary reason the area is rich with wildlife including mountain lion, mule deer, black bear, coyote, and Merriam's turkey.

c. Magdalena Mountains

The Magdalena Mountains area is about 49,300 acres and is located approximately twenty miles west of the town of Socorro above the Rio Grande Valley. The unit comprises several major canyons, including

Sixmile Canyon, South Canyon, and the east and west forks of Sawmill Canyon. The scenery found throughout the area is exceptional, with numerous secluded canyons to explore, towering ridge lines that afford dramatic views and an abundance of opportunities for solitude and experience wildness. Outstanding opportunities for hiking, camping, backpacking, hunting, horseback-riding, star-gazing and other forms of primitive recreation are excellent in the area given its natural and rugged character, high-quality habitat, expansive vistas, breath-taking night sky, and access via numerous non-motorized trails. Both the Water Canyon Campground and Group Campground sites are located on the north side of the area, providing immediate access to those seeking a primitive experience. The area offers visitors adventure and solitude, and demands self-reliance. The BLM's Devil's Backbone and Devil's Reach WSAs are immediately adjacent to the southern edge of the Magdalena Mountains area. Establishment of the Langmuir Research Site by Congress in 1980 has helped preserve the area's overall naturalness. The variations in elevation provides for a large diversity of vegetative types. The area contains a variety of high-quality habitats, which is a primary reason that an abundance of wildlife exists in the area. The area has been designated as critical habitat for Mexican Spotted Owl (MSO) and, due to its species richness and ecological diversity, falls within a Nature Conservancy key conservation area (TNC, 2004). It is also considered priority crucial habitat by the New Mexico Department of Game and Fish in its Crucial Habitat Assessment Tool (CHAT). Observations and signs of mountain lion, pronghorn, mule deer, black bear, coyote, red and gray fox, were all surveyed in the field. Bird species common to the region include bald and golden eagle, prairie falcon, kestrel, Mearn's quail, and species of hawks and owls.

d. Scott Mesa

The Scott Mesa area is located just north of the town of Magdalena in Socorro County. The area is about 48,000 acres and comprises the majority of the Bear Mountains. A visitor can feel alone and remote just about anywhere in the area due to its rugged character and size. The adjacency of the 45,308-acre Sierra Ladrones WSA enhances the sense of isolation and solitude. When in the area, a visitor feels as if they are the only one in a vast expanse of ridges and canyons. Because of its remoteness, the area has remarkable nighttime darkness which makes it particularly good for amateur astronomy and stargazing. Backcountry hunting and wildlife watching are also rich in the area as the well-functioning ecosystems are able to sustain healthy herds of mule deer and numerous bird species. The Mountains are locally known for their hunting attractions, but receive relatively little use from other recreational users. The New Mexico Department of Game and Fish's harvest records indicate that Game Management Unit 13, which encompasses the Bear Mountains, offers good turkey and high quality elk hunting. Because of the springs in the region, the range is rather popular amongst birders.

e. San Mateo Mountains

We have identified three core important conservation areas in Socorro County's San Mateo Mountains: the roadless lands that are immediately east and southwest of the Withington Wilderness and the roadless lands that encircle the Apache Kid Wilderness. We describe all three of these areas here.

The San Mateo Mountains are one of the most remote areas in New Mexico. Running about 40 miles long, most of the mountain range is unroaded, isolated and natural. The San Mateos rugged character, two designated wilderness areas and several IRAs have contributed to keeping the area natural and free of

human development. Seclusion takes over once visitors leave the boundary roads. It is here where visitors enter a wild place untrammeled by humans and primeval in character. Moreover, there is a sense of vastness on a grand scale: at night, a complete lack of light pollution provides exceptional stargazing opportunities. The scenery found throughout the area is exceptional, with numerous open canyons to explore and high ridgelines with dramatic views. The rugged rock formations and steep canyons in the area are themselves spectacular and unusual, but the panoramic views from atop the canyon rims are breathtaking. From these canyon rims, views to the east are immense and awe-inspiring. The area's size, roadless characteristics, rugged character, remarkable views, vegetation, and proximity to the Withington and Apache Kid Wilderness Areas create outstanding potential for solitude as well as unconfined and primitive forms of recreation. Opportunities to experience backcountry hunting are also rich. Habitat is plentiful and well-functioning ecosystems sustain healthy herds of elk, mule deer, turkey, and quail. In addition, the area has been designated as critical habitat for MSO and, due to its species richness and ecological diversity, falls within a Nature Conservancy key conservation area (TNC, 2004). It is also considered priority crucial habitat by the New Mexico Department of Game and Fish in its CHAT. The San Mateo Mountains are not known for containing considerable quantities of water, yet the area features several fresh water springs that are not delineated on most maps. These springs undoubtedly help to contribute to the health and vitality of the many wildlife species common throughout the area.

Recommendations: We request that the CNF recognize the high conservation value of the seven areas documented by a citizen coalition, and protect them by establishing plan components, including standards and guidelines, in multiple alternatives, including the preferred alternative, that would conserve their roadless character and natural values.

2. Lands Found To Have Wilderness Characteristics in the Wilderness Evaluation Process

Given that the Forest Service must analyze a reasonable range of alternatives, we request that the CNF recommend for wilderness all lands found to have wilderness characteristics through the wilderness evaluation process at FSH 1909.12, § 72. Recommending all qualifying lands for wilderness designation in at least one alternative is reasonable, since the action would fit squarely within the purpose of the plan revision and is viable and feasible under current laws and regulations.

Recommendation: We request that the CNF analyze at least one alternative that recommends for wilderness all lands found to have wilderness characteristics through the wilderness evaluation (FSH 1909.12, § 72).

3. Management of Recommended Wilderness Areas

The planning rule requires that the plan include plan components, including standards and guidelines, 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."[38] The

[38] 36 C.F.R. § 219.10(b)(1)(iv). The FSH provides detail to this provision stating that "[t]he plan may include one or more plan components for a recommended wilderness area that:

1. Enhance the ecological and social characteristics that provide the basis for wilderness designations;
2. Continue existing uses, only if such uses do not prevent the protection and maintenance of the social and ecological characteristics that provide the basis for wilderness designation;

Forest Service, therefore, has the discretion to allow mechanized and motorized use in recommended wilderness so long as such use does not diminish the ecological and social characteristics that provide the basis for their suitability for wilderness designation. However, it is our experience that allowing incompatible uses in recommended wilderness areas can impair wilderness character. Incompatible uses can also lead to a reduction in wilderness potential because the use becomes accepted and expected in these areas, which can lead to a lower likelihood of designation. TWS submitted a letter to Chief Tidwell in 2009 (attached as Appendix D) that documents examples where non-conforming uses in areas recommended for wilderness has reduced wilderness potential and compromised wilderness values.

In a recent report (attached as Appendix E), the Idaho Conservation League (ICL) examined the effects of allowing incompatible modes of access in recommended wilderness areas and concluded that allowing incompatible uses in certain circumstances can lead to a diminishment in wilderness character and wilderness potential.[39] The Forest Service's own observations affirm the conclusions found in the ICL report. Staff on the Clearwater National Forest recently assessed the wilderness character of areas recommended for wilderness in 1978. Their analysis found that the wilderness character of half of the areas was degraded in the intervening years, simply by the continued and expanded use of motorized and mechanized vehicles.[40] Region 1 of the Forest Service affirmed this reality in a regional document in which it stated: "In some areas, uses have changed or certain types of use have increased significantly, possibly degrading wilderness characteristics."[41]

In order to avoid a situation where wilderness character is degraded and wilderness potential is reduced for recommended wilderness areas, we request that the Forest Service disallow mechanized and motorized use in these areas. Only by developing plan components that manage recommend wilderness consistent with designated wilderness will the CNF satisfy the rule's direction to maintain the ecological and social characteristics that provide the basis for the area's suitability for wilderness designation. Additionally, we request that the CNF categorize our proposed recommended wilderness areas in the primitive or semi-primitive non-motorized Recreation Opportunity Spectrum (ROS) classifications in order to ensure the management direction within the forest plan is consistent across management schemes.

We also request that the Forest Service manage fire in recommended wilderness the same as how it manages fire in designated wilderness, both in terms of pre-suppression actions and its response to active

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3. Alter existing uses, subject to valid existing rights; or
4. Eliminate existing uses, except those uses subject to valid existing rights." FSH 1909.12, § 74.1.

[39] Idaho Conservation League. *In Need of Protection: How Off-Road Vehicles and Snowmobiles Are Threatening the Forest Service's Recommended Wilderness Areas.* 2011. (The authors document the on-the-ground conditions resulting from the application of two different approaches to managing recommended wilderness: Region 1, which includes the national forests in northern Idaho, generally disallows motorized travel in areas recommended for wilderness, and Region 4, which includes the national forests in southern Idaho, generally allows motorized travel. The report concludes that wilderness character is being degraded considerably more in Region 4 forests more than in Region 1 forests from allowed motorized use.)

[40] Clearwater National Forest, Travel Planning Draft Environmental Impact Statement. pp. 3-81 to 384 ("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. . . . 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 for designation once motorized use has become established.")

[41] Consistency in Land and Resource Management Plans, USDA FS Region One, 8/25/2008

fires. Federal fire policy and Forest Service wilderness policy recognize the important role that fire plays in ecosystems. Fire, behaving within its historical range of variation, has been shown to lower fuel loads, diversify and renew vegetation structure, create wildlife habitat, renew soil nutrients, and limit the growth of subsequent fires. Managing fires for their benefits has also been shown to lower exposure of firefighters to risk and to reduce per-acre costs of fire management relative to suppression. It is federal policy to use fire "to protect, maintain, and enhance resources and, as nearly as possible, be allowed to function in its natural ecological role."[42] Often, wilderness and recommended wilderness, because of its remoteness from resources at risk, is the best place to achieve this goal.

Recommendations: In order to be compliant with the 2012 planning rule in terms of managing areas recommended for wilderness, all action alternatives must include plan components that "protect and maintain the ecological and social characteristics that provide the basis for their suitability for wilderness designation."[43] In order to comply with this direction, we request that the CNF establish a standard that would manage areas recommended for wilderness exclusively for non-motorized and non-mechanized uses. We request that the CNF categorize recommended wilderness areas in the primitive or semi-primitive non-motorized ROS classifications. Lastly, we request that the CNF manage fire in recommended wilderness identical to how it manages fire in designated wilderness.

4. Inventoried Wilderness Areas that Are Not Recommended for Wilderness

As a part of the Chapter 70 process, the agency will inventory and evaluate lands for consideration in the NWPS. Some lands included in the final wilderness inventory will not be recommended for wilderness. These inventoried-but-not-recommended lands will be a mix of IRA and non-IRA lands; they constitute a set of lands within the CNF that are categorized as roadless and are largely undeveloped.

We request that the Forest Service maintain the roadless character of Chapter 70 inventoried areas that are not recommended for wilderness in multiple alternatives including the preferred alternative. First and foremost, this is a reasonable request since it preserves the status quo of current roadless lands, fits within the purpose of the plan revision, and is feasible and viable under current regulation and policy.[44] Moreover, maintaining and enhancing the roadless character of these lands will contribute to the achievement of the substantive provisions in sections 219.8, 219.9, and 219.10 of the planning rule. As we described in section V-B(3) of this letter, roadless lands are ecologically important and play a critical role in ensuring the persistence of species, providing connectivity, and ensuring watershed functionality, which is only more important in light of climate change.

Recommendations: We request that the CNF maintain and restore the roadless values and wilderness character of Chapter 70 inventoried areas that are not recommended for wilderness in multiple alternatives including the preferred alternative. We request that the agency adopt the following plan components for these areas:

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[42] Federal Wildland Fire Management Policy. 1995. Available online at www.wilderness.net/NWPS/policyfire.
[43] 36 C.F.R. § 219.10(b)(1)
[44] Forest Service policy gives the agency discretion to decide the fate of non-recommended wilderness inventory lands. One possible management scenario is the maintenance and enhancement of roadless character. ("Inclusion in the inventory is not a designation that conveys or requires a particular kind of management." FSH 1909.12, § 70.62(a))

- A desired condition statement about the contribution these areas provide to achieve landscape level connectivity, provide for wildlife movement and secure habitat, and preserve opportunities to experience some qualities of wilderness character. We propose the following statement: *Large remote areas with little human disturbance such as those found in these inventoried areas are retained and contribute to habitats for species with large home ranges. These inventoried areas contribute to a larger connected network of conservation lands comprised of wilderness and recommended wilderness. Habitat conditions within these areas contribute to wildlife movement within and across the Forest. These areas also provide foraging, security, denning, and nesting habitat for wildlife. These areas preserve opportunities to experience wilderness character, wildlife connectivity, and the ecological integrity of the Forest's sky islands. Integrated restoration will be implemented to remove unneeded improvements that degrade these qualities. Mechanized use and motorized traffic on designated routes as shown on the MVUM will be allowed.*

- Objectives that say:
    - *Unneeded improvements that degrade roadless values, wilderness character, including supplemental values as identified and documented in the wilderness evaluation process, and/or ecological function will be restored;*
    - *Roadless values and wilderness character, including supplemental values as identified and documented in the wilderness evaluation process, will be maintained;*
    - *Mechanized and motorized use on designated routes as displayed on the Motor Vehicle Use Map will be allowed.*

- A guideline that says: *no new road construction is allowed*.

5. Research Natural Areas

a. Policy Framework

A required element in forest planning is to determine whether to recommend additional areas for designation.[45] One type of designated area that the Forest Service is expected to address in the land management planning process is Research Natural Areas (RNAs).[46] Forest Service policy requires each forest to establish and periodically amend, primarily through additions, RNAs that achieve the eight objectives listed in FSM 4063. Two of these objectives are "maintain a wide spectrum of high quality representative areas that represent the major forms of variability found in forest, shrubland, grassland, alpine, and natural situations that have scientific interest and importance that, in combination, form a national network of ecological areas for research, education, and maintenance of biological diversity" and "[p]reserves and maintains genetic diversity, including threatened, endangered, and sensitive species."[47]

[45] 36 C.F.R. §§ 219.7(c)(2)(vii), 219.19 (definition of designated areas calls out Research Natural Areas as an example of an administratively designated area).
[46] FSM 4063.03 ("The selection and establishment of Research Natural Areas within the National Forest System primarily emerges from continuing land and resource management planning and associated environmental analyses (FSM 1920 and FSM 1950). Forest plans shall include analysis of, and recommendations for, the establishment of proposed Research Natural Areas.")
[47] FSM 4063.02

In identifying potential RNAs, the Forest Service is supposed to establish a Regional RNA Committee to "identify the need for Research Natural Areas on National Forest System lands and to ensure that prospective areas are identified in the forest planning process."[48] In addition, the Forest Service is required to "cooperate with universities, private and professional organizations, and State and other public agencies to establish…. a national network of Research Natural Areas....'"[49] In selecting and establishing RNAs, Forest Service policy directs that RNAs should be "large enough to provide essentially unmodified conditions within their interiors which are necessary…to protect the ecological processes, features, and/or qualities for which the Research Natural Areas were established."[50] The policy also emphasizes that "landscape-scale RNAs that incorporate several ecosystem elements are ideal, where feasible."[51] Proposed areas, to the degree possible, should be free from major human disturbance for the past 50 years, and should, where possible, encompass entire small drainages because they are easier to delineate and protect, and because they better maintain the interrelationships of terrestrial and aquatic systems.[52]

Lastly, plan components for recommended RNAs are required to maintain the recommended designated area for "Research and Development, study, observation, monitoring, and those educational activities that do not modify the conditions for which the Research Natural Area was established."[53]

b. RNAs on the CNF

The CNF has only one established RNA. It is the Bernalillo Watershed RNA and comprises 299 acres of juniper grassland and 731 acres of semi-desert grassland.[54]

c. Information on RNAs in the Final Assessment Report

The CNF's Assessment Report does not discuss recommendations, analyses reports or other documents related to the identification of RNAs in the CNF or the broader southwest region, and does not mention recommendations or input provided by any source, including an internal regional RNA committee or by cooperating academics, agencies, and organizations. The Assessment Report, however, includes information on how well each of the 31 Ecological Response Units (ERU) on the forest are represented in RNAs or Wilderness on the CNF, and concludes that 22 ERUs (71%) are represented under a 20% threshold,[55] 12 ERUs are not represented at all, and 18 ERUs are represented at less than the 5% level. The report also states that one other area, Little Water Canyon (919 acres) was identified in the 1985 land management plan as a suitable RNA candidate but the establishment process was never completed.[56]

[48] FSM 4063.04(b)(2)
[49] FSM 4063.03
[50] FSM 4063.1
[51] *Ibid.*
[52] FSM 4063.2
[53] FSM 4063.02
[54] Assessment Report of Ecological / Social / Economic Conditions, Trends, and Risks to Sustainability, Cibola National Forest Mountain Ranger Districts, Volume 2. February 9, 2015. Page 202
[55] The International Convention on Biological Diversity (ICBD) recommends that *at least* 17% of the world's terrestrial areas be conserved by 2020 (Woodley *et al*. 2012). Given that the ICBD's 17% threshold serves as the floor, we believe 20% is a more reasonable target for biodiversity conservation purposes.
[56] Cibola National Forest Assessment, vol. II, p. 202.

d. RNAs in the land management plan revision and EIS

In order to comply with current policy on RNAs, the Forest Service in the planning process must identify the need for additional RNAs on the CNF in coordination with academics, NGOs, state agencies, etc., using the established objectives of the RNA system at Forest Service Manual (FSM) 4063.02 as criteria:

1. Maintain a wide spectrum of high quality representative areas that represent the major forms of variability found in forest, shrubland, grassland, alpine, and natural situations that have scientific interest and importance that, in combination, form a national network of ecological areas for research, education, and maintenance of biological diversity.

2. Preserve and maintain genetic diversity, including threatened, endangered, and sensitive species.

3. Protect against human-caused environmental disruptions.

4. Serve as reference areas for the study of natural ecological processes including disturbance.

5. Provide onsite and extension educational activities.

6. Serve as baseline areas for measuring long-term ecological changes.

7. Serve as control areas for comparing results from manipulative research.

8. Monitor effects of resource management techniques and practices.

In doing so, the CNF should identify opportunities to establish RNAs that are large enough to provide for unmodified conditions and processes in the area's core, and landscape-scale RNAs that incorporate several ecosystem elements, as directed in the Manual and by the principles of conservation biology. Protecting as RNAs several adjacent intact habitats enables the protection and study of the individual systems and their interactions. Moreover, redundant areas may be necessary to maintain a range of study areas and sufficient population sample sizes.[57] In addition, the CNF should use the ecosystem representation information presented in the Forest Assessment Report to inform its needs for change, specifically in terms of identifying a need for additional RNAs. It is important that the CNF also use the ecosystem representation information to make recommendations for additions to the RNA system. We suggest that the CNF's recommendations for additions to the RNA system will, when designated, ensure at least 20% representation in each of the ERUs present on the forest.[58] The EIS must disclose and analyze the impacts of the recommended RNAs to the RNA system and its objectives under each alternative. In those alternatives where the recommended RNA additions fail to achieve at least 20%

[57] Spatial redundancy of ecological subsystems is desired for purposes of experimentation and replication. Redundancy of subsystems or components of an ecosystem is also important to conservation planning. Redundancy can reduce the likelihood that elements (e.g., species, rare habitats) will be lost as a result of stochastic events or other stressors.

[58] In determining ERU representation in the RNA system, it is inappropriate to use wilderness as a proxy for RNAs. Both designations provide high levels of protection but they have different management requirements and objectives. It may be that the most pristine examples of ecosystems overlap with wilderness. In those cases, the CNF should create overlapping designations that will ensure management of the overlapped designated areas conforms to the requirements for both wilderness and RNAs.

representation, the EIS must explain how the CNF is meeting its substantive responsibilities for establishing a RNA system that achieves the identified objectives.

Climate change presents a special challenge, with the potential for ecosystem boundaries and characteristics to shift within short timeframes. In recommending RNA designations, the CNF must take into account the possible effects of climate change on the existing RNA and recommended RNAs by making RNA boundaries larger to give ecosystems and species room to survive and adapt. The Forest Service should create landscape-scale RNAs when possible that protect multiple and proximal intact ecosystems as well as protect zones between RNAs to enable plant and animal species migration. The EIS must analyze and disclose the effect of climate change on the proposed RNA system and explain how the CNF is meeting its substantive responsibilities for establishing an RNA system that achieves the identified objectives under each alternative.

Lastly, we recommend that the plan include a desired condition that states:

> *A network of Research Natural Areas represents the full diversity of ecosystems and ecological variability found across the forest and region. The network is designed to absorb predicted dynamics due to climate change. Individual RNAs are large enough to ensure interior areas and the processes that define them remain unmodified. As much as possible, they are designed at the landscape scale to incorporate multiple ecosystems and ecological situations. The network has adequate redundancy to ensure that ecosystems in different life phases can exist. For instance, ecosystems may be represented in a pre-burnt, recently burnt, and decades-old burnt condition to maximize protection of natural diversity and research opportunities. Redundant areas may also be necessary to maintain a range of study areas and sufficient population sample sizes. The RNA network serves to preserve and maintain biological diversity, and as a research laboratory and educational sites, a baseline for measuring long-term ecological change, reference areas for the study of natural ecological processes including disturbance, and control areas for comparing results from manipulative research.*

6. Designations, other than RNAs

As stated above, a required element in forest planning is to determine whether to recommend additional areas for administrative designation.[59] Complementing this substantive requirement of the planning rule is the Forest Service's Framework for Sustainable Recreation that emphasizes the important role that designated areas play in providing for recreation: "[The Forest Service] will evaluate other areas within the National Forest System that have outstanding recreational, scenic, historic, or other values of high attractiveness for designation and management as special areas."[60]

In policy, the Forest Service has recognized a few types of designated areas. One type is the RNA that is governed by FSM 4060 as discussed in the section above. Another type is recreation-based and includes

[59] 36 C.F.R. §§ 219.7(c)(2)(vii), 219.19 (A designated area is "[a]n area or feature identified and managed to maintain its unique special character or purpose….Examples of administratively designated areas are experimental forests, research natural areas, scenic byways, botanical areas, and significant caves.")
[60] USFS. Connecting People with America's Great Outdoors: A Framework for Sustainable Recreation. June 25, 2010. Sec. IV, p. 6.

botanical, geological, historical, paleontological, recreational, scenic, and zoological areas.[61] FSM 2370 provides direction for the management of these areas, requiring that they be "managed to emphasize recreational and other specific related values. Other uses are permitted in the areas to the extent that these uses are in harmony with the purpose for which the area was designated."[62] In land management plans, the Forest Service has discretion to create various types of designated areas, and can customize them to fit the unique circumstances and conditions on individual forests.[63] Forests in the past have established a variety of designations. The Tahoe National Forest, for example, has designated areas called Ecosystem Study Areas in its current Land Management Plan.[64]

Designated areas can play a critical role in ensuring ecological integrity and biological diversity as required in §219.8 and §219.9 of the 2012 planning rule. To be specific, the Forest Service can establish designated areas that specifically protect rare or imperiled species, rare or imperiled ecosystem elements, aquatic refuges, terrestrial refuges, specific wildlife corridors, and other important ecological elements and processes. Individual designated areas, if designed with purpose, can contribute to the establishment of a larger mosiac of protected areas across the national forest that, in aggregate, is necessary to achieve the substantive ecological and diversity provisions.

Establishing designated areas is also an effective way to draw people to visit and learn about the national forests and its unique resources, thereby connecting people with nature as addressed in § 219.10. To this end, we ask the Forest Service to designate pursuant to 36 C.F.R. § 219.7(c)(2)(vii) the Sandia Mountains Outdoor Education and Natural Area (also discussed in the Recreation section of this letter). The proposed area is located immediately east of the Sandia Mountain Wilderness in Bernalillo County, NM about 15 miles from Albuquerque and 50 miles from Santa Fe, with easy access on paved roads and approximately one third of New Mexico's population living within 20 miles of the area.

The proposed area is uniquely suited to serve as an outdoor learning and natural area. Its purpose would be to forge stronger human connections to the forest, encourage outdoor recreation and exploration, and share current thinking about the ecology, history, and management of the Sandias. It is an easy-to-access gateway to the Sandia Mountains, with towering ridge lines, dramatic views, spectacular geology, bird-watching, hiking, biking, horseback riding, and wilderness. With picnic areas, bus and car parking, and a variety of trails from easy to more challenging, the area could serve as a visitor and learning hub to the CNF with minimal additional investment. Benefits of establishing the Sandia Mountains Outdoor Education and Natural Area include:

- Building and strengthening partnerships to collaboratively implement a management plan for the area, including leveraging additional funds;
- Increasing public understanding, awareness, and stewardship about the ecology, history, and management of the Sandias;

[61] FSM 2372.02
[62] *Id*. Introduction, p. 3.
[63] This is implicit in the definition of Designated Areas at 36 C.F.R. § 219.19 ("Examples of administratively designated areas are experimental forests, research natural areas, scenic byways, botanical areas, and significant caves."). In addition, Forest Service Handbook 1909.12, § 24 "lists *some* types of designated areas" in Exhibit 01 and states that the list "is not comprehensive."
[64] Tahoe Land and Resource Management Plan Record of Decision, page 4 available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5214243.pdf.

- Increasing public understanding, awareness, and stewardship about wilderness and public lands management;
- Forging stronger connections with nature and inspiring people to care about our public lands; and
- Fostering engagement by youth and underserved populations with their public lands.

See Appendix F for a detailed description of the proposed designated area.

In addition, the lands in and around the Magdalena District are widely popular among professional and amateur astronomers. The CNF should consider a special area designation that would facilitate viewing and enjoying the area's night skies. Such a designation could help the town of Magdalena's local economy by promoting and enhancing nature-based recreation and tourism.

Given that the planning rule requires a formal determination of "whether to recommend any additional areas for designation," it only makes sense that the Forest Service utilize and document a rational and transparent process to identify, evaluate, and recommend deserving designated areas. This involves identifying where areas with unique and special character or purpose exist across the forest, evaluating their current protection status, and applying criteria related to the substantive provisions in sections 219.8 through 219.10. Chapter 20 of the forest planning directives provides almost no guidance on how to do this, although Chapter 10 (on assessments) does provide some insight. Related to the CNF's responsibility in the Assessment Report to "identify a potential need and opportunity for additional designated areas" Chapter 10 guides that forests should "identify and evaluate available information to answer questions such as….:

> c. Are there specific land types or ecosystems present in the plan area that are not currently represented or minimally represented?
>
> d. Are there rare or outstanding resources in the plan area appropriate to specific types of designated areas?
>
> e. Are there known opportunities to highlight unique recreational or scenic areas in the plan area to provide for sustainable recreation opportunities?
>
> f. Is there scientific or historical information that suggests a unique opportunity to highlight specific educational, historic, cultural, or research opportunities?
>
> g. Has a need or opportunity for specific designated areas been identified in the plans of States, Tribes, counties, and other local governments?
>
> h. Are there known important ecological roles such as providing habitat or connectivity for species at risk that could be supported by designation?"[65]

As a starting point, the Forest Service, at a minimum, should designate areas identified in the Forest Assessment Report as having ecological value. These include Little Water Canyon, the Sawtooth

[65] FSH 1909.12, § 14(4)

Mountains, and Fourth of July area as possible candidates for designated areas.[66] The CNF should also designate areas that comprise ecosystems that are cited in the Assessment Report as under-represented in protective designations.

After conducting a rational and science-based process to identify candidates for designation, the Forest Service should include a minimum set of proposed designations in all action alternatives that are necessary to achieve the rule's substantive provisions. The Forest Service should also recommend additional areas for designation in the proposed plan along with associated plan components. As part of the environmental analysis, the Forest Service should analyze and disclose the impacts, especially in relation to the substantive provisions, of the proposed designated areas under each alternative.

We recognize that the planning rule offers a few tools, such as geographic or management areas, in addition to designated areas for protecting deserving places. We also realize that utilizing these other tools might involve an easier process. Protecting lands as Designated Areas, however, confers different and more protective management requirements. Specifically, the Forest Service is required to manage designated areas by only allowing other uses "to the extent that these uses are in harmony with the purpose for which the area was designated."[67] Areas with unique special character and purpose deserve to be recognized and protected for the maintenance of the areas' specific values. Finally, to the degree it makes sense, the Forest Service certainly has the discretion to overlap designated areas, management areas and geographic areas.

Recommendations: We request that the Forest Service designate in multiple action alternatives the areas identified in the CNF's Forest Assessment Report as having potential for special designation. We request that the Forest Service designate in multiple action alternatives our proposed Sandia Mountain Outdoor Education and Natural Area, as well as consider a dark skies scenic area designation in the Magdalena District to facilitate star gazing and enjoyment of dark skies. We request that the CNF utilize a transparent and rational process for identifying and evaluating other unique features, values, places or resources that exist across the forest that could warrant a special area designation. A suite of proposed designations necessary to achieve the rule's substantive provisions are included in all action alternatives. Additional designations that help achieve the rule's purposes must be included in the proposed plan along with associated plan components. The Forest Service must analyze and disclose the impacts, especially in relation to the substantive provision, of the proposed designated areas under each alternative.

7. Management Areas

The CNF should establish a management area that includes all the lands inventoried in the Chapter 70 wilderness process that will not be recommended for wilderness. Above, in section C(4) of this letter, we request that the CNF analyze multiple alternatives that would provide management direction for lands inventoried in the Chapter 70 wilderness process that will not be recommended for wilderness. We reiterate that request here and suggest that the agency create a management area to manage these lands to protect their roadless and wilderness values.

[66] Cibola National Forest Assessment, vol. II, p. 196.
[67] FSH 1909.12, § 24.2(1)(b)

Recommendation: We request that the CNF establish a management area to provide management direction for lands identified in the final wilderness inventory that are not recommended for wilderness; section C(4) of this letter offers plan components for the agency to use as it develop its alternatives.

C. Comments about the Chapter 70 Wilderness Inventory and Evaluation Process

We appreciate the opportunities that the CNF has provided for public input into the Chapter 70 wilderness inventory process. We encourage the CNF to continue providing opportunities for public feedback, including on the second round of preliminary inventory maps, the evaluation methodology, and the results of the wilderness evaluation before it is finalized.

We believe that the preliminary wilderness inventory maps issued by the CNF and available online are largely accurate.[68] The maps capture most of the roadless areas in the forest including both IRAs and other roadless lands. We hope that the thoroughness of the wilderness inventory will be matched by an equally thorough and fair wilderness evaluation process.

The CNF offered nearly three months for the public to provide input on its first preliminary inventory. Appendix G is a map that highlights all of the lands that we know through recent field surveys are roadless and were not included in the agency's first preliminary wilderness inventory. We submitted information to the agency using the interactive online mapping tool and via a letter to the agency dated November 21, 2014 that included information demonstrating that these lands meet the inventory criteria. The November 21, 2014 letter is included with this scoping letter as Appendix H. We expect the Forest Service to include the lands highlighted in the map at Attachment G in the CNF's final wilderness inventory.

If, after reviewing the information we provided during the inventory process, the Forest Service disagrees with our boundaries and feels that these lands do not meet the inventory criteria, then we remind the agency that the final directives allow for citizen-proposed areas that do not meet either the roads or other improvements criteria to be included in the inventory if the Forest Supervisor merits them for inclusion. The directives state that the agency can include in the inventory:

> *Areas with improvements… that the Responsible Official merits for inclusion in the inventory that were proposed for consideration through public or intergovernmental participation opportunities (sec. 70.61 of this Handbook).*[69]

We therefore request that the agency include those lands highlighted in the map at Appendix G in the final inventory even if it feels any of those areas do not meet the inventory criteria.

The CNF is in the process of developing a travel management plan for the Magdalena Ranger District. This travel plan proposed action would designate 850 miles of road for public motorized use and close about 360 miles of road to public motorized use. The travel plan could affect the outcome of the

[68] The CNF's preliminary wilderness inventory maps are online here: http://www.fs.usda.gov/detailfull/cibola/landmanagement/planning/?cid=stelprd3816114&width=full.
[69] FSH 1909.12, § 70.22(b)(12)

inventory. We urge the agency to ensure that the final wilderness inventory reflects the findings from the travel analysis process and final travel management plan decision. Incorporating this decision will ensure an accurate final inventory that reflects on-the-ground conditions and recent decisions.

Recommendations: We request that the CNF continue to provide opportunities for public feedback in the Chapter 70 process, including on the second round of preliminary inventory maps, the evaluation methodology, and the results of the wilderness evaluation before it is finalized. We request that the CNF include those lands highlighted in Appendix G in the final wilderness inventory. For those that may not satisfy the improvements criteria in Sec. 71, we request that the Forest Supervisor "merit" their inclusion. We urge the agency to ensure that the wilderness inventory on the Magdalena Ranger District reflect the findings from the travel analysis process and final travel management plan decision.

VI. Sustainable Recreation Planning and Management

A. Forest Service Regulatory and Policy Direction for Recreation Planning

1. Forest Service Planning Rule and Policy Directives

The 2012 planning rule establishes ecological sustainability as the overarching goal of planning, and directs that land management plans should provide people and communities ecosystem services and multiple uses that provide a range of benefits – including recreational, educational, and spiritual -- for the present and into the future.[70] To achieve this, the rule requires the Forest Service to provide for "sustainable recreation" and emphasizes the importance of connecting people with nature. As set forth in the rule, sustainable recreation is "the set of recreation settings and opportunities on the National Forest System that is ecologically, economically, and socially sustainable for present and future generations."[71]

In revising a land management plan, the Forest Service must develop plan components, including standard and guidelines, to provide for:

- Sustainable recreation, including sustainable settings, opportunities, and access; and scenic character.[72]
- The plan area's contribution to social and economic sustainability, taking into account sustainable recreation and opportunities to connect people with nature.[73]
- Integrated resource management to provide for ecosystem services and multiple uses, considering
    - Appropriate placement of infrastructure, such as recreational facilities,
    - Opportunities to coordinate with neighboring landowners to link open spaces and take into account joint management objectives where feasible and appropriate, and
    - Opportunities to connect people to nature.[74]

[70] 36 C.F.R. § 219.1(c)
[71] 36 C.F.R. § 219.19
[72] 36 C.F.R. § 219.10(b)(1)(i)
[73] 36 C.F.R. §§ 219.8(b)(2) & (6)
[74] 36 C.F.R. §§ 219.10(a)(3), (4) & (10)

In regard to the interface of recreation and protecting environmental resources, the planning rule requires plan components, including standards and guidelines, to ensure achievement of the substantive provisions related to ecological integrity, sustainability, and diversity at 36 C.F.R. §§ 219.8(a) and 219.9. The Forest Service, therefore, needs to develop plan components guiding the management of recreation settings, opportunities, infrastructure, and access that do not impede the achievement of the substantive provisions. The agency must also determine the suitability of lands for motorized use, and should consider developing suitability determinations for various recreational uses, access, infrastructure and facilities.[75] Lastly, the Forest Service must develop plan components that ensure recreational facilities, access, and use complies with the Forest Service's best management practices for water quality.[76]

The planning directives add detail to the planning rule's provisions. Drawing on the unit's distinctive role and contributions, the directives urge the forest to be proactive in developing a "coherent system of sustainable and socially compatible recreation opportunities."[77] In doing so, the Forest Service should:

- Use the ROS to define recreation settings, and then establish compatible activities (opportunities) within those settings.[78] The Forest Service can create ROS sub-classes to reflect specific situations on a forest or reflect seasonal variations, as well as create different ROS settings for winter.[79]

- Map *desired* ROS classes based on management areas, geographic areas, designated areas, and/or independent overlay mapping, noting that *desired* ROS settings may be different from *existing* ROS settings.[80]

- Complete suitability determinations consistent with the *desired* ROS class.[81] At a minimum, the forest should determine suitability for motorized recreation, including over the snow vehicles; however, the forest can also determine suitability – or non-suitability – for various types of recreational activities (e.g., mountain biking, horseback riding, outfitting and guiding) and infrastructure within each *desired* ROS class.[82]

The plan must include components, including standards and guidelines, to drive the transformation from existing to desired ROS settings.[83] It can also include components to direct management in specific 1) ROS classes, 2) management areas, 3) geographic areas, 4) designated areas, or 5) other places (e.g., landscapes with unique character, high conflict potential, cultural values, water features, scenic quality, important recreation destinations).[84]

[75] FSH 1909.12, § 23.239(a)(2)(d), (e), & (f)
[76] 36 C.F.R. § 219.8(a)(4)
[77] FSH 1909.12, § 23.23a(1)(d)(2)
[78] FSH 1909.12, § 23.23a(1)(d)(1)
[79] *Ibid*
[80] FSH 1909.12, § 23.23a(2)(a)
[81] FSH 1909.12, § 23.23a(2)(d)
[82] FSH 1909.12, § 23.23a(2)(e) & (f)
[83] FSH 1909.12, § 23.23a(2)(g) & (c)
[84] FSH 1909.12, § 23.23a(2)(h)

In regard to the planning rule's direction to take into account opportunities to connect people with nature, the Forest Service can evaluate existing information including the unit's distinctive role and contribution, and develop strategies[85] and supporting plan components that better connect people, with an emphasis on youth and underserved populations, with nature. In addition, the Forest Service can identify environmental study areas or visitor centers specifically to provide educational opportunities to schools and the public.[86]

2. Travel Management Rule and ORV Executive Orders

Subparts B and C of the travel management rule at 36 C.F.R. 212 require that motorized travel occur only on a designated system of routes and areas in the summer and winter, respectively. It also establishes two exceptions to the ban on cross-country driving in the summer time; motorized vehicles can travel a defined limited distance off specific route segments for the purposes of dispersed camping and game retrieval when specified on the map.[87] Forest Service policy instructs forests to use the exceptions sparingly.[88]

Executive Orders 11989 and 11644 establish that off-road vehicle trails and areas must be located to minimize damage to forest resources and existing and potential recreation uses.[89] The Executive Orders establish specific criteria for minimization, which are echoed in the travel management rule. Specifically, the Executive Orders require that when designating areas or trails available for off-road vehicle use, agencies must locate them to:

(1) minimize damage to soil, watershed, vegetation, or other resources of the public lands;
(2) minimize harassment of wildlife or significant disruption of wildlife habitats; and
(3) minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands.[90]

The Executive Orders also include protective mechanisms designed to ensure that off-road vehicle designations are not impairing the protection of public lands. Specifically, they obligate the Forest Service to: 1) periodically monitor the effects of off-road vehicle use, and based on the data amend or rescind the off-road vehicle designations;[91] and 2) immediately close areas and trails to off-road vehicle use if the

[85] Strategies, for instance, could address recreational opportunities, interpretation, access, safety, stewardship, and partnerships.
[86] FSH 1909.12, § 23.23(a)(2)
[87] 36 C.F.R. § 212.51(b). ("In designating routes, the responsible official may include in the designation the limited use of motor vehicles within a specified distance of certain forest roads or trails where motor vehicle use is allowed, and if appropriate within specified time periods, solely for the purposes of dispersed camping or retrieval of a downed big game animal by an individual who has legally taken that animal."
[88] FSM 7703.11(4). This issue has been addressed in a recent appeal decision as well: "[A] broad designation allowing dispersed camping along all or most designated routes is not consistent with long-term objectives for travel management. Direction from the Chief of the Forest Service indicates that the allowance of dispersed camping by general designation along roads and trails should be used sparingly." (Reviewing Officer Recommendation, Sawtooth National Forest, Travel Plan Revision, Appeals #08-04-14-0035-A215, #08-04-14-0038-A215, and #08-04-14-0039-A215 at 17; *see also* accompanying Appeal Decision at 1, adopting recommendation and directing Sawtooth National Forest to modify decision ("Include designations for motor vehicle use for dispersed camping on the initial motor vehicle use map only to the extent that they reflect conditions where motor vehicle use for dispersed camping is practicable without causing unacceptable resource damage.").
[89] Exec. Order No. 11,644, 37 Fed. Reg. 2877 (Feb. 8, 1972), *as amended by* Exec. Order No. 11,989, 42 Fed. Reg. 26,959 (May 24, 1977).
[90] *Id.* § 3(a).
[91] *Id.* § 8.

Forest Service determines that the use of off-road vehicles "will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands … until such time as [the agency] determines that such adverse effects have been eliminated and that measures have been implemented to prevent future recurrence."[92]

Although travel management for the most part is decided in conforming project-level plans and decisions, land management plans should reinforce the travel management rule's provisions and requirements in standards, and provide the necessary detail on how the Forest Service will carry out and comply with the Executive Order provisions. Additionally, to the degree land management plans allocate areas and routes for motorized use, these allocations are subject to the minimization criteria established in the Executive Orders.

3. Forest Service Guidance on Management of Special Recreation Areas

The planning rule directs the Forest Service to identify areas with unique special character or purpose and determine whether to recommend them as designated areas in the planning process.[93] It defines designated areas as "[a]n area or feature identified and managed to maintain its unique special character or purpose….some categories of designated areas may be established administratively in the land management planning process…. Examples of administratively designated areas are experimental forests, research natural areas, scenic byways, botanical areas, and significant caves."[94]

Forest Service Manual 2370 provides direction for the management of special recreation areas containing scenic, geological, botanical, zoological, paleontological, archaeological, or other special characteristics or unique values – a subset of the administrative designated areas defined in the planning rule.[95] It directs that these areas be "managed to emphasize recreational and other specific related values. Other uses are permitted in the areas to the extent that these uses are in harmony with the purpose for which the area was designated."[96]

B. Factors to Address in Alternatives and Plan

1. Recreational Niche

The plan must describe the recreation niche of the CNF. Identifying the niche is required by the planning rule,[97] and it is a necessary first step in designing a coherent sustainable recreation system.[98] The Forest Service defines the recreation niche as "what the forest has to offer in terms of special places,

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[92] *Id.* § 9.
[93] 36 C.F.R. § 219.7(c)(2)(vii)) "identify existing designated areas…., and determine whether to recommend any additional areas for designation.")
[94] 36 C.F.R. § 219.19
[95] FSM 2372.02 and 2372.03.
[96] *Id.* Introduction. p. 3.
[97] 36 C.F.R. § 219.7(f)(ii) ("Every plan must….[d]escribe the plan area's distinctive roles and contributions within the broader landscape.")
[98] FSH 1909.12, § 23.23a(1)(d)(2)

opportunities and potential experiences, overlapped with what people desire and expect in terms of outdoor recreation from public lands."[99]

The niche should serve as the foundation for identifying desired sustainable settings and opportunities. For instance, in the Magdalena Ranger District, the niche is remote backcountry mountains and canyons where self-reliance is necessary, where visitors expect to find solitude, challenge, and beautiful views, see wildlife, and experience dark night skies. The niche in the Sandias is non-motorized front-country with an educational emphasis where visitors expect to have a safe, easy-to-navigate visit where they can hike on well-marked and maintained trails, have picnics, and learn about the forest.

Lastly, the recreation niche statement should address the role of recreation in the larger forest niche ("distinctive role and contribution in the broader landscape"). For instance, is recreation a dominant element in the forest niche, considering social, economic and ecologic factors? This information is important since it informs the spatial allocation and management of recreation settings in the context of other forest uses.

2. Coherent Recreation Strategy

The directives urge the Forest Service to be proactive in developing a coherent recreation strategy for the planning unit as part of the planning process. The Assessment Report states that the Forest Service is embarking on a recreation strategy along with an update to the Recreation Facilities Analysis concurrently with the plan revision process, but provides no further insight into what this might look like in terms of substance or process.[100]

We strongly encourage the development of a sustainable recreation strategy concurrent with the plan revision process that addresses niche, developed recreation, dispersed recreation, education and learning opportunities, connecting people to nature, infrastructure, benefits, budgets, and monitoring. However, given how intertwined the recreation strategy process and the plan revision process will be and the amount of public interest in recreation planning generally, we urge that the Forest Service clarify how the two processes will interact (will the recreation strategy be done first and inform the development of plan components?) and offer early and extensive public engagement opportunities in the development of the recreation strategy. We presume that the recreation strategy will inform the development of plan components especially as they relate to the allocation of desired ROS settings and sustainable opportunities, activities that enhance connections to nature and environmental education, etc. Importantly, the substance of the strategy should be wholly reflected in the plan components.

3. Sustainable Settings

The planning rule requires the plan to include "plan components, including standard and guidelines, to provide for…[s]ustainable recreation, including sustainable settings...."[101] The planning directives are explicit that the Forest Service should describe its desired ROS settings, identify the gap that exists

[99] See http://www.fs.fed.us/recreation/programs/rfa/.
[100] Cibola National Forest Assessment, vol. II, p. 184
[101] 36 C.F.R. § 219.10(b)(1)(i)

between the existing and the desired settings, and develop plan components necessary to close the gap in a specific amount of time. The settings should reinforce and be compatible with the recreation niche, as well as the plan area's broader distinctive role and contribution within the broader landscape. They can be based on a variety of factors such as geographic areas, management areas, resource constraints, scenery, access, and physiography. The Forest Service has the latitude to develop ROS sub-classes to reflect seasonal variations or specific conditions or resources on the forest, as well as develop separate winter ROS settings if the summertime ROS classes do not apply well to the winter situation.

We recommend the following related to the identification, spatial allocation, and management of ROS settings. First and foremost, the Forest Service must include a standard that makes desired ROS settings enforceable (e.g., the Forest Service will take no action incompatible with the desired ROS setting). This is the only way to ensure compliance with the rule's requirement to provide for sustainable settings. In the past, it was not uncommon for the Forest Service to implement projects that modified the ROS settings, usually resulting in an erosion of non-motorized and primitive settings. In addition, where existing ROS settings do not align with desired ROS settings, the Forest Service must set a timeframe for closing the gap, and identify prioritized tasks, in the form of standards and guidelines, for driving the transformation. Without this, there is no guarantee that the desired ROS settings will be achieved over the life of the plan.

Second, we recommend that the CNF as a general matter develop sub-classes if necessary to ensure appropriate management and sustainability of specific settings. To that end, we recommend the establishment of a sub-class called Front-Country Portal where non-motorized visitation by community members, groups, and schools, environmental learning, and connection to public lands is emphasized.

Third, the spatial allocation of ROS settings should be compatible with – and even reinforce other management prescriptions. This means that the Forest Service should integrate resource and recreation management allocations and prescriptions to facilitate achievement of the substantive ecological and sustainability provisions in 219.8 through 219.10 and support a range of multiple uses.[102] Hence, the Forest Service should seek to assign ROS settings to facilitate the achievement of the substantive ecological integrity and diversity provisions. For instance, areas that serve as important habitat for species of concern or priority watersheds could be assigned a non-motorized ROS class where enjoyment of natural scenery and processes is emphasized.

The identification and allocation of desired recreation settings should not be done after other resource allocations are made. This happened commonly in the past and resulted in the subordination of recreation settings to other resource allocations.[103] For example, if the Forest Service determines that the desired ROS class for a particular area is semi-primitive non-motorized and also determines a need to manipulate vegetation, it can establish a management prescription that enables vegetation management without motor vehicle access.[104] In addition or alternatively, the Forest Service could establish a management prescription that enables motor-vehicle-assisted vegetation treatments within a specified timeframe, after

[102] 36 C.F.R. § 219.1(c)
[103] In previous rounds of forest planning, ROS settings were generally byproducts of resource allocations. For example, zones where vegetative management or commercial logging were allowed were by default assigned motorized ROS settings.
[104] The Forest Service could contract to remove trees using horse drawn methods.

which the desired ROS class of backcountry non-motorized would apply (aka "a one-time restoration" management prescription).

Fourth, the Forest Service, as much as possible, should spatially arrange ROS classes and sub-classes to align with geographic and topographic features. For instance, it makes sense to assign a subwatershed a ROS class so that the setting, the recreational experience it provides, and the management presence it requires is consistent ridge to ridge. This enhances the sustainability of the setting, and facilitates management and public understanding and compliance. In addition, to the degree possible and it makes sense, coordinate the spatial allocation of settings with those on adjacent lands.[105]

Fifth, the allocation of recreation settings and opportunities should take into account existing and projected recreation uses and desires. According to the most recent National Visitor Use Monitoring Report for the CNF, the two most popular recreational activities on the CNF by far are hiking/walking and viewing natural features, with 35% and 15% of visitors citing these as their main activities, respectively.[106] This compares to activities such as off-highway vehicle riding that are incompatible with wilderness conservation, in which less than 1% of the CNF visitors participate as their main activity.[107] See Tables 1 and 2 below.

On a broader scale, recreational surveys show that Americans are participating in increasing numbers in recreational pursuits that natural areas such as non-motorized backcountry and wilderness provide. Both the total number of Americans and the total number of days annually in which Americans participate in nature-based recreation have grown since 1994. In particular, viewing, photographing, and studying nature (e.g., wildlife and birds), have grown strongly (see Table 1 in the text below); primitive camping and backpacking days increased 12% and 24%, respectively, between 2000 and 2008.[108]

[105] See 36 C.F.R. § 219.10(a)(4) ("provide for ecosystem services and multiple uses, considering …[o]pportunities to coordinate with neighboring landowners to link open spaces and take into account joint management objectives where feasible and appropriate")
[106] USDA Forest Service. National Visitor Use Monitoring Results for FY 2011 for the Cibola National Forest. 2012. Available online at http://apps.fs.usda.gov/nrm/nvum/results/ReportCache/Rnd3_A03003_Master_Report.pdf. Page 21.
[107] *Id.* See Table 2.
[108] Cordell, H. K., Beltz, C. J., & Green, G. T. 2008a. Nature-based Outdoor Recreation Trends and Wilderness. International Journal of Wilderness, *14*(2), 7-9, 13. Available online at: http://www.srs.fs.fed.us/pubs/ja/ja_cordell022.pdf.

Table 1. Participation in Outdoor Activities. Copied from 2011 Cibola National Forest National Visitor Use Monitoring Report, Page 21.

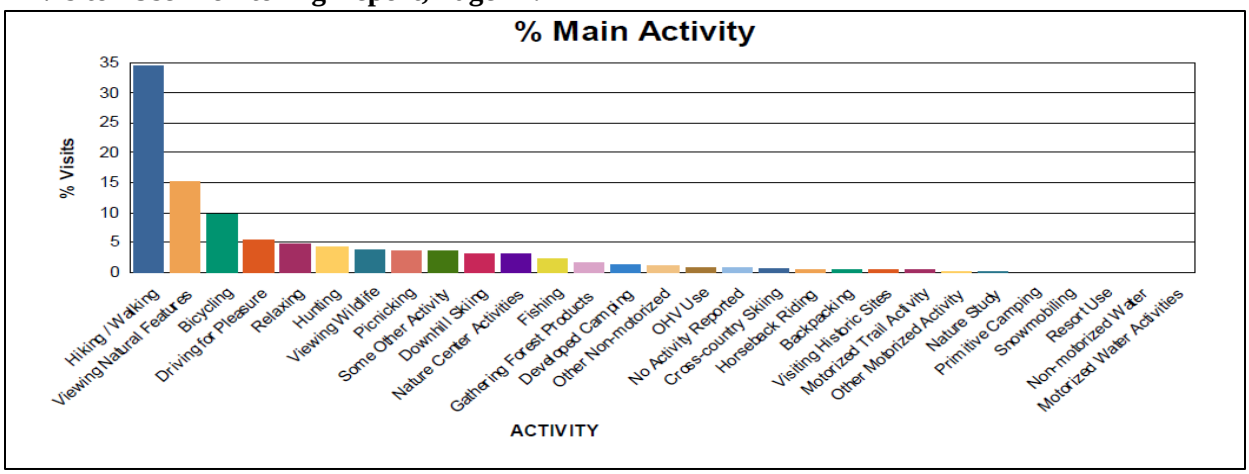

Table 2. Participation in Outdoor Activities. Copied from 2011 Cibola National Forest National Visitor Use Monitoring Report, Page 21.

Activity	% Participation*	% Main Activity‡	Avg Hours Doing Main Activity
Hiking / Walking	51.2	34.6	2.4
Viewing Natural Features	49.5	15.3	1.6
Viewing Wildlife	35.1	3.8	4.1
Relaxing	29.3	4.9	2.2
Driving for Pleasure	18.6	5.5	1.6
Nature Center Activities	13.6	3.0	1.5
Bicycling	9.8	9.8	2.3
Picnicking	9.4	3.6	2.7
Nature Study	7.5	0.1	5.0
Some Other Activity	5.5	3.5	8.1
Hunting	5.0	4.4	9.5
Visiting Historic Sites	3.8	0.3	1.0
Developed Camping	3.6	1.4	34.5
Downhill Skiing	3.4	3.1	4.3
Fishing	3.1	2.4	4.2
Gathering Forest Products	2.4	1.6	3.0
Primitive Camping	1.9	0.0	0.0
Backpacking	1.6	0.4	4.1
OHV Use	1.4	0.9	3.3
Other Non-motorized	1.2	1.0	1.8
Motorized Trail Activity	1.1	0.3	5.7
Horseback Riding	1.0	0.5	3.0
Other Motorized Activity	0.8	0.1	1.0
Cross-country Skiing	0.8	0.6	2.7
No Activity Reported	0.3	0.8	
Resort Use	0.2	0.0	0.0
Motorized Water Activities	0.1	0.0	0.0
Non-motorized Water	0.0	0.0	0.0
Snowmobiling	0.0	0.0	0.0

4. Suitability

The Forest Service is required to complete suitability determinations for motorized recreation within each desired ROS class.[109] Suitability determinations should be based on a variety of factors including, but not limited to: legal status, access, soils, vegetation, wildlife habitat needs, sensitive habitats, water features, and scenery management. In previous plans, the Forest Service has based its suitability determinations solely on the legality of allowing the particular use (e.g., motorized recreation is not suitable in Wilderness). In addition, the Forest service should consider completing suitability or non-suitability determinations for various types of recreational activities (e.g., mountain biking, horseback riding, outfitting and guiding) and infrastructure.[110]

5. Sustainable Opportunities

The planning rule requires the plan to include "plan components, including standard and guidelines, to provide for…[s]ustainable recreation, including sustainable….opportunities, and access…"[111] Sustainable opportunities are those that will maintain ecological integrity, as well as support social and economic benefits for the present and future generations. The plan must have plan components, including standards and guidelines, that ensure that opportunities are compatible with (and ideally enhance) the desired settings and recreational niche. In addition, to the extent that the provision or sustainable opportunities rely on infrastructure such as roads, trails, bathrooms, trailheads, parking lots, and picnic areas, the plan must contain standards and guidelines that ensures infrastructure is sited appropriately (e.g., maintain ecological integrity and viewsheds, and enable consistent flow of benefits into the future), compatible with the desired setting, and capable of being adequately maintained with predicted capacities, including implementing best management practices for water quality. Practically, this means that recreation infrastructure should be the minimum necessary to maintain and enhance the desired settings and recreation objectives while not compromising ecological integrity.

a. Sustainable off-road vehicle designations and use

In providing direction for the siting and management of off-road vehicle use (summer and winter), the plan components must ensure compliance with Executive Orders 11989 and 11644.[112] Specifically, the plan must include *standards* that establish:

- The Forest Service will apply the Executive Order minimization criteria to projects that propose to create or modify off-road vehicle area or trail designations. Application of the criteria requires the Forest Service to demonstrate how each area and trail as well as the aggregate system minimizes – not just considers – impacts to forest resources and other existing and projected recreation uses. The aggregate system includes cross-country driving zones for dispersed camping or game retrieval enabled under the travel management rule.

[109] FSH 1909.12, § 23.23a(2)(d)
[110] FSH 1909.12, § 23.23a(2)(e) & (f)
[111] 36 C.F.R. § 219.10(b)(1)(i)
[112] Exec. Order No. 11,644, 37 Fed. Reg. 2877 (Feb. 8, 1972), *as amended by* Exec. Order No. 11,989, 42 Fed. Reg. 26,959 (May 24, 1977).

- The Forest Service will create and carry out a strategy for monitoring the impacts of off-road vehicle use on Forest Service-administered lands, and make the monitoring results available to the public including recommendations for amendments or rescissions of off-road vehicle designations. The strategy will include indicators that trigger action under Section 9 of the Executive Order.[113] The strategy, if relevant, should also address monitoring, trigger points, and actions related to the impacts that result from cross-country driving for dispersed camping or game retrieval enabled under the travel management rule.

To the extent that motorized recreation occurs on system roads, plan components must ensure that such access and use is sustainable. To that end, it makes sense to extend the minimization and monitoring concepts in the Executive Orders to motorized recreation occurring on roads. Specifically, standards and guidelines should ensure that: all motorized designations minimize impacts;[114] are periodically monitored, reviewed, and modified as needed; and are modified immediately when considerable adverse damage is occurring. These plan components are necessary to ensure that recreation is sustainable regardless whether it occurs on a trail, area, or road.

Lastly, the plan should have standards and guidelines that guide how, when, and if exceptions to the cross-country driving prohibitions for dispersed camping and game retrieval will be allowed. The direction should be compliant with the travel management rule and applicable policy directives.

b. Recreation events

The plan must include standards and guidelines for the management and allowance of recreation events in order to ensure sustainability and ecological integrity, as required by the planning rule. Recreation events, executed sustainably, promote connections to and provide opportunities to educate people about public lands, as well as stimulate local economies. However, sited or executed badly, events can result in significant damage to public lands. Many forests have an ad hoc approach to managing events in that they respond to event applications when they receive them, but do not have an overarching guiding framework. This can lead to frustration and unneeded expense by both the event organizers and the agency when applications propose inappropriate or poorly designed events (e.g., may result in unnecessary resource damage). It makes a lot more sense for the Forest Service to include a management framework for recreation events that will enable environmentally appropriate events. The framework should address elements such as siting, seasonality, timing, size, event types, management requirements, potential user conflict, and public engagement, and should adequately guide forest managers and event organizers alike.

c. New uses

[113] Section 9 requires that when the agency determines that the use of off-road vehicles will cause or is causing considerable adverse effects on the soil, vegetation, wildlife, wildlife habitat or cultural or historic resources of particular areas or trails of the public lands, it must immediately close such areas or trails to the type of off-road vehicle causing such effects, until such time as he determines that such adverse effects have been eliminated and that measures have been implemented to prevent future recurrence.

[114] This reinforces the provision at 36 C.F.R. § 212.5(b)(1) that requires the Forest Service to identify a minimum road system ("forests must first "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands.") See Section VI of these comments for a more in-depth discussion of this requirement.

The plan should include components that guide how the Forest Service will address new types of recreation when they arise. The general management approach in the past has been to allow new types of recreational activities, regardless of whether they were explicitly planned for, until serious resource or social issues emerged forcing management action. The rise in the popularity of mountain biking on national forests is a good example of this phenomenon. This management approach was expedient since it is difficult in a forest plan to predict and plan for possible new recreational pursuits as well as to prohibit all but existing types of uses. However, it also results in resource damage and user conflict. We recommend that the plan include standards and guidelines that require a plan amendment in response to the emergence of new recreational uses beyond a threshold level (for example, 2% of visits), to ensure that the activity is ecologically and socially sustainable and does not impair ecological integrity. This will help ensure that appropriate allocation and management actions are instituted before unnecessary damage and conflict occur.

6. Wilderness Management

a. Wilderness issues flagged in the assessment report

The assessment report flagged the following issues related to wilderness management. First, the assessment notes in a few places that wilderness trespass by motorized and mechanized vehicles is a problem.[115] Second, the assessment discusses that because the wilderness opportunity spectrum is not delineated, users can have misaligned expectations related to their wilderness experiences. Third, group limits vary in wilderness based on ROS class, causing confusion.

We recommend that the Forest Service address the trespass issue by allocating ROS classes to discourage illegal incursions from adjacent lands into designated wilderness. This can be done by assigning ROS sub-classes that disallow motorized or mechanized activities adjacent to boundaries in those places where trespass is likely or is occurring. The plan should also include direction to amend travel management plans if necessary so that motorized vehicle designations comport with desired ROS settings.

We also recommend that the Forest Service assign wilderness areas, or sections of wilderness areas, ROS subclasses that reflect the particular desired wilderness experience. On its face, it is not offensive to the wilderness concept to enable higher levels of visitation on trail corridors or at popular destinations while maintaining the vast majority of the remaining acres for experiences where high levels of solitude exist.

b. Mechanized and Motorized Use in Recommended Wilderness

The planning rule requires that the plan include "plan components, including standards and guidelines, 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.[116] The Forest Service, therefore, has the discretion to allow mechanized and motorized use in recommended wilderness so long as such use does not diminish the ecological and social

[115] Cibola National Forest Assessment. vol. II. pp. 167, 171.
[116] 36 C.F.R. § 219.10(b)(1)(iv)

characteristics that provide the basis for their suitability for wilderness designation. However, in our experience, allowing incompatible motorized and mechanized vehicle use leads to diminishment of the social and ecological characteristics that provide the basis for wilderness recommendation – or said another way, the erosion of the wilderness-like setting. Hence, we strongly recommend that the agency disallow incompatible uses including motorized and mechanized travel in areas recommended for wilderness designation in the final plan. Please see our more detailed comments on this topic in Section V(B)(1)(c) on Designations above.

c. Winter Motorized Recreation

The Forest Service recently adopted a rule governing the management of over-snow vehicles (OSVs).[117] The rule requires national forests with adequate snowfall to designate and display on an "over-snow vehicle use map" specific areas and routes where OSV use is permitted based on resource protection needs and other recreational uses. If the CNF is not already in compliance with the rule's requirements,[118] it must designate winter motorized vehicle trails and areas in a planning process. The designations can be made in a land management plan revision or in a separate project level decision. To the extent the Forest Service does designate areas or trails available to OSV use in the plan revision, and does not have a compliant OSV management plan already in place, it must comply with the minimization criteria in the Over-Snow Vehicle Rule and Executive Orders 11989 and 11644.[119]

d. Connecting People to Nature and Engaging Underserved Populations

One of the new elements in the 2012 planning rule is the emphasis on connecting people to nature. There are numerous ways to incorporate plan components and other plan content into a land management plan revision to enhance connections with nature. These fall into the categories of facilitated access, education and outreach, and stewardship.

In terms of facilitated access, the Forest Service should assess cross-jurisdictional opportunities to connect open spaces, trails, and recreational systems. It may make sense, for instance, for the Forest Service and a municipality to work together to build a public land portal close to a community that provides access to the national forest through municipal open space lands in a coordinated recreational system.

Second, the Forest Service should explore opportunities to tie into public transportation to high-use trailheads (for instance, on weekends) or create its own transportation system particularly on high volume days. The inability to drive to the forest is often cited as barrier for underserved populations and youth to access and enjoy public lands. Even if the Forest Service determines that some form of public transportation is not feasible today, it should still include plan components that trigger reconsideration in

[117] 80 Fed. Reg. 4500 (Jan. 28, 2015), 36 C.F.R. part 212, subpart C.
[118] Specifically, to be in compliance, the Forest Service must demonstrate that over-snow motorized trails and areas were designated to minimize impacts to resources and other recreational uses with public involvement (Exec. Order No. 11,646, 37 Fed. Reg. 2877 (Feb. 9, 1972), *as amended by* Exec. Order No. 11,989, 42 Fed. Reg. 26,959 (May 25, 1977)).
[119] *See Wildlands CPR, Inc. v. U.S. Forest Serv.*, 872 F. Supp. 2d 1064, 1081-82 (D. Mont. 2012) (OSV designations in plan for Beaverhead-Deerlodge National Forest must comply with minimization criteria)

the future when criteria are met. The land management plan will be in force for the next two decades during which time conditions may change considerably.

Third, the Forest Service should consider installing gateway stations at logical portal points. The station could have kiosks providing a variety of information including maps, camping information, recreation information, etc. Having this may help direct people to recreational sites and zones that they are seeking, providing them with an improved experience, and protecting sensitive resources by directing visitors elsewhere.

Fourth, the Forest Service in its plan revision should conduct a need and capacity analysis for outfitting and guiding and include plan components directing where, how, and to what degree outfitting and guiding will be allowed on the national forest. It makes sense to establish the framework for outfitting and guiding in the land management plan where it provides clarity to the business and non-profit communities as well as forest managers.

Fifth, the Forest Service should identify areas with unique and outstanding characteristics that merit special designation to enable visitation, interpretation, and protection. Establishing designated areas is an effective way to draw people to visit and learn about the national forests and its unique resources, and hence connect them with nature. The recreation manual and the planning rule together provide the policy direction for creating resource-based recreation areas with scenic, geologic, botanical, zoological, paleontological, recreational, and historical resources. In particular, we ask the Forest Service to designate pursuant to 36 C.F.R. § 219.7(c)(2)(vii) the Sandia Mountains Outdoor Education and Natural Area (also discussed in the Designations section of this letter). The proposed area is located immediately east of the Sandia Mountain Wilderness in Bernalillo County, NM about 15 miles from Albuquerque and 50 miles from Santa Fe, with easy access on paved roads and approximately one third of New Mexico's population living within 20 miles of the area. The proposed area is uniquely suited to serve as an outdoor learning and natural area. Its purpose would be to forge stronger human connections to the forest, encourage outdoor recreation and exploration, and share current thinking about the ecology, history, and management of the Sandias. It is an easy-to-access gateway to the Sandia Mountains, with towering ridge lines, dramatic views, spectacular geology, bird-watching, hiking, biking, horseback riding, and wilderness. With picnic areas, bus and car parking, and a variety of trails from easy to more challenging, the area could serve as a visitor and learning hub to the CNF with minimal additional investment. See Appendix F for a detailed description of the proposed designated area.

Lastly, given that New Mexico has a multi-cultural population, the Forest Service should include plan components that direct multi-lingual signs and communications. This will help reduce barriers to visitation by those who speak other languages.

XII. The Forest Plan Revision Must Provide Direction for Achieving a Sustainable, Minimum Road System.

A. Background

1. The Best Available Science Shows that Roads Cause Significant Adverse Impacts to National Forest Resources.

National forests provide a range of significant environmental and societal benefits, including clean air and water, habitat for myriad wildlife species, and outdoor recreation opportunities for millions of visitors and local residents each year.[120] The Forest Service's extensive and decaying road system, however, poses a principle threat to the future ability of the national forests to provide critical environmental, ecosystem, and recreation services. Collectively, the national forests contain over 370,000 miles of system roads (excluding tens of thousands of additional miles of unclassified, non-system, temporary, and user-created roads). That is nearly eight times the length of the entire U.S. Interstate Highway System. This road system is primarily a byproduct of the era of big timber; as such, it often is convoluted, unmanageable, and ineffective at meeting 21st-century transportation needs. Much of the system is also in a state of serious disrepair: as of 2013, the national forest road system had a 3.2 billion dollar maintenance backlog.[121]

The CNF is no exception, with 3,129 miles of system roads requiring over $3.9 million in total annual maintenance costs.[122] Yet the forest's average road maintenance budget in recent years covers only about 19% of those costs, resulting a significant backlog of deferred maintenance needs. While the Forest Assessment Report states that extent of deferred maintenance needs "is not accurately known," it does identify "the progressive decline in appropriated funding for road maintenance" as the most significant trend affecting the condition of the transportation system and acknowledges that that trend "is not expected to change significantly for the better in the foreseeable future."[123] Accordingly, the Forest Assessment Report concludes that the current transportation system is not sustainable and that "difficult decisions will have to eventually be made to bring the maintenance needs of the transportation system in line with available funding and to ensure this balance is maintained."[124]

While well-sited and maintained roads undoubtedly provide important services to society, the adverse ecological and environmental impacts associated with the Forest Service's massive and deteriorating road system are well-documented. Those adverse impacts are long-term, occur at multiple scales, and often extend far beyond the actual "footprint" of the road. The literature review attached as Appendix I surveys the extensive and best-available scientific literature (including the Forest Service's 2000 General Technical Report synthesizing the scientific information on forest roads)[125] on a wide range of road-related impacts to ecosystem processes and integrity on National Forest lands.

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[120] *See generally* 36 C.F.R. § 219.1(c) ("range of social, economic, and ecological benefits [of National Forests] . . . include clean air and water; habitat for fish, wildlife, and plant communities; and opportunities for recreational spiritual, educational, and cultural benefits"); 66 Fed. Reg. 3244, 3245-47 (Jan. 12, 2001) (Preamble to Roadless Area Conservation Rule describing key ecosystem and other services of roadless National Forest lands).
[121] USDA, Forest Service, National Forest System Statistics FY 2013, *available at* http://www.fs.fed.us/publications/statistics/nfs-brochure-2013.pdf.
[122] Cibola National Forest Assessment, vol. II, p. 214.
[123] Cibola National Forest Assessment, vol. II, pp. 214-15.
[124] Cibola National Forest Assessment, vol. II, p. 215.
[125] Hermann Gucinski *et al.*, *Forest Roads: A Synthesis of Scientific Information*, Gen. Tech. Rep. PNW-GTR-509 (May 2001), *available at* http://www.fs.fed.us/pnw/pubs/gtr509.pdf.

For example, erosion, compaction, and other alterations in forest geomorphology and hydrology associated with roads seriously impair water quality and aquatic species viability.[126] Roads disturb and fragment wildlife habitat, altering species distribution, interfering with critical life functions such as feeding, breeding, and nesting, and resulting in loss of biodiversity.[127] Roads also facilitate increased human intrusion into sensitive areas, resulting in poaching of rare plants and animals, human-ignited wildfires, introduction of exotic species, and damage to archaeological resources.[128]

Climate change intensifies the adverse impacts associated with roads. For example, as the warming climate alters species distribution and forces wildlife migration, landscape connectivity becomes even more critical to species survival and ecosystem resilience.[129] Climate change is also expected to lead to more extreme weather events, resulting in increased flood severity, more frequent landslides, altered hydrographs, and changes in erosion and sedimentation rates and delivery processes.[130] Many National Forest roads, however, were not designed to any engineering standard, making them particularly vulnerable to these climate alterations. And even those designed for storms and water flows typical of past decades may fail under future weather scenarios, further exacerbating adverse ecological impacts, public safety concerns, and maintenance needs.[131]

These road-related impacts are of significant concern on the CNF, and the environmental analysis for the plan revision must analyze them in detail. For example, the Forest Assessment Report documents that 22,000 acres are already infested with invasive plan species and that "[m]ost of the soils on the Cibola are in poor condition because of a combination of historic disturbance and current management."[132]

Road-related degradation of watersheds and riparian areas on the CNF is also significant, with the assessment identifying road-stream crossings and roads located in riparian areas as the two most significant stressors on forest watershed health.[133] "Riparian habitats are among the most critical elements of biodiversity within the landscape and they provide key ecosystem services available from no other resource. . . . [W]here riparian areas have degraded or been lost, these services are missing or at risk."[134] Yet the Forest Assessment Report finds that "[m]ost riparian areas on the Cibola are currently at risk, and completely missing in some places . . . largely [as] a function of legacy issues, including roads (authorized or otherwise)."[135] And according to the "roads and trails" indicator of the Forest Service's Watershed Condition Framework (WCF), 106 of the CNF's 166 watersheds are functioning in a poor/impaired condition due to road-related impacts, with another 36 functioning in a fair/at-risk

[126] *See* Appx. I at 2-4.
[127] *See* Appx. I at 4-6.
[128] *See* Appx. I at 6, 9 & Att. 1.
[129] *See* Appx. I at 9-14; *see also* USDA, Forest Service, *National Roadmap for Responding to Climate Change*, at 26 (2011), *available at* http://www.fs.fed.us/climatechange/pdf/Roadmapfinal.pdf (recognizing importance of reducing fragmentation and increasing connectivity to facilitate climate change adaptation).
[130] *See* Appx. I at 9.
[131] *See* USDA, Forest Service, *Water, Climate Change, and Forests: Watershed Stewardship for a Changing Climate*, PNW-GTR-812, at 72 (June 2010), *available at* http://www.fs.fed.us/pnw/pubs/pnw_gtr812.pdf.
[132] Cibola National Forest Assessment, vol. I, pp. 62, 84.
[133] Cibola National Forest Assessment, vol. I, p. 128, Fig. 41.
[134] Cibola National Forest Assessment, vol. I, pp. 119-20.
[135] Cibola National Forest Assessment, vol. I, p. 123.

condition due to those impacts.[136] Overall, the assessment concludes that "[m]ost of the water resources on the Cibola are at risk" due in significant part to roads-related impacts such as sedimentation, increased runoff, loss and degradation of aquatic habitat, impairment of riparian areas, wetlands, and soil conditions, and increases in invasive species.[137]

The Forest Assessment Report also recognizes predicts that adverse impacts associated with roads are expected to increase due to the effects of projected climate change: "climate change can potentially compound all risks by reducing ecosystem health and the ability to withstand stresses like invasive species, insects, and disease—and in a warmer, drier climate—wildfires may become more frequent and severe, increasing soil erosion and hydrologic degradation and further reducing ecosystem health and increasing risk."[138] The compounding factor of climate change is particularly acute on the CNF where the forest's climate change vulnerability assessment projects that the vast majority of "ecological response units" are highly or very highly vulnerable to climate change impacts.[139]

2. Regulatory Framework

a. National Forest System Road Management

To address its unsustainable and deteriorating road system, the Forest Service promulgated the Roads Rule (referred to as "subpart A") in 2001.[140] The rule directs each National Forest to conduct "a science-based roads analysis," generally referred to as the "travel analysis process" or "TAP."[141] Based on that analysis, forests must first "identify the minimum road system needed for safe and efficient travel and for administration, utilization, and protection of National Forest System lands."[142] The Rule further defines the minimum road system as:

> the road system determined to be needed [1] to meet resource and other management objectives adopted in the relevant land and resource management plan . . . , [2] to meet applicable statutory and regulatory requirements, [3] to reflect long-term funding expectations, [and 4] to ensure that the identified system minimizes adverse environmental impacts associated with road construction, reconstruction, decommissioning, and maintenance.[143]

[136] Cibola National Forest Assessment, vol. I, p. 130, Figure 43; *see also* Appendix I (map depicting WCF roads and trails indicator data for the Cibola).
[137] Cibola National Forest Assessment, vol. I, pp. 125-27, 140.
[138] Cibola National Forest Assessment, vol. I, pp. 140, 221.
[139] Cibola National Forest Assessment, vol. I, P. 64.
[140] 66 Fed. Reg. 3206 (Jan. 12, 2001); 36 C.F.R. part 212, subpart A
[141] 36 C.F.R. § 212.5(b)(1). Forest Service Manual 7712 and Forest Service Handbook 7709.55, Chapter 20 provide detailed guidance on conducting travel analysis.
[142] 36 C.F.R. § 212.5(b)(1)
[143] *Id.*

Forests must then "identify the roads . . . that are no longer needed to meet forest resource management objectives and that, therefore, should be decommissioned or considered for other uses, such as for trails."[144]

While subpart A does not impose a timeline for agency compliance with these mandates, the Forest Service Washington Office, through a series of directive memoranda, has ordered forests to complete their TAPs by the end of fiscal year 2015, or lose maintenance funding for any road not analyzed.[145] The memoranda articulate an expectation that forests, through the subpart A process, "maintain an appropriately sized and environmentally sustainable road system that is responsive to ecological, economic, and social concerns." They clarify that TAPs must address *all* system roads – not just the small percentage of roads maintained for passenger vehicles to which some forests had limited their previous Roads Analysis Process reports (RAPs) or TAPs. And they require that TAP reports include a list of roads likely not needed for future use.

b. National Forest System Land Management Planning

The 2012 Planning Rule, 36 C.F.R. part 219, guides the development, amendment, and revision of forest plans, with an overarching goal of promoting the ecological integrity and ecological and fiscal sustainability of National Forest lands:

> Plans will guide management of [National Forest System] lands so that they are ecologically sustainable and contribute to social and economic sustainability; consist of ecosystems and watersheds with ecological integrity and diverse plant and animal communities; and have the capacity to provide people and communities with ecosystem services and multiple uses that provide a range of social, economic, and ecological benefits for the present and into the future.[146]

To accomplish these ecological integrity and sustainability goals, the rule imposes substantive mandates to establish plan components – including standards and guidelines – that maintain or restore healthy aquatic and terrestrial ecosystems, watersheds, and riparian areas, and air, water, and soil quality. *Id.* § 219.8(a)(1)-(3); *see also id.* § 219.9(a) (corresponding substantive requirement to establish plan components that maintain and restore the diversity of plant and animal communities and support the persistence of native species). The components must be designed "to maintain or restore the structure, function, composition, and connectivity" of terrestrial, riparian, and aquatic ecosystems,[147] must take into account stressors including climate change, and the ability of ecosystems to adapt to change;[148] and must

[144] *Id.* § 212.5(b)(2). The requirements of subpart A are separate and distinct from those of the 2005 Travel Management Rule, codified at subpart B of 36 C.F.R. part 212, which address off-highway vehicle use and corresponding resource damage pursuant to Executive Orders 11,644, 37 Fed. Reg. 2877 (Feb. 9, 1972), and 11,989, 42 Fed. Reg. 26,959 (May 25, 1977).
[145] Memorandum from Joel Holtrop to Regional Foresters *et al.* re Travel Management, Implementation of 36 C.F.R., Part 212, Subpart A (Nov. 10, 2010); Memorandum from Leslie Weldon to Regional Foresters *et al.* re Travel Management, Implementation of 36 C.F.R., Part 212, Subpart A (Mar. 29, 2012); Memorandum from Leslie Weldon to Regional Foresters *et al.* re Travel Management Implementation (Dec. 17, 2013).
[146] 36 C.F.R. § 219.1(c)
[147] *Id.* § 219.8(a)(1) & (a)(3)(i);
[148] *Id.* § 219.8(a)(1)(iv)

implement national best management practices for water quality.[149] The rule also requires the Forest Service to establish riparian management zones for which plan components "must ensure that no management practices causing detrimental changes in water temperature or chemical composition, blockages of water courses, or deposits of sediment that seriously and adversely affect water conditions or fish habitat shall be permitted."[150] In addition, plans must include plan components for "integrated resource management to provide for ecosystem services and multiple uses," taking into account "[a]ppropriate placement and sustainable management of infrastructure, such as recreational facilities and transportation and utility corridors."[151] Plan components must ensure social and economic sustainability, including sustainable recreation and access.[152] And the Forest Service must "use the best available scientific information" to comply with these substantive mandates.[153]

c. Climate Change

Executive Order 13,653 provides direction on "Preparing the United States for the Impacts of Climate Change." The Order recognizes that "[t]he impacts of climate change – including an increase in prolonged periods of excessively high temperatures, more heavy downpours, an increase in wildfires, [and] more severe droughts . . . – are already affecting communities, natural resources, ecosystems, economies, and public health across the Nation," and that "managing th[o]se risks requires deliberate preparation, close cooperation, and coordinated planning . . . to improve climate preparedness and resilience; help safeguard our economy, infrastructure, environment, and natural resources; and provide for the continuity of . . . agency operations, services, and programs."[154] To that end, the Order requires agencies to take various actions aimed at making "watersheds, natural resources, and ecosystems, and the communities and economies that depend on them, more resilient in the face of a changing climate."[155] For example, "recognizing the many benefits the Nation's natural infrastructure provides, agencies shall, where possible, focus on program and policy adjustments that promote the dual goals of greater climate resilience and carbon sequestration."[156] Agencies also must develop and implement adaptation plans that "evaluate the most significant climate change related risks to, and vulnerabilities in, agency operations and missions in both the short and long term, and outline actions . . . to manage these risks and vulnerabilities."[157]

The Forest Service's 2014 adaptation plan recognizes that the wide range of environmental and societal benefits provided by our national forests "are connected and sustained through the integrity of the ecosystems on these lands."[158] The plan highlights USDA's 2010-2015 Strategic Plan Goal 2 of "[e]nsur[ing] our national forests . . . are conserved, restored, and made more resilient to climate change, while enhancing our water resources."[159] And consistent with section 5(a) of Executive Order 13,653, the

[149] *id.* § 219.8(a)(4)
[150] *Id.* § 219.8(a)(3)(ii)(B)
[151] *Id.* § 219.10(a)
[152] *Id.* § 219.8(b)
[153] *Id.* § 219.3.
[154] Exec. Order 13,653, § 1
[155] *Id.* § 3
[156] *Id*
[157] *Id.* § 5(a)
[158] USDA, Forest Service, *Climate Change Adaptation Plan*, p. 58 (May 24, 2012), *available at* http://www.usda.gov/oce/climate_change/adaptation/Forest%20Service.pdf.
[159] Forest Service, *Climate Change Adaptation Plan*, p. 58.

plan identifies numerous climate change risks – including increased wildfire, invasive species, water temperatures, extreme weather events, and fluctuating precipitation and temperature – that "pose challenges to sustaining forests and grasslands and the supply of goods and services upon which society depends, such as clean drinking water, forest products, outdoor recreation opportunities, and habitat."[160] With respect to transportation infrastructure specifically, the plan recognizes that, "[w]ith increasing heavy rain events, the extensive road system on NFS lands will require increased maintenance and/or modification of infrastructure (e.g. larger culverts or replacement of culverts with bridges)."[161] The adaptation plan points to a number of actions to address these risks. For example, the plan highlights the 2012 Planning Rule as a mechanism to ensure that "National Forest System . . . land management planning policy and procedures include consideration of climate change."[162] The final directives to the planning rule echo the importance of designing plan components "to sustain functional ecosystems based on a future viewpoint" and "to adapt to the effects of climate change."[163] The adaptation plan also points to Forest Service Manual 2020, which provides "Ecological Restoration and Resilience" directives designed "to restore and maintain resilient ecosystems that will have greater capacity to withstand stressors and recover from disturbances, especially those under changing and uncertain environmental conditions, including climate change and extreme weather events."[164]

B. Existing Plan Direction is Inadequate to Comply with Regulatory Requirements.

Existing plan direction fails to meet the substantive requirements of subpart A or the 2012 Planning Rule. The CNF's 1985 Forest Plan anticipated construction or reconstruction of approximately 60 miles of roads *annually*, or over 3,000 miles over 50 years – constituting a 39% increase over road construction levels at the time the plan was adopted.[165] While the 1985 plan also anticipated closure of approximately 1,790 miles of illegal, user-created "travelways" ("unplanned, unconstructed and unmaintained two-track roads which exist as a result of prior off-road vehicle travel") and a 26% increase in road maintenance, overall the current plan direction emphasizes expansion of the road system and fails to offer direction on identifying or achieving a minimum road system, removing unneeded system roads, or otherwise promoting sustainable transportation infrastructure that helps maintain and restore ecological integrity.[166] Moreover, current plan direction does not address the effects of climate change, which likely will be dominant in road management decision-making over the life of the revised plan.

Accordingly, the Forest Service may not solely rely on or otherwise incorporate existing plan direction to satisfy its substantive duties under subpart A or the 2012 Planning Rule. As explained below, the revised plan and corresponding NEPA process are the appropriate places to comprehensively assess and provide management direction on the forest road system and to ensure timely compliance with subpart A.

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[160] Forest Service, *Climate Change Adaptation Plan*, pp. 60-64.
[161] Forest Service, *Climate Change Adaptation Plan*, p. 62.
[162] Forest Service, *Climate Change Adaptation Plan*, p. 73; *see also* 36 C.F.R. § 219.8(a)(1)(iv) (ecosystem integrity plan components must take into account stressors including climate change, and the ability of ecosystems to adapt to change); *id.* § 219.6(b)(3) (forest assessments must "[i]dentify and evaluate existing information relevant to the plan area for . . . the ability of terrestrial and aquatic ecosystems on the plan area to adapt to change"); *id.* § 219.5(a) (planning framework designed to allow the Forest Service "to adapt to changing conditions, including climate change"); *id.* § 219.12(a)(5)(vi) (monitoring programs must address "[m]easurable changes on the plan area related to climate change and other stressors").
[163] FSH 1909.12, ch. 20, § .23.11.
[164] Forest Service, *Climate Change Adaptation Plan*, p. 73.
[165] Cibola National Forest Land and Resource Management Plan, pp. 9, 31.
[166] *See* Cibola National Forest Land and Resource Management Plan, pp. 9, 30-31.

The CNF's preliminary needs for change recognize the necessity of comprehensively addressing the forest's large and decaying road system in the plan revision: "[t]here is a need for the revised plan to provide updated direction on the management of infrastructure (roads, recreation and administrative facilities, range improvements, etc.) while being adaptive to budgets and resource needs (demand for services, activities, types of facilities)."[167] Other relevant needs for change include providing plan direction on: road maintenance in impaired or at-risk watersheds, potential climate change impacts including flooding, invasive species, restoration of priority watersheds and sustainable management of water resources and their interconnections, aquatic passage and terrestrial connectivity, and sustainable recreation management integrated into all resource management decisions.[168] Collectively, these preliminary needs for change encompass the most significant impacts associated with the forest's road system. We hope they will facilitate meaningful analysis of those impacts and lead to plan direction aimed at making the road system significantly more sustainable, as required under the 2012 Planning Rule, subpart A, and the Forest Service's current roads policy framework.

C. The Forest Service Must Address the Road System in its Plan Revision.

1. The Substantive Requirements of the 2012 Planning Rule Require Meaningful Plan Direction on Roads.

The substantive requirements of the 2012 Planning Rule require the Forest Service to comprehensively address the road system in its plan revision. Given the significant aggregate impacts of that system on landscape connectivity, ecological integrity, water quality, species viability and diversity, and other forest resources and ecosystem services, the Forest Service cannot satisfy the rule's substantive requirements without providing management direction for transportation infrastructure. As described above, plans must provide standards and guidelines to maintain and restore ecological integrity, landscape connectivity, water quality, and species diversity.[169] Those requirements simply cannot be met absent integrated plan components directed at making the road system considerably more sustainable and resilient to climate change stressors. The Forest Service's final directives on infrastructure recognize this: "[t]he central consideration in land management planning for infrastructure is that the integrated desired conditions and other plan components set a framework for the sustainable management of the plan area's infrastructure and mitigation of adverse impacts."[170] To that end, plan components should "reflect the extent of infrastructure that is needed to achieve the desired conditions and objectives of the plan" and "provide for a realistic desired infrastructure that is sustainable and can be managed in accord with other plan components including those for ecological sustainability."[171]

Plan components also must ensure fiscal sustainability. 36 C.F.R. § 219.8(b); *see also id.* § 219.1(g) (plan components generally must be "within . . . the fiscal capability of the unit"); FSH 1909.12, ch. 20, § 23.23l(1)(c) (same). The forest road system, however, suffers from an extraordinary maintenance

[167] Cibola National Forest Preliminary Needs for Change IV.F.a. The preliminary needs for change document states that our proposed need for change to address reclaiming unneeded roads, making the system more ecologically and fiscally sustainable, and moving towards achieving the minimum road system is encompassed by this IV.F.a.
[168] Cibola National Forest Preliminary Needs for Change II.a & b, III.C & E, IV.D & F.b.
[169] 36 C.F.R. § 219.8(a)
[170] Forest Service Handbook (FSH) 1909.12, ch. 20, § 23.23l
[171] *Id.* § 23.23l(1)(b); *see also id.* § 23.23l(2)(a) (desired condition for roads "should describe a basic framework for an appropriately sized and sustainable transportation system that can meet [identified access and other] needs").

backlog of over 3 billion dollars, with inadequately maintained roads more likely to fail, causing corresponding damage to aquatic and other ecological systems and endangering public safety. As described above, the CNF's Forest Assessment Report identifies a large backlog of deferred maintenance needs, with the forest's average annual road maintenance budget in recent years covering only about 19% of the $3.9 million in annual costs required to adequately maintain the forest's 3,129-mile road system.[172] Exacerbating the gross inadequacy of funding to maintain the current system to standard, the CNF's TAPs identify "[m]any roads not needed or that present a greater risk of causing adverse impacts than they are a benefit in providing access opportunities" that remain on the system.[173] As with ecological integrity and sustainability, the Forest Service cannot satisfy its mandate to achieve fiscal sustainability absent plan components that remedy the unwieldy size and decaying nature of the road system. Recommended plan components to satisfy these substantive mandates and achieve a sustainable minimum road system are discussed below in subsection (C)(5).

More generally, the revised plan is the logical and appropriate place to establish a framework for management of the forest road system. Plans "provide[] a framework for integrated resource management and for guiding project and activity decisionmaking." 36 C.F.R. § 219.2(b)(1); *see also id.* § 215(e) (site-specific implementation projects, including travel management plans, must be consistent with plan components). Plans allow the Forest Service to comprehensively evaluate the road system in the context of other aspects of forest management, such as restoration, protection and utilization, and fiscal realities, and to integrate management direction accordingly. Plans also provide and compile regulatory direction at a forest-specific level for compliance with the Clean Water Act, Clean Air Act, Endangered Species Act, and other federal environmental laws relevant to the road system and its environmental impacts. *See id.* § 219.1(f) ("Plans must comply with all applicable laws and regulations . . . ."). And plans allow forest managers and the public to clearly understand the management expectations around the road system and develop strategies accordingly. With frequent turnover in decision-making positions at the forest level, a plan-level management framework for the road system and transportation infrastructure is particularly critical. Moreover, with climate change anticipated to necessitate forest-wide upgrades and reconfigurations of transportation infrastructure, it is especially important that plans provide direction for identifying and achieving an environmentally and fiscally sustainable road system under future climate scenarios.

Lastly, the Forest Service does not have another planning vehicle to direct long-term and forest-wide management of the road system and to ensure compliance with current policy and regulatory direction. Travel Management Plans (TMPs) under subpart B of 36 C.F.R. part 212 are not a substitute for the integrated direction for transportation management that land management plans must provide. The main purpose of TMPs is to designate off-road vehicle use on the existing motorized road and trail system – not to identify a minimum road system pursuant to subpart A, achieve a sustainable transportation system, or otherwise meet the ecological restoration mandates of the 2012 Planning Rule.[174]

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[172] Cibola National Forest Assessment, vol. II, p. 214. While the assessment acknowledges the significant size of its maintenance backlog, it does not quantify the amount of deferred maintenance needs, claiming the amount "is not accurately known." *Id.*
[173] Cibola National Forest Assessment, vol. II, p. 213 (summarizing key findings from TAPs).
[174] *See, e.g.*, Cibola National Forest, Environmental Assessment for Travel Management on the Mt. Taylor Ranger District, p. 5 (2010) (purpose and need is to comply with 36 C.F.R. §§ 212.51(a) & 261.13 by "designat[ing] motor vehicle use on National Forest System roads, trails, and areas").

2. The Plan Revision Should Address Subpart A.

Complementing the substantive requirements of the 2012 Planning Rule, subpart A requires each National Forest to identify its minimum road system, as well as unneeded roads for decommissioning or conversion to other uses.[175] As explained above, the minimum road system must, among other things, reflect long-term funding expectations.[176] With the exception of the Sandia Ranger District, the TAPs for the CNF mountain districts, completed between 2008 and 2010, identified recommended minimum road systems.[177] While this is a critical step (and one that most national forests have yet to undertake), the CNF still must identify its minimum road system and unneeded roads for decommissioning and implement those decisions in order to achieve compliance with subpart A. As the forest's TAPs and more recent assessment recognize, the existing road system is not reflective of current or long-term funding expectations and is not sustainable.

The plan revision is the appropriate place to ensure that subpart A's requirements will be met over the next 10 to 15 years, and to set standards and guidelines for achieving an environmentally and fiscally sustainable minimum road system through decommissioning or repurposing unneeded roads and upgrading the necessary portions of the system. Subpart A defines the minimum road system as that "needed for safe and efficient travel[;] for administration, utilization, and protection of [forest] lands[; and] to meet resource and other management objectives adopted in the relevant . . . plan."[178] With forest plans determining the framework for integrated resource management and "an appropriately sized and sustainable transportation system," direction for identifying and achieving that minimum road system belongs in the forest plan.[179]

Indeed, if the revised plan does not provide plan direction towards achieving a sustainable, minimum road system, it is unlikely that the Forest Service will satisfy the requirements of subpart A during the life of the plan (as evidenced by the lack of direction in the existing plan and the inability of forests to achieve environmentally and fiscally sustainable road systems to date). Forest managers and the public need forest-specific direction on how to achieve the desired minimum road system and ensure its sustainability in the face of climate change, all within realistic fiscal limitations of the unit. The purpose of a forest plan is to provide that direction, and it would be arbitrary for the Forest Service to fail to do so in its plan revision. At the very least, the revised plan must include standards and guidelines that direct compliance with subpart A within a reasonable timeframe following plan adoption.

Recommended plan components to satisfy the requirements of subpart A are discussed below in subsection (C)(5).

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[175] 36 C.F.R. § 212.5(b)(1)-(2).
[176] *Id.* § 212.5(b)(1).
[177] For example, the Mountainair TAP excluded 129 miles of its 524-mile system from its recommended minimum road system, and identified approximately 33% of system routes as having greater risk than benefit that should be considered for decommissioning. The Magdalena TAP excluded approximately 483 out of 1,398 miles from its recommended minimum road system, and the Mt. Taylor TAP excluded approximately 215 out of 1,545 miles. While the Sandia TAP did not recommend a minimum road system, it did identify 4.8 out of 75 .2 miles for decommissioning.
[178] 36 C.F.R. § 212.5(b)(1)
[179] *See* FSH 1909.12, ch. 20, § 23.23l(2)(a).

3. The Forest Service Must Analyze the Road System under the National Environmental Policy Act.

In addition to the requirements of the 2012 Planning Rule and subpart A, NEPA requires the Forest Service to analyze its road system as part of the forest plan revision process. Because they constitute "major Federal actions significantly affecting the quality of the human environment," forest plan revisions require preparation of an environmental impact statement (EIS) under NEPA.[180] The EIS must analyze in depth all "significant issues related to [the plan revision]." 40 C.F.R. § 1501.7; *see also id.* § 1502.1 (an EIS "shall provide full and fair discussion of significant environmental impacts" and "shall focus on significant environmental issues and alternatives"). Management of the forest road system and its significant environmental impacts on a range of forest resources undoubtedly qualifies as a significant issue that must be analyzed in the plan revision EIS.[181]

A robust NEPA analysis of the forest road system and its environmental and social impacts is especially critical in the context of climate change. As the Council on Environmental Quality's recent draft guidance on addressing climate change in NEPA analyses recognizes, "[c]limate change can increase the vulnerability of a resource, ecosystem, human community, or structure, which would then be more susceptible to climate change and other effects and result in a proposed action's effects being more environmentally damaging."[182] The draft CEQ guidance makes clear that "[s]uch considerations are squarely within the realm of NEPA, informing decisions on whether to proceed with and how to design the proposed action so as to minimize impacts on the environment, as well as informing possible adaptation measures to address these impacts, ultimately enabling the selection of smarter, more resilient actions."[183]

Importantly, adequate analysis of the forest road system cannot be provided in a piecemeal fashion under other, individual resource topics in the EIS. That approach would preclude comprehensive analysis of the significant impacts associated with the road system and could result in fragmented and conflicting management direction that fails to satisfy the substantive mandates of the 2012 Planning Rule and subpart A.

4. The Forest Assessment Report Confirms the Need to Provide Plan Direction to Achieve a Sustainable Road System.

Information in the Forest Assessment Report confirms the need for the forest plan revision to comprehensively address and provide management direction aimed at making the road system considerably more sustainable – both ecologically and fiscally – and resilient to climate change stressors. Assessments must identify and evaluate available information on things like the physical condition and fiscal sustainability of existing transportation infrastructure and its impacts on ecological integrity and

[180] 42 U.S.C. § 4332(2)(C); 36 C.F.R. § 219.5(a)(2)(i)
[181] NEPA analysis as part of a previous travel management planning process under subpart B does not satisfy the Forest Service's duty to comprehensively analyze the impacts of its road system in the EIS for the plan revision. As explained above, the purpose of the TMP is to designate existing roads and trails available for off-road vehicle use, not to identify and provide a framework for a sustainable road system.
[182] Council on Environmental Quality, *Revised Draft Guidance for Greenhouse Gas Emissions and Climate Change Impacts*, at 22 (Dec. 18, 2014), *available at* http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance.
[183] *Id.*

species diversity.[184] That information is intended to inform the Forest Service's determination of "how well the current infrastructure supports or contributes to social, economic, or ecological sustainability and what plan components are needed to deal with infrastructure."[185]

As described in detail above, the CNF's Forest Assessment Report shows that the current road system is unsustainable both ecologically and fiscally. The assessment identifies numerous significant adverse impacts associated with the forest's oversized and decaying road system, including degradation of soils, riparian areas, and watersheds. It predicts that those impacts will be exacerbated by climate change and associated reductions in ecosystem health and ability to withstand stressors. And it concludes that "[t]he transportation system as it currently exists is not sustainable, given the continual decline in appropriated road maintenance funding" – currently at only 19% of annual costs needed to maintain the over 3,000-mile system to standard.[186] "Overall, ecosystem services provided by infrastructure on the Cibola are trending negatively and are at risk because much of the infrastructure is deteriorating . . . . This risk may be compounded by the effects of projected climate change (floods, washouts, severe wildfire . . .)."[187]

5. Recommended Plan Components for a Sustainable Road System

The plan components of the revised forest plan should integrate a variety of approaches to satisfy the substantive mandates of the 2012 Planning Rule and subpart A. The following recommendations are based on the Forest Service's current roads policy framework and relevant legal requirements, which are described above, and on the best available science, which is summarized in the attached literature review and which the Forest Service is required to utilize under the 2012 Planning Rule. Where applicable, the recommended plan components also incorporate information from the Forest Assessment Report and other relevant sources of information.

Moving towards an environmentally and fiscally sustainable minimum road system requires removal of unneeded roads (both system and non-system) to reduce fragmentation and the long-term ecological and maintenance costs of the system. As discussed in Appendix I at pages 9 and 11, reconnecting islands of unroaded forest lands is one of the most effective actions land managers can take to enhance forests' ability to adapt to climate change. To that end, the revised plan should prioritize reclamation of unauthorized and unneeded roads in roadless areas (both Inventoried Roadless Areas under the 2001 Roadless Area Conservation Rule and newly inventoried areas under FSH 1909.12, Chapter 70), important watersheds, and other sensitive ecological and conservation areas and corridors.

In addition to creating a connected network of un-roaded and lightly-roaded lands, the plan should address roads-related impairment of watersheds, as identified by the WCF roads and trails indicator and section 303(d) of the Clean Water Act, 33 U.S.C. § 1313(d). The revised plan should prioritize removal of unneeded and unauthorized roads in watersheds functioning at risk or in an impaired condition, or that contain 303(d) segments impaired by sediment or temperature associated with roads. More generally, the plan must implement national best management practices (BMPs) for water quality, 36 C.F.R.

[184] *See* FSH 1909.12, ch. 10, § 13.6.
[185] *Id.*, ch. 20, § 23.23l(1)(a).
[186] Cibola National Forest Assessment, vol. II, pp. 214-15.
[187] Cibola National Forest Assessment, vol. II, p. 222.

§ 219.8(a)(4), and plan components should integrate BMPs into management direction aimed at reducing the footprint and impacts of the forest road system and ensure they are effective in doing so.

A sustainable road system also requires maintenance and modification of needed roads and transportation infrastructure to make it more resilient to extreme weather events and other climate stressors. *See* Exec. Order 13,653, §§ 1, 3, 5(a) (agency tasked with enhancing resilience and adaptation to climate change impacts). As discussed in Appendix I at pages 10-11, plan components should direct that needed roads be upgraded to standards able to withstand more severe storms and flooding by, for example, replacing under-sized culverts and installing additional outflow structures and drivable dips. *See also* FSH 1909.12, ch. 20, § 23.23l(2)(b)(1) (plan components may include road improvement objectives for culvert replacement or road stabilization). Plan components should also prioritize decommissioning of roads that pose significant erosion hazards or are otherwise particularly vulnerable to climate change stressors, and should address barriers to fish passage. *See* FSH 1909.12, ch. 20, § 23.2l(2)(b)(1) (plan components may include decommissioning objectives).

In addition to reducing fragmentation and enhancing climate change adaptation, adoption of road density thresholds for important watersheds, migratory corridors and other critical wildlife habitat, and general forest matrix is one of the most effective strategies for achieving an ecologically sustainable road system. *See* Appx. I at 6-8 & Att. 2 (summarizing best available science on road density thresholds for fish and wildlife). Indeed, there is a direct correlation between road density and various markers for species abundance and viability. *See* Appx. I at 7-8; *see also* FSH 1909.12, ch. 10, § 12.13 & Ex. 01 (identifying road density as one of the "key ecosystem characteristics for composition, structure, function, and connectivity" used to assess the "status of ecosystem conditions regarding ecological integrity"). Plan components should incorporate road density thresholds, based on the best available science, as a key tool in achieving a sustainable minimum road system that maintains and restores ecological integrity. *See* FSH 1909.12, ch. 20, § 23.23l(2)(a) (desired condition for road system may describe desired road density for different areas). In doing so, it is critical that the density thresholds apply to all motorized routes, including closed, non-system, and temporary roads, and motorized trails. *See* Appx. I Att. 2 (describing proper methodology for using road density as a metric for ecological health).

A sustainable road system must also be sized and designed such that it can be adequately maintained under current fiscal limitations. *See* FSH 1909.12, ch. 20, § 23.23l(1)(c) (plan components for road system "must be within the fiscal capability of the planning unit and its partners"). Inadequate road maintenance leads to a host of environmental problems.[188] It also increases the fiscal burden of the entire system, since it is much more expensive to fix decayed roads than maintain intact ones, and it endangers and impedes access for forest visitors and users as landslides, potholes, washouts and other failures occur.

Recommendations: To integrate the approaches described above and satisfy the substantive mandates of the 2012 Planning Rule and subpart A, we recommend the following plan components and elements, which are supported by best available science, as the building blocks of a framework for sustainable management of forest roads and transportation infrastructure:

[188] *See* Appx. I at 14-15.

- *Clearly and comprehensively articulate all regulatory requirements applicable to transportation infrastructure.*

This could be accomplished in a background section that explains the requirements of subpart A, related implementing memoranda, and other regulatory requirements related to roads management (*e.g.*, U.S. Fish & Wildlife Service critical habitat and other Endangered Species Act requirements; requirements under Executive Order and associated adaptation plans; applicable best management practices; Roadless Area Conservation Rule requirements; etc.). The explanation of subpart A must make clear that the Forest Service (if it has not already) is required to complete a science-based analysis to identify a minimum road system and unneeded roads for decommissioning or conversion to other uses, and to implement those findings. Ideally, plan components will provide direction for expeditiously identifying and implementing the minimum road system through a subsequent NEPA process and future project-level actions, as described below.

- *Desired Future Condition includes achievement and maintenance of an appropriately sized and environmentally and fiscally sustainable minimum road system.*

The Forest Service's current roads management policy framework is generally aimed at shrinking the agency's vast and decaying road system and its host of adverse environmental and social impacts. Accordingly, the desired future condition for transportation infrastructure should include a well-maintained system of needed roads that is fiscally and environmentally sustainable and provides for safe and consistent access for the utilization and protection of the forest. That forest road system is designed and maintained to withstand future storm events associated with climate change and to prioritize passenger vehicle access to major forest attractions. The road system reflects long-term funding expectations. Unneeded roads, including temporary and non-system roads, are decommissioned and reclaimed as soon as practicable to reduce environmental and fiscal costs. Reclamation efforts are prioritized in roadless and other ecologically sensitive areas to enhance ecological integrity and connectivity and to facilitate climate change adaptation. The system meets density standards, based on the best available science, for all motorized routes in important watersheds and wildlife habitat, migratory corridors, and general forest matrix, and for relevant threatened and endangered species and species of conservation concern. Road construction, reconstruction, decommissioning, and maintenance activities are designed to minimize adverse environmental impacts. Passenger vehicle roads are maintained to standard to ensure reliable access to popular developed recreation sites.

- *Objectives provide a concise, measurable, and time-specific statement of a desired rate of progress towards achieving a sustainable minimum road system.*

    1. Over the life of the plan, decommission all roads identified as likely not needed for future use in the TAP. Within 10 years of plan approval, decommission high-priority, unneeded roads with the most benefit in achieving an ecologically and fiscally sustainable transportation network (e.g., roads posing a high risk to forest resources, roads in inventoried roadless areas and other ecologically sensitive areas, etc.).

2. Over the life of the plan, implement the minimum road system.

3. Within 10 years of plan approval, address all roads within at-risk and impaired watersheds according to the WCF roads and trails indicator, and within watersheds contributing to sediment or temperature impairment of under section 303(d) of the Clean Water Act.

- *Standards ensure that roads do not impair ecological integrity and otherwise satisfy the substantive requirements of the 2012 Planning Rule and subpart A.*

1. To ensure ecological integrity and species viability, establish density standards based on the best available science for all motorized routes:
    a. In important watersheds, wildlife habitat, migratory corridors, and general forest matrix; and
    b. For relevant species or resources present on the forest, including but not limited to threatened and endangered species and species of conservation concern.

2. Within 3 years of plan adoption, the forest shall identify its minimum road system and an implementation strategy for achieving that system that is consistent with forest plan direction and relevant regulatory requirements.

3. The forest shall make annual progress toward achieving the minimum road system and motorized route density standards, including but not limited to decommissioning 5% of roads identified as unneeded each year.

4. The forest shall identify and update as necessary its road management objectives for each system road and trail.

5. With respect to temporary roads, the forest shall:
    a. Within 5 years of plan approval, establish a publicly available system for tracking temporary roads that includes but is not limited to the following information: road location, purpose for road construction, the project-specific plan required below, year of road construction, and projected date by which the road will be decommissioned. Within 10 years of plan approval, all temporary roads will be reflected in the tracking system.
    b. "No temporary road shall be constructed . . . prior to the development of a project-specific plan that defines how the road shall be managed and constructed. The plan must define the road design, who are responsible parties and their roles in construction, maintenance and decommissioning, the funding source, a schedule for construction, maintenance and decommissioning, the method(s) for decommissioning, and post-decommissioning monitoring requirements for determining decommissioning success."[189]

[189] San Juan National Forest Land and Resource Management Plan, Standard 2.13.22, p. 101.

c. All temporary roads will be closed and rehabilitated within a reasonably short time following completion of the use of the road.
d. Over the life of the plan, all unaddressed temporary roads will be decommissioned.

6. All roads, including temporary roads, will comply with applicable and identified Forest Service best management practices for water management.

7. With respect to riparian management zones, the forest shall:
    a. Establish widths for riparian management zones around all lakes, springs, perennial and intermittent streams, and open-water wetlands.
    b. Ensure that all management practices and project-level decisions with road-related elements in riparian management zones do not cause detrimental changes in water quality or fish habitat.

8. Watershed restoration action plans address road-related impacts identified in the TAP.

- *Guidelines are designed to achieve a sustainable minimum road system.*

1. Project-level decisions with road-related elements implement TAP recommendations and advance implementation of the minimum road system and motorized route density standards.

2. Routes identified for decommissioning through the TAP or other processes will be closed, decommissioned, and reclaimed to a stable and more natural condition as soon as practicable.

3. Prioritize road decommissioning to enhance landscape connectivity and ecological integrity based on:
    a. Effectiveness in reducing fragmentation, connecting un-roaded and lightly-roaded areas, and improving stream segments, with a focus on inventoried roadless areas, important watersheds, and other sensitive ecological and conservation areas and corridors;
    b. Benefit to species and habitats;
    c. Addressing impaired or at-risk watersheds;
    d. Achieving motorized route density standards; and
    e. Enhancement of visitor experiences.

4. Prioritize maintenance of needed routes based on:
    a. Storm-proofing needs and opportunities (e.g., relocating roads away from water bodies, resizing or removing culverts, etc.);
    b. Reducing landscape-scale fragmentation and enabling landscape-scale processes;
    c. Restoring aquatic and terrestrial habitats and habitat connections; and
    d. Increasing resilience.

XIII. Fire and Climate Change

A. Background

1. Regulatory Framework

The 2012 planning rule's substantive ecological sustainability provision requires the Forest Service to formulate:

> "[P]lan components, including standards and guidelines, to maintain or restore the ecological integrity of terrestrial and aquatic ecosystems and watersheds in the plan area, including plan components to maintain or restore structure, function, composition, and connectivity, taking into account:
> …
> (iv) System drivers, including dominant ecological processes, disturbance regimes, and stressors, such as…wildland fire…and climate change; and the ability of terrestrial and aquatic ecosystems on the plan area to adapt to change.
>
> (v) Wildland fire and opportunities to restore fire adapted ecosystems."[190]

When developing plan components for ecological integrity and, specifically, opportunities to restore fire-adapted ecosystems, the directives state that:

> [T]he Interdisciplinary Team should consider and integrate together plan components related to wildland fire, fuels management, and restoration of fire-adapted ecosystems (36 C.F.R. 219.8(a)(1)(v)).[191]

The directives go on to say that the plan components should be based on, among other things, the National Cohesive Wildland Fire Management Strategy, fire's historic role in the plan area, trends in fire behavior, and Wildland Urban Interface (WUI) areas identified in the Forest Assessment Report, or from information brought forward during the public participation process.[192]

2. Overview

In this section of our letter, we propose a 3-zone approach for managing for fire and an adaptive land management scheme that addresses climate change. These two management schemes will help "integrate together plan components related to wildland fire, fuels management, and restoration of fire-adapted ecosystems" per the directives.[193] Further, the 3-zone approach is based on many of the suggested sources

[190] 36 C.F.R. § 219.8(a)(1)
[191] FSH 1909.12 § 23.11(c)
[192] *Ibid.*
[193] *Id.*

of information identified in the directives and should be considered information brought forward during the public participation process.

Fire Management

The CNF occupies a fire-prone landscape, and the management of wildland fire is one of the most important issues to be addressed in the forest plan. According to the Forest Assessment Report, much of the vegetation of the CNF is fire-dependent, and the absence of fire, combined with historical logging and grazing, has degraded forest conditions. The Forest Plan must establish a system to restore fire to the landscape. As the Assessment concludes, "Future consideration should emphasize ecosystem restoration activities that seek to emulate historic plant community structure and fire regimes, and in turn, mitigate the effects of insects and disease and improve soil condition."[194]

In 1989, Arno and Brown proposed a scheme intended to focus fire suppression where it would produce the greatest benefit and to allow fire to restore plant community structure and fire regimes where safe. This 3-zone fire management strategy segregated landscapes into a wilderness fire zone, a "residential zone" (i.e. WUI), and a zone in between where fuels should be managed through forestry. Aplet and Wilmer (2010) expanded on this idea to argue for restoration forestry beyond the WUI and a dramatic expansion of the wilderness fire zone to include all areas sufficiently distant from communities that fire is not an immediate concern.

The CNF is perfectly suited to implement this three-zone strategy. WUI, fire-prone forest suitable for restoration, and remote backcountry all exist to varying degrees on the forest. According to the data provided on the CNF GIS webpage[195], the WUI exists on about 129,000 acres (~8%) of the forest, where management activities could be taken to address community safety concerns (Appendix J - Map 1). Some of these activities could combine fire hazard mitigation with forest restoration.

According to the Forest Assessment Report, all major vegetation types on the Forest are at moderate to high risk at some scale, largely as a result of the loss of large trees to historical logging and/or the increase in forest density due to soil disturbance and fire exclusion.[196] Treatment options include mechanical thinning, prescribed fire, and managed wildfire. To assess the potential to use mechanical treatment in a "restoration zone," we applied methods derived from North et al. (2015) to determine the extent of "operable" land across the forest. Following North, we removed from the landbase: 1) designated wilderness, 2) IRAs, 3) steep ground >35% slope, and 4) remaining areas farther than 1000 feet from existing roads.[197] Use of machinery is prohibited in wilderness and impractical on steep slopes and far from roads (without prohibitively expensive new road construction that would be contrary to Forest Service policy designed to down-size the forest road system). Commercial logging is generally prohibited in IRAs. The process of analysis is presented in Appendix J-Figure 1, and the result is displayed in Appendix J-Figure 2.

[194] Cibola National Forest Assessment, vol. I, p. 219.
[195] CNF GIS webpage is online here: http://www.fs.usda.gov/detail/r3/landmanagement/gis/?cid=stelprdb5212078.
[196] Cibola National Forest Assessment, vol. I, p. 30.
[197] Our analysis used all Maintenance Level 1-5 roads. It is important to note that many of these roads were identified as unneeded in the travel analysis process. Had the results of the travel analysis process been available in GIS format, we would not have used those roads identified as unneeded when conducting our analysis.

We then overlaid this "mask" on ponderosa pine and mixed-conifer forest types, the vegetation types on the CNF for which mechanical treatment is a viable tool. (Other vegetation types may warrant restoration treatment, but mechanical treatment is not practical, due to the cost of treatment and the improbability of removing commercially viable product to offset treatment costs. There, restoration options are limited to hand treatment and the use of fire.) The result is displayed in Appendix J-Figure 3, which reveals that 206,740 acres of ponderosa pine and mixed-conifer forest potentially suitable for restoration exists on operable ground, mainly on the Mt. Taylor Ranger District, the Manzano Mountains, and the northwest corner of the San Mateo Mountains unit. (These lands will be labeled "operable and restorable lands.") Of these lands that are both operable and restorable, 29,999 occur within the WUI (most of it on the Mountainair District), where forest restoration could contribute to community protection goals. Some portion of the remaining 176,741 operable-restorable acres could provide the basis for a substantial forest restoration initiative. A portion of these acres occur in the Zuni Mountains, where the Blue Mountains Collaborative Forest Landscape Restoration Project has already made restoration a management priority.

The remainder of the forest consists either of inoperable ground or of vegetation types that are inappropriate for mechanical treatment. Where these acres are adjacent to the WUI, they may be worth treating using hand crews and prescribed fire, but where land is sufficiently remote,[198] it is ideally suited for a "wilderness fire zone" (Arno and Brown 1989) or a "Fire Use Emphasis Zone" (Aplet and Wilmer 2010), where lightning ignitions are allowed to burn under moderate weather conditions for their ecological benefits. The remoteness of the San Mateos and other mountains in the Magdalena District and the Guadalupe area in the northeast corner of the Mt. Taylor district makes it well-qualified for assignment to this zone.

In summary, the distribution of WUI, restorable forest, and remote backcountry on the CNF makes it an ideal candidate for application of a 3-zone fire management strategy. With 8 percent of the Forest in WUI, another 177,000 acres potentially suitable for mechanical forest restoration, and the remainder in inaccessible or unsuitable vegetation, the Forest could easily be allocated to strategies of community protection, forest restoration, and fire use. Diligent adherence to these objectives would go a long way toward achieving the "ecosystem restoration activities that seek to emulate historic plant community structure and fire regimes" called for in the Assessment Report.

Our methodology for this analysis can be found in Appendix J along with North's report. We offer this analysis as a general framework for managing fire across the CNF. There are obviously many other factors beyond those in our analysis that must be considered when determining specific areas that are appropriate for mechanical vegetation treatment.[199]

[198] In other analyses (e.g., Aplet and Wilmer 2010), we have used five miles from communities as a reasonable approximation of this distance, which has been generally well received by the fire management community, but we recognize that this will have to be socially mediated in every landscape, as communities differ in their risk tolerance. Community-level understanding of fire danger and funding limitations affect risk tolerance and can be influenced by education efforts.

[199] Some of these additional factors that must be considered before determining areas that are appropriate for mechanical treatment include the degree to which stand structure is within the natural range of variability, whether there are endangered, threatened or candidate species, sensitive ecosystems, cultural resources, or popular recreation destinations in the area that could be adversely impacted, whether the roads used in our analysis are appropriate to use in a future vegetation treatment project. For example, our analysis identified lands to the southwest of the Withington Wilderness as being both potentially operable and restorable. We believe this area has many conservation values (e.g., MSO critical habitat, elk caving and critical elk winter range

Climate Change

Fire management would be challenging enough in the arid forests of the CNF even without a drying climate, but, as the Assessment suggests, climate change presents risks and uncertainties to the future of virtually every vegetation type on the forest.[200] In contrast to fire management, which is a relatively tractable issue, where intervention under a stable climate may be seen as a one-time, "corrective" action, management under a changing climate presents an ongoing puzzle. How should we respond to pressures, like climate change, that are irreversible and whose effects are largely unknown? Under such uncertainty, management requires an experimental approach. The three-zone strategy described above may be applied simply as a fire management scheme, but it may equally be applied as an adaptive management experiment.

Active adaptive management requires experimenting with a diversity of approaches, monitoring the results of each, and adapting future management based on what is learned. Instead of a single, "optimal" approach, adaptive management under climate change will require a "portfolio approach" in which different parts of the landscape are managed to achieve different outcomes as the climate changes (Belote et al. 2014). Under this scheme, some parts of the landscape would be devoted to forestalling change through the process of ecological restoration, some parts would be devoted to innovative management that anticipates climate change and guides ecological change to prepare for it, and other parts are left to change on their own time to serve as scientific "controls" and to hedge against the unintended consequences of active management elsewhere. Uncertainty about how ecosystems and species will respond to co-occurring, interactive, and synergistic impacts of the "Anthropocene" precludes us from knowing which strategy will best sustain wildland values into the future. All three strategies should be implemented in an experimental portfolio approach that spreads risk among different strategies.

The diverse geography of the CNF presents a perfect template for setting up such an experiment. The almost 120,000 acres of operable and restorable land on the Mt. Taylor Ranger District make it an ideal landscape to allocate to a strategy of restoration. Further, the high concentration of WUI on the Sandia Ranger District and the Manzano Mountains on the Mountainair Ranger District make the non-wilderness and non-IRA portions of these landscapes well suited to a strategy of innovative management to protect communities and sustain forest values through novel management approaches that anticipate climate change. In contrast, the remoteness of the Magdalena Ranger District makes it the ideal place simply to observe change and compare it to the landscape-level effects resulting from management on the rest of the forest. Few forests possess the geographic separation of distinct land uses present on the CNF, making it the ideal place to experiment with a portfolio of climate adaptation options.

Furthermore, zoning the forest based on fire management and climate adaptation strategies serves the needs identified in Need for Change Statements I.a. and I.b. for a plan that addresses "how forest management…should be prioritized" (I.a.) and for management areas that "reduce complexity and increase flexibility" (I.b.). Also consistent with need-for-change statement 1.b., the sizes of the zones can

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habitat, TNC key conservation area due to species richness, and is priority crucial habitat under the NMGF CHAT) that could be disrupted as a result of mechanical treatment.

[200] Cibola National Forest Assessment, vol. I, Table 16, p. 65.

be adjusted "to reflect realistic expectations regarding the amount of work that can be achieved within a planning cycle." The fire management zones described above meet the need described in statement II.c. for "direction for an integrated resource approach to prescribed fire activities, and to address fuel accumulations in the Wildland Urban Interface" and the need described in III.A.a. for "restoring natural disturbance cycles…" The same strategy also meets the need described in statement IV.C.1.a. for "plan direction for restoration treatments for those Geographic Areas and Ecological Response Units that are most outside of the natural range of variability while considering capability of local infrastructure…" and for "removal of miscellaneous products for commercial, noncommercial, and tribal and land grant use" (statement IV.C.1.b.).

The allocation of the forest to a "portfolio" of outstanding opportunities for restoration, innovation, and observation is consistent with the 3-zone fire management strategy described above and also meets the need for a climate adaptation strategy, as identified in need-for-change statement II.a. The proposed portfolio approach would also help the Forest Service satisfy existing policy direction on the agency's responsibility for developing an adaptation strategy. We walk through these authorities in the roads of this letter at V(A)(2)(c). By providing explicitly for a range of adaptation options, the portfolio approach also meets the need described in statement III.E.a. for "plan components to contribute to the recovery and conservation of federally recognized species, maintain viable populations of species of conservation concern, and maintain common and abundant species within the plan area" in the face of climate change.

B. Factors to Consider in the Environmental Analysis

The CNF identified several needs for change that pertain to providing direction for vegetation management. This includes direction that better addresses the WUI, prescribed fire, and mechanical restoration. The EIS will include a series of alternative approaches for managing vegetation as well as the impacts of each alternative. We request that this impacts analysis include a fiscal analysis that takes into account the economics of fuels treatments. We believe a fiscal analysis could help the CNF identify what is feasible in terms of vegetation treatments which should, in turn, help the CNF develop achievable and realistic management direction.[201]

We request that the fiscal analysis consider, at the very least, the following factors: 1) What is the CNF's projected annual budget for mechanical treatments? This can be easily calculated based on a 10-year running average. 2) How many acres can the CNF reasonably expect to mechanically treat each year with its projected budget, taking into account the necessary NEPA review?[202] 3) Based on best available science, how frequently will the CNF need to treat the WUI in order to protect communities from a fire? We request that the CNF attempt to answer these questions and utilize this information as it develops direction for addressing vegetation management.

As stated above, our analysis identified about 30,000 acres of land that are both operable and restorable and occur within the WUI. Most of this land is in the Mountainair District. If the agency attempts to set

[201] The Forest Assessment Report notes that 53% of the CNF is in vegetation condition class (VCC) 2 (moderate) and 23% in VCC 3 (high). Cibola National Forest Assessment, vol. I, p. 45. With 75% of the entire forest in a moderate or high VCC classification, it will be difficult to set management priorities. We believe a fiscal analysis could help set sideboards and offer a framework to guide the agency's thinking.

[202] This would take into account the cost per acre to mechanically thin versus prescribed burning.

priorities for vegetation treatments in this planning process, we encourage the agency to consider in its analysis this subset of land where forest restoration could contribute to community protection goals.

C. Alternatives to Consider in the EIS

1. Three Zone Approach for Fire Management

We request that the CNF takes a 3-zone approach to fire management in the forest plan. These zones, as described above, are the WUI, fire-prone forest suitable for restoration, and remote backcountry that is best suited for fire use. The delineation of these zones should be informed by the information provided above.

2. "Portfolio" approach to land management to address climate change

We request that the CNF take a "portfolio" approach for responding to climate change in the forest plan. This portfolio approach is an adaptive management strategy that is comprised of three zones:

- Restoration Zone: areas that are devoted to forestalling change through the process of ecological restoration

- Innovation Zone: areas that are devoted to innovative management that anticipates climate change and guides ecological change to prepare for it; and

- Observation Zone: areas that are left to change on their own time to serve as scientific "controls" and to hedge against the unintended consequences of activities management elsewhere.

The 3-zone strategy for managing fire may be applied simply as a fire management scheme, but it may equally be applied as an adaptive management experiment. We deciding a zoning scheme for creating the portfolio approach, we request that the agency take into consideration the following:

- Lands identified as operable and restorable in our analysis can be used to identify the restoration zone;
- The WUI can be used to identify the innovation zone; and
- Designated wilderness, IRAs, and the CNF's Chapter 70 wilderness inventory can be used to identify the observation zone.

XIV. Conclusion

We extend our appreciation to the Forest Service for the opportunity to provide these comments in response to the Notice of Intent to revise the CNF's forest plan and prepare an associated EIS. To date the CNF has done a commendable job interacting with the public, providing timely information, and responding to concerns. Our intent in providing these comments is to work cooperatively with the Forest

Service and the larger interested public to ensure that the CNF – as a public trust resource – is properly managed for the long-term public interest for the benefit of existing and future generations.

Our comments address four core topics that we expect the CNF to address in its forest plan by developing meaningful plan components, including standards and guidelines. These four topics are: protecting and restoring key conservation areas, roadless areas, and wilderness quality lands, which includes establishing or recommending designated areas; providing and managing for sustainable recreation; providing for an affordable and ecologically sustainable roads system; managing for fire and climate change. We provided information in this letter related to these four topics for the agency to utilize as it finalizes its need for change statements, formulates a range of reasonable alternatives and conducts its NEPA impacts analysis. Further, utilizing the information in this letter will help the agency satisfy the substantive provisions in the rule at 219.8 through 219.10 related to ecological integrity and species diversity.

The forest plan revision process presents an opportunity to create a vision and guiding framework that will protect wildlands, wildlife, water and other natural resources that are currently intact but also restore those values that have suffered from a history of intensive use.

We request that the agency please contact us if it is considering eliminating a recommendation proposed in our letter from detailed study in an alternative in order to give us a chance to clarify any confusion or misunderstandings that may be cause for elimination. We look forward to working with the Forest Service as the forest plan revision process moves forward. We are available to discuss our comments raised in the letter.

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