



Coconino National Forest

ATTN: Supervisor Earl Stewart and Plan Revision Team: Vern Keller, Noah Bard

1824 S. Thompson St.

Flagstaff, AZ 86001

Submitted via email on March 20, 2014 to

coconino_national_forest_plan_revision_team@fs.fed.us and electronically via
<https://cara.ecosystem-management.org/Public/CommentInput?Project=32780>

**RE: DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR REVISION OF THE
 COCONINO NATIONAL FOREST LAND AND RESOURCE MANAGEMENT PLAN**

Attached Documents:

- Appendix 1 _ORV_BMP_2008.pdf
- Appendix 2_Sedona Amendment 12.pdf

Dear Supervisor Stewart and Plan Revision Team:

This letter supplies comment from the Sierra Club Grand Canyon Chapter, Center for Biological Diversity, WildEarth Guardians, Friends of Flagstaff's Future, Arizona Ecumenical Council Earth Care Commission, Great Old Broads for Wilderness, Northern Arizona Audubon Society, Arizona Interfaith Power and Light, Grand Canyon Wildlands Council, Arizona Wilderness Coalition, Public Employees for Environmental Responsibility, and Grand Canyon Wolf Recovery Project, responding to the Draft Environmental Impact Statement ("DEIS") for revision of the Coconino National Forest Land and

Resource Management Plan (“Forest Plan”, “Plan”, “LRMP”, or “DLRMP”). We wish to incorporate by reference the comments submitted separately by Keep Sedona Beautiful.

These groups have a significant interest in the Coconino National Forest and our members use the area for hiking, camping, backpacking, cycling, bird watching, wildlife viewing, scientific research, astronomy, photography, and more. We have all been involved in the planning process for the Coconino and have long advocated for its protection.

The Sierra Club’s Grand Canyon Chapter has 35,000 members and supporters in Arizona. The Sierra Club’s mission is “to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth’s ecosystems and resources; and to educate and enlist humanity to protect and restore the quality of the natural and human environments.”

The Center for Biological Diversity is a non-profit public interest organization with offices located in Flagstaff and Tucson, Arizona, representing more than 500,000 members and supporters nationwide dedicated to the conservation and recovery of species at-risk of extinction and their habitats.

WildEarth Guardians protects and restores wildlife, wild rivers, and wild places in the American West. They have programs focusing on wildlife, wild places, wild rivers, and climate and energy.

The mission of Friends of Flagstaff’s Future (F³) is to sustain and enhance the greater Flagstaff area's high quality of life through activism and advocacy of policies supporting a livable community. F³ works toward a more resilient, sustainable, and just community and economy by elevating stewardship of our built and natural environment, minimizing consumption and destruction of energy and resources, promoting social justice, and strengthening the local and green economy.

The Arizona Ecumenical Council Earth Care Commission pledges to pray for the earth and all her creatures; gather and disseminate information regarding eco-justice and environmental committees and agencies of all Christ churches and demoninations; educate respective communions and the community-at-large concerning the gravity of environmental issues and the promise of spiritual, sociological, and technological solutions to those problems; and promote action on eco-justice by acting as a catalyst for change through the processes of the Arizona Ecumenical Council and by providing opportunities for members to experience Christian unity while caring for creation.

Great Old Broads for Wilderness is a national organization that uses the voices and activism of elders to preserve and protect wilderness and wild lands. Conceived by older women who love wilderness, Broads gives voice to the millions of older (and not so able) Americans who want to protect their public lands as Wilderness for this and future generations. Great Old Broads for Wilderness bring voice, knowledge, commitment, and humor to the movement to protect our last wild places on earth.

Northern Arizona Audubon is a leading non-profit engaging people in the enjoyment and conservation of birds and their habitats in the northern part of the state. Northern Arizona Audubon actively leads in habitat preservation of local birding hot spots such as Rio De Flag and Page Springs.

Arizona Interfaith Power and Light is an interfaith ministry devoted to deepening the connection between ecology and faith, with a goal to help people of faith recognize and fulfill their responsibility for the stewardship of creation. Specifically, the Arizona Interfaith Power and Light campaign is mobilizing a national religious response to global warming while promoting renewable energy, energy efficiency and conservation.

Grand Canyon Wildlands Council is a regional conservation organization dedicated to protecting and restoring Wild Nature in the Grand Canyon Ecoregion. For the past 15 years, Grand Canyon Wildlands Council has invested significant time and resources advocating for the proper planning and management of forests and other public lands of the Colorado Plateau, including the Coconino National Forest.

The Arizona Wilderness Coalition's mission is to permanently protect and restore wilderness and other wild lands and waters in Arizona for the enjoyment of all citizens, and to ensure that Arizona's native plants and animals have a lasting home in wild nature. The Arizona Wilderness Coalition does this by coordinating and conducting inventories, educating citizens about these lands, enlisting community support, and advocating for their lasting protection. Many of their members visit this forest specifically to enjoy its solitude and quiet recreational opportunities.

Public Employees for Environmental Responsibility (PEER) is a national alliance of local, state, and federal resource professionals. PEER works nationwide with government scientists, land managers, environmental law enforcement agents, field specialists and other resource professionals committed to responsible management of America's public resources.

The Grand Canyon Wolf Recovery Project is dedicated to restoring wolves and ecological health to the Grand Canyon region. They work collaboratively with partner organizations to educate and motivate the regional public to support wolf restoration. By creating meaningful opportunities for the public to learn about wolves, experience their habitat firsthand, interact with land managers and engage in public decisionmaking, they are making positive grassroots change to achieve improved and sustainable habitat conditions for wildlife, specifically wolves. Their goals are to compel leadership within the Grand Canyon National Park, surrounding land management agencies, and the regional community to help lead the way for the return of Mexican gray wolves, the most endangered land mammal in North America, to a suitable portion of their historic range in Arizona and southern Utah.

Thank you for accepting our suggestions. We hope this comment letter will help the Forest Service create a strong Land and Resource Management Plan that will protect our forests into the future. We request that the Forest Service follow up with us and would like to set up a meeting with the Plan Revision Team to discuss the contents of this letter. Please contact Alicyn Gitlin with the Sierra Club Grand Canyon Chapter to arrange a meeting after you review our comments: alicyn.gitlin@sierraclub.org or (928) 774-6514.

I. LEGAL FRAMEWORK FOR FOREST PLANNING/NFMA

The National Forest Management Act ("NFMA") directs the Secretary of Agriculture to issue regulations "that set out the process for the development and revision of the land management plans, and the guidelines and standards prescribed by this subsection." 16 U.S.C. § 1604(g) (1982). The Secretary "shall ... incorporate the standards and guidelines required by this section in plans for units of the National Forest System..." *Id.* § 1604(c). The 1982 planning regulations implementing NFMA state, "Plans guide all natural resource management activities and establish management standards and guidelines for the National Forest System. They determine resource management practices, levels of resource production and management, and the availability and suitability of lands for resource management." 36 C.F.R. § 219.1(b) (1982). Standards and guidelines in forest plans must be "qualitative and quantitative." *Id.* at § 219.1(b) (12). Forest plans must establish "standards and requirements by which planning and management activities will be monitored and evaluated." *Id.* § 219.5(a) (7). Additionally, plans must define reasons for management practices chosen for each vegetation type and circumstance. *See id.* § 219.15.

II. SENSITIVE SPECIES

The 1982 NFMA implementing regulations provide for the persistence of fish and wildlife on national forest lands. They require the Forest Service to manage fish and wildlife habitat to maintain viable populations of existing fish and wildlife species. *See* 36 C.F.R. § 219.19 (1982). In order to ensure viable populations, the agency must provide for a minimum number of reproductive individuals and the habitat required for well distributed individuals to interact with others in the planning area. *Id.* Additional protection is provided to threatened and endangered species and their habitat in order to both “prevent the destruction or adverse modification of such habitat” and “provide for, where possible, their removal from listing.” *Id.* at § 219.19(a) (7).

To be useful and meaningful, the analysis of the environmental consequences of alternatives should explicitly apply the viability requirement, specify a minimum number of reproductive individuals for each species of planning concern, and demonstrate that the spatial distribution of habitat is adequate to maintain populations. The Draft Environmental Impact Statement (DEIS) does not consider the minimum number of reproductive individuals for species of planning concern, nor does it demonstrate that the spatial distribution of habitat is adequate to maintain viable populations. It merely equates habitat condition and abundance of that habitat throughout the forest with likelihood of species viability. That approach will not ensure species viability because the Forest Service has a poor track record for improving habitat for threatened, endangered and sensitive species. To meet NFMA regulation requirements, the Forest Service needs to identify the number of individuals of each species needed for viability and the spatial distribution of habitat needed to allow for interactions between individuals.

The Draft Forest Plan also contains inadequate standards and guidelines for listed and sensitive species. The Current Forest Plan contains specific management standards and guidelines for the Mexican spotted owl, (Current Plan at replacement page 65-65-6), and northern goshawk, (Current Plan at 65-7-65-11). The Draft Forest Plan provides no standards and guidelines for the Mexican spotted owl, and provides only one guideline specifically for the northern goshawk. While the Forest Service dismisses Alternative A (the Current Forest Plan) in the DEIS analysis regarding Mexican spotted owl recovery because it “contains language from the original recovery plan, which has since been updated,” (DEIS at 456), the Forest Service provides no rationale for excluding updated standards and guidelines based on the current species’ recovery plan. Instead, the Forest Service suggests that recovery of the Mexican spotted owl and other species will occur due to the presence in the Draft Plan of “[d]esired conditions and other plan components for the primary vegetation types” used by listed species, (Draft Plan at 458), and because the Draft Forest Plan “by inference includes more current science,” (DEIS at 459). This is insufficient management guidance to provide for the recovery of listed species. Moreover, the Forest Service must identify the reasons for this change in management strategy. *Motor Vehicles Manufacturers Assoc. v. State Farm*, 463 U.S. 29, 57 (1983) (“[A]n agency changing its course must supply a reasoned analysis.”).

Recovery plans are not enforceable in site-specific project implementation, and merely referencing them in a revised forest plan does not insure species viability. The U.S. Fish and Wildlife Service (“FWS”) recognized the importance of plan-level standards and guidelines to limit discretion of forest managers in planning projects that may harm Mexican spotted owl. It stated on page 39 of its November 25, 1996 biological opinion (“jeopardy opinion”) on forest plan implementation that much discretion existed on the part of forest managers at the project level in the implementation of forest plan guidance and direction. The jeopardy opinion identified management “discretion” as a reason why older forest plans violated Section 9 of the Endangered Species Act (“ESA”), expressed concern for the “broad range of effects that could result from management direction of the existing forest plans,” and suggested that “management

direction to prevent the development of forest project-level activities that are likely to adversely affect” MSO was needed to avoid jeopardy. As a result of this jeopardy opinion, Region 3 forest management plans were amended to include specific standards and guidelines for protection of Mexican spotted owl. The decision to remove specific standards and guidelines regarding the Mexican spotted owl and the northern goshawk highlight the Forest Service’s goal of achieving maximum discretion when making project-level decisions. This level of discretion fails to ensure the Forest Service will be able to meet the goals of recovery and delisting as set out in NFMA regulations and the ESA.

Currently, native fish populations in the Coconino face many threats; 15 of the 16 native fish species that occur on the forest are federally listed or classified as sensitive by the Southwestern Region. (Draft Plan at 72). The Forest Service has attributed this decline in large part to the presence of non-native fish, which “eat, compete with and can hybridize with native fish.” (USDA 2009 at 4-121). Additionally, disease is a primary threat to native fish and non-native fish can transfer disease to native fish. (DEIS at 333). In fact, in its supplemental analysis of aquatic ecosystems within the Coconino, the Forest Service adopts the view that “[t]he primary causal factor for extinction of native fishes in the Southwest is directly related to the introduction of nonnative fish.” (USDA 2013 at 10). However, the Forest Service does not provide standards, guidelines, or management strategies within the Draft Forest Plan to decrease the presence of non-native fish within the Coconino or manage them in such a way to lead to the recovery of native species. Instead, the Forest Service appears to want to have it both ways, allowing for the continued presence of non-native fish, while attempting to improve the viability of native fish species. Additionally, the DEIS provides no analysis of the effects, whether direct or cumulative, of continuing to support non-native fish populations at current levels.

Specifically, the Draft Forest Plan includes desired conditions that include supporting “sustainable populations of . . . desirable nonnative . . . animal species [through] healthy ecosystems and ecologically responsible forest activities,” while also desiring “[h]abitat conditions [that] contribute to the survival and recovery of listed species.” (Draft Plan at 72-73). There is no evidence presented in either the DEIS or supplemental reports to suggest that non-native fish species are desirable for any other purpose than providing recreational sport fishing opportunities, which also exist for native fish species. (*See e.g.* Draft Plan at 72, 73 (FW-WFP-DC-11)). In fact, the Forest Service seems to cede all authority over fish populations to the Arizona Game and Fish Department (“AGFD”), stating that “management of nonnative fish falls under the purview of [AGFD]” and the only way the Forest Service can influence the introduction of non-native animals is through “public education and work.” (DEIS at 333). We would like to remind the agency that the Property Clause of the United States Constitution gives Congress “complete power” over federal lands. *Kleppe v. New Mexico*, 426 U.S. 529, 535 (1976). Under the Property Clause, Congress may preempt traditional state trustee and police powers over wild animals, giving the federal government authority to regulate and protect wildlife on federal land. *Id.*; *Wyoming v. United States*, 279 F.3d 1214 (10th Cir. 2002); 43 C.F.R. § 24.3.

The Forest Service should avoid blanket statements implying that the AGFD has sole responsibility for managing wildlife populations. The Forest Service clearly has an obligation regarding wildlife species, especially those listed as threatened or endangered, or considered sensitive by the regional office. The Forest Service also has an obligation to protect forest and watershed resiliency, and native species diversity, adversely impacted by artificially high populations of non-native fish species. Moreover, the Forest Service has repeatedly highlighted the fact that the Coconino “provides a unique opportunity to fish for native [species].” (Draft Plan at 72). There is no stated reason why nonnative fish species must continue to be stocked and maintained in the waters of the Coconino National Forest. The Forest Service must address this issue in its Final Forest Plan and Final EIS because it is nearly impossible to maintain or improve native fish viability in the continued presence of nonnative fish. (Clarkson et al. 2005). Additionally, climate change will likely exacerbate this problem in the future. (Rahel and Olden 2008).

We recommend that the Forest Service incorporate the following guidelines into the Final Forest Plan in order to ensure native fish viability, as required under NFMA and the ESA.

- Where hunting and other wildlife-based recreation opportunities exist, they do not compromise native species populations or habitat.
- Only native species are used for fish stocking for sport fishing
- Non-native fish species are managed in locations and ways that do not pose any threat to native species (delete the final sentence from FW-WFP-DC-11)
- Non-native fish are separated from native fish populations with physical barriers where feasible.

III. MONITORING AND INDICATOR SPECIES

In order to “estimate the effects of each alternative on fish and wildlife populations”, the Forest Service must identify “management indicator species” (“MIS”) within a forest management plan, and monitor their population trends. 36 C.F.R. § 219.19(a). The Forest Service must not only identify relevant vertebrate and invertebrate species for use as MIS, it must also state the reasons for their selection. *Id.* at §219.19(a) (1). NFMA regulations further provide the following characteristics that should be considered when identifying MIS:

In the selection of management indicator species, the following categories shall be represented where appropriate: Endangered and threatened plant and animal species identified on State and Federal lists for the planning area; species with special habitat needs that may be influenced significantly by planned management programs; species commonly hunted, fished, or trapped; non-game species of special interest; and additional plant or animal species selected because population changes are believed to indicate the effects of management activities on other species of selected major biological communities or on water quality. On the basis of available scientific information, the interdisciplinary team shall estimate the effects of changes in vegetation type, timber age classes, community composition, rotation age, and year-long suitability of habitat related to mobility of management indicator species. Where appropriate, measures to mitigate adverse effects shall be prescribed.

Id.

The identification of MIS in the DEIS is insufficient because it fails to identify MIS for most forest ecosystems within the Coconino National Forest. The Current Forest Plan incorporated MIS based on Management Area (“MA”), which covered 20 different habitats found throughout the forest. *See* Current Plan. Each MA had MIS that were specifically identified as being associated with the habitat present in the MA. Conversely, the DEIS uses only three MIS to compare the identified alternatives for the entire forest. Additionally, the Draft Forest Plan only incorporates the same three species as MIS, and only Alternative A (the Current Plan) would include more. (DEIS at 506). The Forest Service provides no rationale for this drastic reduction in the number of MIS for the Coconino.

The Forest Plan needs to identify more than three MIS for the forest. The three species identified in the DEIS (Mexican spotted owl, pronghorn antelope, and pygmy nuthatch) would not provide an adequate picture of problems on the forest, particularly in rapidly changing systems and those facing the greatest

threat from climate change. While the Draft Forest Plan provides MIS for grasslands, ponderosa pine, and mixed conifer ecosystems, it neglects to provide any species as MIS for riparian, aquatic, tundra, or wetland ecosystems. These areas are some of the more degraded and threatened within the Coconino. Indeed, in the DEIS, the Forest Service states that the “majority of threatened and endangered species on the forest are associated with perennial streams and riparian habitat.” (DEIS at 224). This points to the need for more monitoring in these habitats, one aspect of which is the identification of MIS for aquatic and riparian ecosystems.

Overall, the Draft Forest Plan’s identification of MIS is incomplete and inadequate to ensure that ecosystems and species are monitored at a level that will allow the Forest Service to understand trends in population and viability of the majority of species in the Coconino. We support the use of the three species currently identified as MIS, but more species must be added for the MIS to be effective and meet NFMA guidelines. In addition to identifying additional and diverse MIS, the Forest Service should also include management guidelines that call for a survey for suites of species and perform community analyses to detect trends in ecosystems. Modern statistical techniques are capable of evaluating ecosystem health and changes with a high level of sensitivity. For example, community analyses of aquatic or terrestrial macroarthropods, native fish species, or common plants can be used to detect changes in ecosystem condition. (Bain et al. 2000, Bakker 2008, Riggins et al. 2009). This ecosystem-level analysis will allow for better management, planning, and viability estimates in the future.

IV. CLIMATE CHANGE CONCERNS (Draft Plan p. 4)

There are serious concerns amongst climate and forest scientists that in the coming decades the southwestern United States will experience a significant increase in temperatures, an increase in the frequency and severity of droughts, and an altered precipitation pattern to include shorter winters (less precipitation falling as snow, earlier spring runoff) and more frequent and severe flooding events. Such concerns are overlooked in the Draft Forest Plan under the pretense that climate change is too nebulous or complex for the Forest Service to address it directly.

Climate change is also likely to exacerbate the (already hazardous) fire hazard in the region. Prior to western settlement the fire regime of ponderosa pine-dominated forests consisted primarily of frequent, low-intensity surface fires. More than a century of fire exclusion, livestock grazing, and harvesting of old growth ponderosa pine (high grading) has drastically altered this fire regime. Much of the Coconino National Forest is now overly dense and is therefore primed for catastrophic, stand-replacing fire events. Changing climate further adds to this risk, yet there is no attempt in the Draft Forest Plan to incorporate climate mitigation measures (i.e. reducing greenhouse emissions); furthermore, there is not a coherent, forest-wide climate adaptation strategy outlined in this Draft.

Overall, this plan lacks confirmable management objectives linked to monitoring metrics. More simply; there is too much jargon and not enough repeatable data. There is not a sense of urgency in plan implementation that climate change and extreme wildfires from decades of unaware management leadership has created unsustainable forest conditions.

The Forest Service can do more to limit the future impacts of climate change in our region. Protecting forest resiliency, retaining instream water rights, allowing wildlife species migration, and restoring the prehistoric fire regime will all help, as will limiting other stressors on native species. However, we don’t know if we are moving in the right direction without quantifiable monitoring metrics.

We could not find anything in this Plan on forest closure criteria or changes in campfire regulation. When the Forest Service must close forests or ban campfires as an emergency measure, it becomes an expensive proposition (for taxpayers) about which it is hard to educate and inform, and even more difficult to enforce. Instead, during this Forest Plan revision process, the Forest Service has a chance to create a simple policy that will be easy to understand, easy to teach and enforce, and save taxpayer dollars. It will be cheaper and safer to enforce a policy of banning campfires automatically during certain dates than it is to fight out of control fires during our driest season; it will be cheaper and safer than evacuating the forest and nearby residences.

The Forest Service should also consider extending road closures through the dry season without closing the forest. For example, this year the Forest Service could keep the winter road closure in effect until the monsoons begin and stop campfires today. The new weather the region has and with May/June humidity's <10% dictate new management criteria needs to be used, but none is mentioned. It's time to seriously consider these ideas

V. WATERSHEDS

Regarding FW-WtrShd-obj:

Class 2 (functioning at risk) and Class 3 (impaired) 6th code watersheds are trending toward Class 1 in 5 to 7 priority 6th code watersheds⁸ during the 10 years following plan approval. (Draft Plan p. 18)

There is a lack of any reference to management of grazers on the overall watershed plan to address climate change. These are two interrelated impacts that need verifiable management objectives within a 10 year metric. Aside from cattle, USFS managers need to better define elk population numbers in coordination with the AGFD. (Maschinski et al. 2006, Beschta et al. 2013, Yongguang et al. 2013).

VI. SOILS

Regarding FW-Soil-DC #4:

Biological soil crusts are present with limited soil disturbance (<1/3 of area impacted) and functioning on coarse textured and sandy soils.

Biological soil crusts anchor soils, protecting them from erosion, while contributing to plant health and nutrient cycling. They are extremely hard to restore once destroyed. Desired Condition #4 says that it's fine to impact a third of soil crusts. There is no scientific justification for allowing this level of destruction. The Forest Service must do more to protect soil crusts. We recommend this be changed this to a scientifically justifiable level of coverage, and that you supply citations for how you arrived at your decision.

VII. WATER QUALITY, WATER QUANTITY, AND AQUATIC SYSTEMS

WATER QUALITY

Forests are essential to clean water, and the Forest Service has a responsibility to protect water resources within National Forests. "Riparian areas make up less than 1 percent of the forest, yet are one of the most biologically diverse ecosystems." (Draft Plan at 22). Unfortunately, many of the species that rely on these water-based ecosystems face an uncertain future. Ninety-three percent of the native fish species present in

the forest are federally-listed or sensitive. *Id.* All of the native leopard frogs in the forest are either listed or sensitive species, and two of the four most imperiled species on Southwestern Forest Service lands, the Little Colorado spinedace and spinedace fish species, are located within streams on the Coconino. *Id.* All of these species are dependent on water within the Coconino and can be profoundly affected by changes in water quality.

The most troubling component of the Forest Service's analysis of the impact of management decision on water resources within the Coconino National Forest is the statement that "the amount of human and livestock disturbances in riparian areas would be similar among all alternatives and would probably equally impact riparian function." (DEIS at 61). First, this points to the inadequacy of the alternatives analysis, which requires development of alternatives that "[r]igorously explore and objectively evaluate all reasonable alternatives." 40 CFR § 1502.14. Second, this is troubling because the current state of riparian ecosystems on the Coconino is impaired and degraded, and if the Draft Forest Plan will result in the same state as is currently found under management from the Current Forest Plan (Alternative A), there is little hope that fish and wildlife species will be able to recover. Finally, if the Final Forest Plan includes only the desired conditions, objectives, standards, and guidelines presented in the Draft Forest Plan for grazing, off-road vehicle use, and road maintenance, which are inadequate to address historical and continuing use and misuse, it is more than likely that riparian areas will become more degraded, not less, over the time this plan is implemented.

The current condition of riparian areas in the Coconino highlights the problems with past management and the need for increased protection for these areas within the Final Forest Plan. Twenty-three percent of riparian areas are "functioning at-risk" and six percent are "nonfunctional." (DEIS at 67). In its discussion of the Affected Environment for Riparian Forests, the DEIS states that "legacy of improperly located and poorly maintained roads (especially user-created roads)", "dispersed recreation", "legacy off-highway vehicle use", and "legacy grazing" are the threats faced by every impaired or at-risk watershed within the Coconino. (DEIS at 68). However, none of these threats is adequately addressed or mitigated within the Draft Forest Plan.

A. Water Quality Impacts from Roads

In the Draft Forest Plan, the following is stated as a desired condition for Roads and Facilities within the forest: "Temporary roads that support ecosystem restoration activities, fuels management, or other short-term projects are rehabilitated promptly after project completion. Unneeded roads are closed or naturalized to reduce human disturbance to wildlife and to reduce soil erosion. Some closed roads are converted to motorized trails or nonmotorized trails for recreational use." (Draft Plan at 91-92). We recommend changing the final sentence of this desired condition to "Some closed roads are converted to nonmotorized trails for recreational use when such use conforms to habitat and species recovery plans, will not result in degradation of natural resources, and replaces other planned new trail development within the forest." Moreover, all of these conditions should be changed to be standards or guidelines, as their language and prescriptions are better suited for project-level guidance as opposed to general goals.

Sediment pollution is also currently a problem in many of the streams within the Coconino. According to the DEIS, the most important source of non-point pollution in the forest is "sediment generated from roads near drainages." (DEIS at 56). The Forest Service goes on to mention only one management strategy imposed to deal with this problem, which is "implementation of BMPs for all projects that have the potential to increase nonpoint pollution." *Id.* All other strategies cited deal with controlling point source pollution. *Id.* The management strategy of BMP implementation should be a mandatory standard, and apply not just to new infrastructure, but to existing infrastructure and legacy roads, which often have the biggest impact on water quality. Surveys should be done as part of the minimum road system analysis

that assess these on-going impacts and determine the continued utility of roads. This process will inform future maintenance and decommissioning needs in order to address water quality concerns.

The following is listed as a guideline for Roads and Facilities in the Draft Forest Plan: “Stream crossings on permanent roads should be designed to provide the most cost efficient drainage structure consistent with resource protection, including safe passage of native aquatic organisms, and consider infrastructure needs and legal obligations.” (Draft Plan at 93). This guideline is not sufficient to tackle the ongoing problem of sediment pollution from roads. The guideline should be changed to read: “Stream crossing on permanent roads shall be designed to provide the most effective drainage structure designed to ensure resource protection, safe passage of native aquatic organisms, and prevention of pollution and sedimentation of streams.”

B. Water Quality Impacts from Off-Road Vehicle Use

One threat that is common to all riparian areas on the forest, according to the Forest Service, is dispersed recreation. (DEIS at 67). “Dispersed recreation has the potential to disturb riparian vegetation and bank stability.” *Id.* As a result, there is increased soil erosion and sedimentation of streams, both of which damage aquatic species habitat and impair water quality. *Id.* Due to limited enforcement and misuse, the negative impact on water resources from off-road vehicle (“ORV”) use in riparian areas has contributed to increased sedimentation into streams within the Coconino.

In order to combat the negative effects of off-road vehicle use on water quality, the Forest Service should close and decommission any ORV trails that cross streams or are near riparian areas where damage to riparian or aquatic ecosystems is occurring or where off-trail use into streambeds, streambanks, or running water is occurring. We also recommend incorporating the following standards and guidelines from the Current Forest Plan, *see* replacement page 159, as modified, into the standards and guidelines for forest-wide dispersed recreation management within the Draft Forest Plan. (Draft Plan at 106-108 (FW-Rec-Disp-S, FW-Rec-Disp-G)):

- Closely monitor off-road driving. If damage is occurring or becomes imminent, close affected trails or areas to off-road vehicle use.
- Focus media attention on off-road driving damage in these sensitive areas at least annually.

D. Water Quality Impacts from Grazing

Arid lands in the Southwest are particularly susceptible to damage from livestock grazing. (Agouridis et al. 2005). Grazing destroys vegetation, displaces soil, and consumes enormous quantities of water to the detriment of native species and the ecosystems on which they depend. (Belsky et al. 1999; Belsky and Blumenthal 1997). Moreover, climate change and drought are exacerbating these impacts and if grazing remains at current levels, are anticipated to lead to increasing soil erosion, dust generation, water pollution. (Beschta et al. 2013).

The Forest Service has repeatedly identified livestock grazing as a source of water quality degradation and a stressor for aquatic ecosystems. Even with the addition of grazing-specific standards and guidelines in the Current Forest Plan, the Forest Service provides no data or analysis to suggest that these have resulted in an improvement in riparian or aquatic ecosystem function within the Coconino. Conversely, the only decision related to grazing that seems to have had a beneficial impact was the removal of lands along Verde River from grazing permitting that “resulted in improved riparian conditions along the river

during the last 10 years.” (DEIS at 77). Due to the projected decrease in the number of livestock in counties surrounding the Coconino, (USDA 2009 at 14), and the fact that riparian areas account for only one percent of forest lands, it is reasonable for the Forest Service to consider and implement additional management strategies for livestock grazing within the Forest Plan that would decrease the negative effects of this permitted activity on water resources.

The Forest Service notes that due to water rights held for livestock grazing, it is “not feasible to preclude this activity from all wetlands.” (DEIS at 281). However, allowing for a case-by-case exemption due to state issued water rights, the Forest Service can restrict livestock grazing to areas outside of wetlands and riparian areas. We recommend incorporating the following standard creating buffer zones into the Forest Plan sections addressing Livestock Grazing, (Draft Plan at 79-80):

- Livestock grazing shall not be permitted within a quarter of a mile from riparian areas, wetlands, or seasonally present water, except as necessary to allow for continued use of state-issued water rights as allowed under Arizona State law.

The benefits of riparian buffers in grazing management are numerous and include: “stabilization of streambanks, the filtering of runoff, the reduction of peak floods, and the enhancement of habitat by controlling water temperatures and providing shelter to wildlife.” (Agouridis et al. 2005: 598).

Additionally, the current monitoring plan proposed for the Coconino is not sufficient to accurately track and monitor the impacts of grazing on riparian and aquatic ecosystems. Therefore, we recommend the Forest Service incorporate a modified version of the monitoring guidelines for livestock grazing included in the Current Forest Plan, New Page 66-1, into either the forest-wide monitoring strategy. These guidelines should require identification of key forage monitoring areas both inside and outside of riparian areas and wetlands, identification of key monitoring species to assess grazing impacts on riparian and aquatic ecosystems, and a timeline for analysis of impacts both during and after permitted grazing periods.

C. General Water Quality Comments

The Draft Forest Plan establishes a guideline for water quality management that states “[TMDL] recommendations or implementation plans should be considered and implemented as appropriate [as determined by a forest interdisciplinary team].” (Draft Plan at 20). It is unclear from the discussion provided in the Draft Forest Plan and DEIS what circumstances would preclude the application of TMDL recommendations or implementation plans from being used for water quality management in the Coconino. The Forest Service should clarify this direction and identify reasons why the forest team would decide not to implement TMDL guidance.

In the third stated guideline for Water Quality within the Draft Forest Plan, the Forest Service states that “[b]est management practices for **ground disturbing activities** in and outside of streamside management zones should be identified, implemented, and monitored to maintain water quality” (Draft Plan at 20, emphasis added). “Ground disturbing activities” as defined in the Draft Forest Plan, to which that phrase in the previous sentence is linked, covers only “[a]n activity which moves soil to the extent where an archeological site may be impacted.” (DEIS at 196). This definition is too narrow to fully encompass the numerous activities that may disturb soil. The Forest Service needs to provide a broader definition for these activities. We recommend incorporating the following definition for “ground disturbing activities” into the plan: “an activity that has the potential to cause disruption to soil placement or quantity.”

One of the primary water quality problems identified in the Coconino is the presence of *E. coli* within Oak Creek and the Upper Verde River watershed. According to the DEIS, this accounts for 33 miles (15 percent) of streams that are classified as Class 5 (impaired). (DEIS at 5). However, the Draft Forest Plan provides no desired conditions, objectives, standards, or guidelines that address or attempt to respond to this problem. The primary cause of this activity is septic system leaks and recreational swimming. This human caused pollution should therefore be a relatively easy target for the Forest Service to try to minimize and prevent.

To address this issue, we recommend incorporating the following standards or guidelines for water quality into the Final Forest Plan:

- Monitor water quality during periods of high recreational use to determine if State water quality standards for primary contact recreation are being violated.
- Restrict access and human use in areas where water quality is failing to meet State water quality standards until such time as water quality has been restored.

We would also like to see language in the Final Forest Plan that suggests a strategy of working with private landowners to educate them about the dangers to human health, water quality, and fish and wildlife habitat posed by old and leaking septic tank systems. This is an easy to implement management strategy that would begin to address another major contributor to *E. coli* pollution problems and that is also within the ability and scope of the Forest Service's management role in the Coconino.

The Forest Service also fails to mention or discuss the use of reclaimed water within forest boundaries. While specific projects utilizing reclaimed water, as well as their approval, are outside the scope of the Draft Forest Plan and DEIS, their potential impact on water quality within the forest is significant enough to merit discussion within the cumulative effects analysis and also to merit specific standards and guidelines pertaining to reclaimed water use. Given the ongoing drought and significant demand for water within the forest, it is advisable and necessary for the Forest Service to address this and other potential outside water sources in a meaningful way within the Final Forest Plan.

Finally, in the DEIS section addressing Aquatic Systems, there is a paragraph concerning wilderness and wildfire that seems to be misplaced. (DEIS at 56, paragraph 3). We would ask that this passage is either removed or is edited to provide additional clarification as to why it is relevant to the discussion of water quality.

WATER QUANTITY – INSTREAM WATER RIGHTS

It is commendable that the Forest Service has identified guidelines for water quantity that include obtaining instream flow water rights. This is an important and necessary management practice to ensure continued stream flows that support aquatic and riparian ecosystems. However, the management approaches and guidelines presented in the Draft Forest Plan are not sufficiently clear to allow for assessment of how the Forest Service will structure its activities to obtain these rights or for which streams they will seek instream flow rights. The Forest Service can apply for instream water rights from the Arizona Department of Water Resources only through a lengthy process that requires submission of five years of streamflow measurement data after the initial application is accepted. ARS § 45-152.01 (2014). According to the DEIS, the Forest Service already has submitted an application and is tracking streamflow measurements for four streams. (DEIS at 57). Additionally, six streams in the Coconino already have certified water rights held by the Forest Service for instream flows. *Id.* This is excellent

progress, but more substantive guidance on tracking streamflow and identifying streams requiring instream flow rights is needed in the Final Forest Plan. Moreover, the Forest Service has acknowledged that a detailed analysis of water supply on the Coconino has not been done. (DEIS at 58).

Under NFMA regulations, monitoring within forest management plans must provide “[a] quantitative estimate of performance comparing outputs and services with those projected by the forest plan,” as well as “[d]ocumentation of the measured prescriptions and effects,” in order “to determine how well objectives have been met and how closely management standards and guidelines have been applied.” 36 CFR § 219.12(k) (1982). The Draft Forest Plan currently includes the following desired conditions for the Coconino : “Adequate quantity and timing of water flows are maintained”, “Water quantity (base flows) of intermittent and perennial streams are seasonally sustained while peak flows and flood potential occur within the historic range of variability for that stream system, ” and “New and existing instream water rights are maintained and procured to ensure that enough water is guaranteed for habitat needs. . . .” (Draft Plan at 20). Without including monitoring requirements for water flows and supply, there is no way for the Forest Service to meet NFMA requirements to provide quantitative estimates for water quantity to track progress on the water quantity goals and guidelines contained in the forest plan.

To remedy this problem, we recommend incorporating a monitoring question that asks “What are the status and trends for water supply and streamflow within the Coconino National Forest?” This monitoring should take place forest-wide and use the same methods used to track streamflow measurement data for instream water rights applications. This monitoring, which we would suggest completing annually on a seasonal basis, will allow the Forest Service to identify the success or failure of meeting the desired conditions and guidelines for water quantity contained in the Draft Forest Plan. Additionally, such monitoring will give the public a better understanding of water supply trends in the Coconino leading to better management decisions and public awareness about water resources.

VIII. VEGETATION

Definition of “desired conditions” for vegetation communities in the Coconino National Forest is the most consequential in the proposed plan decision because it frames management objectives and, in turn, site-specific management practices. (See Draft Plan at 5 (“Desired conditions are the focus of this plan; management of the Coconino NF’s resources will be directed toward achieving the desired conditions. Desired conditions are the basis for the other plan components and describe the framework for future projects and activities”)). Presumed departures from “reference conditions” identified in the *Ecological Sustainability Report* (USDA 2009) frame desired conditions in the Draft Forest Plan for each vegetation type. (See DEIS at 118-119).

Atmospheric concentrations of greenhouse gases influence global and regional climate systems (Seager and Vecchi 2010). Climate change may significantly affect biodiversity, forests and water availability, though the degree of effect is uncertain. Climate change already influences survival, abundance and distribution of forest vegetation at community and landscape scales in the western United States, including northern Arizona. Elevated temperatures above “pre-settlement” and current baseline levels are “locked in” due to existing atmospheric greenhouse gas concentrations, and may fundamentally alter the geographic distribution and composition of vegetation communities in the Coconino National Forest over the life of the revised forest plan.

One implication of these phenomena is that management activities oriented to restoration of so-called “reference conditions” based on historic ranges of variability may not be appropriate or sustainable. Indeed, climate change, landscape fragmentation and noxious weed invasions preclude forest ecosystems

from realizing settlement-era structural or compositional patterns even with active restoration. Therefore, framing desired conditions and restoration objectives around a “future range of variability” that accounts for inevitable change to disturbance regime (*e.g.*, fire) and vegetation pattern may better promote ecological resilience. Understanding how forests adapt to climate over long timescales (*i.e.*, millennia) can inform management strategies that support resilience to uncertain, though estimable, future conditions.

The range of conditions that might sustain adapted ecological functions and biological diversity, including an active fire regime in ponderosa pine and mixed conifer forests, would constitute appropriate “reference conditions” in the revised forest plan. Reference conditions and, by extension, desired conditions, should account for forest structure, composition and functions at multiple spatial and temporal scales in order to: (1) determine what factors cause ecological degradation; (2) identify what needs to be done to restore forest ecosystems; and (3) inform criteria for measurement of restoration treatment effects.

Restoration is an appropriate management objective for the revised forest plan. Fire exclusion, livestock grazing and logging in ponderosa pine and mixed conifer forests may have altered ecological structure, composition and function such that existing systems are vulnerable to irretrievable loss (Allen et al. 2002). In some cases, ecological restoration necessitates active management of forest structure and fuel loads to compensate for past mistakes. However, effects of past management on historical fire regimes in ponderosa pine and mixed conifer forests are subject to significant scientific uncertainty (*e.g.*, Odion et al. 2014, Williams and Baker 2012). In many cases, passive restoration that includes cessation of activities degrading ecosystems (*e.g.*, fire exclusion and livestock grazing) may be sufficient to accomplish restoration. The revised forest plan should establish criteria for active and passive restoration accounting for uncertainty associated with past management effects and the “future range of variability” of ecological conditions that may become resilient to climate change.

PONDEROSA PINE FORESTS

Ongoing climate change is likely to produce increased frequency, extent, and severity of unplanned fires in ponderosa pine forests. (Williams et al. 2010, Westerling et al. 2006). Desired conditions in the revised forest plan should account for more than the degree of presumed departure from a narrowly-defined historical condition (*i.e.*, “fire regime condition class”). As stated above, reference conditions that existed in the late-19th century are not repeatable or sustainable in a changing climate. Natural fire process, however, is inevitable, and it is centrally important to restoration of ponderosa pine forests. (Allen et al. 2002, Falk 2006). An active fire regime can regulate ecosystem structure and composition to “re-establish a new dynamic equilibrium,” and track climate effects on vegetation and landscape pattern. (Falk 2006: 142).

The Forest Service applies coarse-scale condition classification of vegetation, fuel and disturbance regime to index landscape departure from reference conditions and identify lands at-risk of uncharacteristically severe fires that may impair adapted ecosystem functions (*i.e.*, “fire regime condition class”). The *Ecological Sustainability Report* (USDA 2009) and the DEIS underlying the Draft Forest Plan characterize ponderosa pine forests as “condition class 3,” or severely altered from historical conditions. However, many ponderosa pine forests in the planning area exhibited a mixed-severity fire regime prior to European settlement. (Odion et al. 2014), and fire regime condition class poorly predicts actual wildland fire effects. (Odion and Hanson 2006). Ecologists demand convincing evidence of ecosystem departure from adapted disturbance regimes before ecologically unprecedented restoration interventions are undertaken. (*e.g.*, Gutsell et al. 2001). This is a fundamental point of scientific integrity for plan revision.

Despite widespread concern that fire exclusion, livestock grazing and logging created an unprecedented threat of uncharacteristically severe fires in ponderosa pine forests, mounting evidence suggests that, prior to any significant effects of European settlement and management, fires and forest structure were more variable than what the Forest Service characterizes in the DEIS as its reference condition (Odion et al. 2014, Williams and Baker 2012). The “traditional” reference condition of low-severity fire regimes is inaccurate for many ponderosa pine forests in northern Arizona. Instead, mixed-severity fire, including ecologically significant amounts of weather-driven, high-severity fire, characterized the landscape disturbance regime prior to European settlement. In other words, diverse forests in different stages of succession, with a high proportion in relatively young stages, occurred prior to fire exclusion. Over the past century, successional diversity created by fire decreased as suppression practices grew in efficiency and extent. Odion and others (2014) suggest that management goals for ponderosa pine forest should include successional diversity created by mixed-severity fire effects to support characteristic biodiversity, whereas attempts to “restore” forests to uniformly open structure and low-severity fire conditions may not align with *actual* historical conditions.

Williams and Baker (2012) reconstructed fire regime across 927,000 hectares in four western landscapes, including the Coconino National Forest, using a method based on land surveys from *circa* 1880. Those reconstructions showed that ponderosa pine forests were structurally variable at the time when the Forest Service presumes deviation from the “reference condition” to have started. In particular, they contained 20 to >1,000 trees/ha, often with dense shrubs and small trees occupying the understory layers. “Park-like” stands of large conifers that were maintained by low-severity fire predominated only in parts of the forests studied. Although large areas were fairly homogeneous, on the Mogollon Plateau only 62 percent of the landscape fit the “low-severity fire paradigm.” (Williams and Baker 2012: 7). Those data suggest that more heterogeneous management approaches than presented in the Draft Forest Plan are warranted to meet the need for change.

Common management practices today include extensive, rather uniform reduction in tree density removal of understory shrubs and small trees, and other fuel modifications to lower fire severity. Our reconstructions show that these common practices, if widespread, will move most dry forests outside their historical range of variability, rather than restore them, probably with negative consequences for biological diversity.

(Williams and Baker 2012: 9). Indeed, historic fires prior to and during the reference period of European settlement varied in severity, including 15-to-65 percent high-severity fire effects to vegetation. “A set of laws, policies and initiatives that aim to uniformly reduce fuels and fire severity is likely to move many of these forests outside their historical range of variability with adverse effects on biological diversity. Macroscale survey-based reconstructions and palaeoecological studies reveal that *higher*-severity fires were and are a part of the normal dynamics of dry forests.” (Williams and Baker 2012: 1).

Precaution should guide decision-making about ecological restoration of systems in which sources of degradation are poorly understood. The precautionary principle counsels against management approaches than cannot be reversed later if they turn out to be counterproductive. Restoration should emphasize active management in areas that are most likely to benefit from intervention. (Brown et al. 2004). Need for restoration depends on ecological scale, disturbance history, vegetation characteristics and current conditions.

The vast majority of old growth forest in the ponderosa pine formation of the southwestern United States, including the Coconino National Forest, has been removed by commercial timber harvesting operations in the past century. The ecological significance of old-growth forests and large trees is amply documented. A distinguishing feature of ecologically resilient conifer forests is a prevalence of large trees that possess autecological characteristics (*e.g.*, thick bark, tall canopies) that predispose them to resist heat injury from

fire. Forests dominated by large trees also feature structural characteristics in the form of large down logs that tend to inhibit intense fire behavior. Large down trees can slow sub-canopy horizontal wind movement and fire spread, and their tendency to retain moisture can deprive fire of heat energy. Removal of large woody structure can diminish ecosystem resilience to fire. (Brown et al. 2004).

The Forest Service is in possession of the collaboratively-designed Old Growth Protection and Large Tree Retention Strategy (“Strategy”) developed by public stakeholders for implementation in forest treatment projects associated with the Four Forest Restoration Initiative. The Strategy is an “agreement-based outcome and product” developed in recognition that “translation of such agreement greatly enhances chances for success, and reduces the risk of conflict.” Given the enormous commitment of stakeholder time and energy to collaborative development of the Strategy, as well as its clear relevance and applicability to the project area, it is reasonable to study, develop and describe in detail management approaches based on the entire Strategy as it was originally designed. It meets the need for change by actively managing hazardous fuels and forest structure, even to the extent that it specifically allows for removal of large trees in limited circumstances, as distinct from a broad “diameter cap.” More, the Strategy avoids significant cumulative impacts that may result from excessive and unnecessary removal of large, fire-resistant trees, which are deficient in the Coconino National Forest. Finally, it mitigates adverse effects to threatened and sensitive wildlife species that require closed canopy forest habitat for essential life behaviors.

SPRUCE/FIR FORESTS

Some areas of the Coconino National Forest, particularly those located at higher elevations such as the San Francisco Peaks, remain little disturbed by human management and closely resemble conditions in which indigenous life evolved. Places retaining high degrees of ecological integrity generally host few if any roads. Those places function as reservoirs of biodiversity where passive restoration (*i.e.*, halting or foregoing activities that may cause ecological damage) and active use of wildland fire for resource benefits may offer the most ecologically sensible management approaches over time.

ASPEN

Aspen is not dealt with as a distinct vegetation type, but instead is lumped with other PVNTs in which they occur. This is surprising, given the importance of aspen, its precipitous decline in the Coconino National Forest, and the amount of attention devoted to protection and restoration of aspen by both the Forest Service and the public. For example, the Forest Service and volunteer groups have invested resources in constructing and maintaining elk-proof fencing around aspen plot exclosures, and the Forest Service has indicated that it has a goal to “Achieve 1,000 acres of aspen and maple restoration during the 10 years following plan approval.” (Draft Plan p. 33).

It is true that aspen occurs within a variety of other systems, but this deciduous tree is usually managed as a unique component and it definitely has unique threats. Aspen are threatened by elk grazing, drought, disease, and insects; over 90% of the remaining aspen on the Coconino National Forest occur in an area crossed by 13 miles of reopened roads. (USFS 2001, USFS 2013). Further, current management via fencing has the Forest Service treating it as a vegetation type that is meant to remain in a static location over time, even though that is not how this tree evolved. Historically, fire and localized disturbance would have created open patches where aspen clones would have sprouted from extensive root systems. The Forest Service should treat it as its own vegetation type and create standards, guidelines, and management approaches to restore aspen abundance to its historical range of variability.

The Forest Service should limit the unnecessary construction of artificial waters and create a guideline that artificial water sources be kept at a distance from aspen patches to protect the trees from elk and cattle. The Forest Service should also discuss fire and wolf reintroductions as tools to restore aspen populations. Aspen should be allowed to self-thin, and all ages and successional stages should be encouraged.

ALPINE TUNDRA (Draft Plan pp. 70-71)

The Draft Forest Plan mentions that the alpine tundra is extremely rare, covering only 941 acres, and ecologically and culturally important: “the only area containing bristlecone pines located on National Forest System lands in Arizona; it is also one of the southernmost extents of Alpine Tundra in the continental U.S.”; “it supports a federally threatened plant – San Francisco Peaks ragwort – that is only found here, as well as other endemic plant species”; “probably the most significant cultural area on the Coconino NF.” (Draft Plan, p. 70) And, it is threatened by the Arizona Snowbowl ski area: “**Major human disturbances are developed recreation from the ski area....**” (Draft Plan, p. 70). Yet, here it does not address ways to protect this area from this listed threat. The Forest Service should have a significantly more detailed plan on how you intend to adequately address and remedy this.

Desired Condition 2 states

The ecosystem diversity of Alpine Tundra is maintained. In addition, it maintains the ecological attributes and processes that provide habitat for native biota, panoramic vistas, and/or solitude. The mountain maintains attributes that provide historic and cultural values. Alpine Tundra displays a diverse composition of native species and vegetation communities (including boulder fields, talus slopes, and meadows). Invasive species are absent. (Draft Plan, p. 71)

Yet, by allowing the use of reclaimed wastewater snow, the Forest Service is going against its own directive to “provide historic and cultural values” (Draft Plan, p. 71). It is also putting at risk the habitat of the Peaks Ragwort, which it says it seeks to maintain and protect from human caused impacts. The Forest Service should provide more direction for protecting the ragwort and also describe what it intends to do about the ragwort coming into contact with wastewater snow and the resulting extra nitrogen that may get into the soil and its possible effects on this threatened plant. Desired conditions are defined as the goals of what the Forest Service believes it should be moving towards. How does allowing the special use permit for Arizona Snowbowl move the alpine tundra or the adjacent Kachina Peaks Wilderness Area closer to the desired conditions? The Forest Service must explain in the Forest Plan how it will move toward all Desired Conditions for alpine tundra.

The Draft Forest Plan does not mention extra nitrogen in the soil that can come from the use of reclaimed water. The use of reclaimed water in this sensitive area doesn’t fit into the Desired Conditions of “ecologically responsible forest activities” and where “Habitat conditions contribute to the survival and recovery of listed species” (Draft Plan Desired Conditions #1 and 2 for Wildlife, Fish, and Plants, p. 72-73).

The Forest Service should add to its “Risk Factors” for Alpine Tundra, DEIS v2 p. 485, avalanche abatement. “Avalanche abatement reduces slope stability and may result in loss of plants from slides.” (DEIS v2 p. 491)

Regarding the federally listed threatened San Francisco Peaks Ragwort:

“None of the alternatives would vary in effects for the 40 acres of this PNVT within the Snowbowl Ski Area because none would lead to changes in the operating permit for the site.” (DEIS v2 p. 486)

“All alternatives lack treatment objectives, thus forest plan objectives would not result in additional acres of improvements to species habitats or changes to the number of acres of projected habitat for any species.” (DEIS v2 p. 486)

The Forest Service admits that the Draft Forest Plan does not adequately address the threats to the federally threatened species, yet none of the alternatives would look at changes to the operating permit for the site. The Forest Plan should create a pathway by which special use permits can be changed in the future, for example, if federally threatened and endangered species issues arise. In this case, “Avalanche abatement, however, would **only** affect approximately 12 percent of the species’ habitat” (DEIS v2 p. 491, emphasis added). Twelve percent of the habitat for a threatened species can make a huge difference in its survival potential, especially when its entire habitat is limited to about 325 acres, and that acreage is surrounded by fire-prone ecosystems (DEIS v2, p. 491). The Forest Service could increase protection on 12 percent of the species’ habitat by changing its policy toward avalanche abatement and updating the Arizona Snowbowl’s special use permit.

The Forest Service should create objectives for the alpine tundra habitat type. After all, it supports one Federally listed threatened, three Forest Service sensitive species, and ten other Forest planning species, as well as “one percent of the plants known to be used by tribes that traditionally use the forest” (DEIS v2 pp. 485-6, Draft Plan p. 71).

GRASSLAND PNVTs and PINYON-JUNIPER TYPES

Grasslands contain one federally listed endangered species, the Black-footed ferret, eighteen Forest Service sensitive species, and sixteen other forest planning species. Grasslands are trending away from reference conditions, primarily due to fire suppression to protect adjacent development. Restoration of fire to these systems should be the primary way to restore their natural composition, structure, and function.

Piñon-juniper types contain sixty-three percent of the plants known to be traditionally used by tribes. An estimated 1,000 species are associated with piñon pines in the southwest. (Whitham et al. 2003).

When tree removal is a priority, fire should be the preferred method of treatment; when mechanical measures are necessary, the Forest Service should encourage the removal of juniper for firewood, as part of a controlled cutting program. Juniper removal will improve habitat for pronghorn (pronghorn prefer areas with shrubs under 30 inches high) and increase grassland plant diversity. Cutting of juniper as firewood is not discussed as a vegetation treatment in DEIS Plan Volume 1, pp. 262-269. Mechanical treatment and fire are the only methods mentioned. However, firewood sales ARE recommended for pronghorn habitat improvement in DEIS Volume 1, Chapter 3, Alternative A, p.276. Please reiterate that policy when discussing grassland restoration.

Because controlled burns are dependent on weather, resources, times of day and season of the year, only so much land can be treated by fire in a given year. Hand-removal methods may be needed in order to keep up with restoration goals. When this is necessary, encouraging firewood cutting should be the preferred method of removal.

Because an estimated 1,000 species are associated with piñon pines in the southwest (Whitham et al. 2003), and piñon pines hold cultural significance (i.e., pine nut gathering), piñon pines should not be cut. Slow-growing piñons are extremely drought sensitive, unlike their juniper counterparts. (Mueller et al. 2005, Breshears et al. 2009). Therefore, even though the two trees often coexist, their management should

vary in order to maintain biodiversity. After the massive die-offs of piñon pine that have occurred over the last decade, we should not gratuitously remove them from the landscape. Please add guidelines to all PVNTs containing piñon pines saying that piñon pine will not be intentionally removed from the landscape when habitat restoration is a project goal.

Livestock grazing should be removed from areas where juniper encroachment is problematic.

GRASSLANDS - Great Basin and Montane Subalpine

Pronghorn are a management indicator species. The Forest Service should consider the keystone species Gunnison's prairie dogs, as a management indicator species also (Draft Plan p. 41).

The Summary of Species Effects in DEIS v1 p. 280 tells us:

“However, alternative B lacks guidance that alternative A has, such as more comprehensive guidance for grassland habitats where management emphasis is provided for pronghorn, addressing vegetation management, range management, land acquisition, off-road driving, road construction, and other activities in standards and guidelines. Within alternative A's MA 27, objectives, standards, and guidelines are particularly strong for pronghorn in Semidesert Grassland, which is the grassland habitat in poorest condition. Alternative B's desired conditions for the Anderson Mesa Management Area call for stable pronghorn populations, but because populations are currently stable, this does not emphasize improving trends. Objectives for grassland habitats indicate that little active habitat improvement or restoration will be done in those habitats. A small proportion of Great Basin Grasslands would be designated as wilderness, providing some extra protections.” (DEIS v1 p. 280)

In 2004, the Coconino National Forest lost a lawsuit filed by the Arizona Wildlife Federation for not enforcing the previous Forest Plan rules and failing to protect pronghorn. (See press release at <http://www.azwildlife.org/ht/d/sp/a/GetDocumentAction/i/60627>). Now, 10 years later, the Forest Service is saying that pronghorn populations are stable, so it will decrease the level of protection that the Forest Plan will provide. (DEIS v1 p. 280). This is NOT acceptable. If applying the requirements set forth by the previous Forest Plan truly brought about stability in the pronghorn population, then the new Forest Plan should carry over the same requirements. Knowing that pronghorn populations have fluctuated over time, we don't understand why the Forest Service would create a Forest Plan that would provide anything less than the strictest protection for pronghorn. Please add back the protective language from the last Forest Plan.

The Forest Service continues with the following:

“Alternatives B, C, and D are less prescriptive than alternative A, as a result, they should allow management to be more responsive to site-specific needs and changing conditions over time. This will better allow the forest to practice adaptive management and to more effectively cope with a changing climate.” (DEIS v1 p. 280)

However, opting for Adaptive Management also permits the Forest Service to choose inaction due to budget, grazing interests, etc. “Adaptive Management” is a good concept, but the term is somewhat open-ended, like “Multiple-Use”. Proper Adaptive Management requires specific goals, standards, guidelines, quantifiable metrics, and triggers for change. If the Forest Service truly wishes to practice Adaptive Management techniques, then it should create a strong Monitoring and Adaptive Management Plan, with strict Standards for accountability.

The prairie dog colony at Bonito Park (along 545 Road) should be viewable by visitors to Sunset Crater National Monument. Pronghorn move between Bonito Park in the spring and the Deadman Wash Grasslands near Wupatki National Monument at other times. Manage Bonito Park and Deadman Wash Grasslands in conjunction with NPS.

DEIS v1 p.269, minor edit, 4th paragraph down, last sentence: There are about between ... (delete the "about"). MIXED CONIFER TYPES

Mixed conifer forest types in northern Arizona exhibit a transitional gradient among ponderosa pine and spruce-fir types. In addition to their inherently diverse species composition and structure, mixed conifer forests are naturally characterized by an intermediate fire regime including low-severity surface fires and stand-replacing fires that maintain a patchy mosaic of forest structure over broad scales (*i.e.*, "Fire Regime 3"). (Odion et al. 2014, Williams and Baker 2012). According to Fulé and others (2003: 483-84), historical fire regimes in mixed conifer forest varied by slope and aspect at very small spatial scales:

Managers may wish to consider prescribed burning and fuel reduction treatments on [south] and [west] aspects, as well as extensive use of wildland fires managed for resource benefits, if they choose to try to restore fuel conditions similar to historic conditions... The transition zone studied here, changing from surface to stand-replacing fires, may be the most complex case for fire regime reconstruction. Second, even if we were fully able to reconstruct the details of every fire from 1700 to 1879, the pattern of severe burning did not appear to be stable over the spatial and temporal scale of the study. These considerations imply that managers may be best advised to view the historical condition in high-elevation southwestern forests as a relatively general guide to reference conditions, in contrast to the more specific and temporally stable reference data available for lower-elevation ponderosa pine forests.

Elevated densities of small, shade-tolerant, and fire-intolerant tree species is an artifact of fire suppression in some dry mixed conifer forests that creates more homogenous forest structure and can promote high-intensity fire behavior in extreme weather conditions (Fulé et al. 2003). Fuel treatments in mixed conifer forest should be limited to the driest sites (*i.e.*, south and west aspects) where fire suppression is most likely to have caused long-term change in forest composition and structure, consistent with the principles described above. Such treatments should focus on reducing the density of small stems (*i.e.*, less than 16-inches dbh) of shade-tolerant species that comprise "ladder fuels," and emphasize increasing canopy base height at stand scales. The objective of such treatments should be to disrupt vertical sub-canopy fuel continuity so that surface fires are less likely to initiate crown fires. More aggressive treatments in mixed conifer forest, particularly at relatively mesic locations (*e.g.*, north aspects and riparian zones – wet mixed conifer forest), are almost certain to degrade critical habitat of threatened Mexican spotted owl with uncertain benefits to the conservation and recovery of the species. (USDI 1995, USDI 2012).

RIPARIAN FOREST TYPES

Please change FW-Rip-All-G Guideline #3 to say:

LIVESTOCK USE SHOULD NOT OCCUR WITHIN RIPARIAN AREAS. LIVESTOCK WASTE SHOULD NOT BE STORED OR DISPOSED OF WITHIN RIPARIAN AREAS. Within riparian areas, an adequate height of herbaceous, water-loving vegetation should be maintained to protect streambanks. This guideline would not apply to structural developments such as gaps, pipelines, or other infrastructure used to minimize impacts to riparian areas at a larger scale.

IX. Timber Suitability

Under the NFMA, forest management plans must assure suitability of lands where timber production is allowed. 16 U.S.C. § 1604(e). Timber suitability determinations “shall ... be embodied in appropriate written material, including maps and other descriptive documents, reflecting proposed and possible actions, including the planned timber sale program and the proportion of probable methods of timber harvest within the unit necessary to fulfill the plan.” *Id.* § 1604(f) (2). Forest Service responsibility to plan for multiple uses necessarily means that not all lands are available for all purposes. *See id.* § 1604(g) (3) (E) (Forest Service must ensure that timber will be harvested from national forest lands only where, for example, “(i) soil, slope, or other watershed conditions will not be irreversibly damaged...”). In developing forest plans, the Forest Service also “shall identify lands within the management area which are not suited for timber production, considering physical, economic, and other pertinent factors to the extent feasible, as determined by the Secretary, and shall assure that, except for salvage sales or sales necessitated to protect other multiple-use values, no timber harvesting shall occur on such lands for a period of 10 years.” *Id.* § 1604(k). Furthermore, the implementing regulations require that timber suitability designations in forest plans must apply cost-benefit analysis and “stratify” lands by allowable intensity of timber management. 36 C.F.R. § 219.14(b) (1982).

Historically, the Forest Service has met this requirement by dividing the Coconino National Forest into discrete land use zones, or “management areas,” each of which set forth standards and guidelines governing site-specific multiple use activities. This approach accords with the Forest Service's statutory responsibility under NFMA to “provide for multiple use and sustained yield of the products and services of units of the National Forest System.” 16 U.S.C. § 1604(e). The agency also historically engaged in cost-benefit analysis of stratified timber management strategies to assure the largest excess of discounted benefits less discounted costs.

In addition to determining suitability for timber production on portions of the national forest, the Forest Service also must review its prior classification of lands as unsuitable for timber production. *See* 16 U.S.C. § 1604(k); 36 C.F.R. § 219.14(b) (1982). To inform analysis of timber suitability, we ask the Forest Service to consider and analyze the following criteria for designating lands as unsuitable for timber production:

- High or severe soil erosion hazard identified by Terrestrial Ecosystem Survey.
- Slopes steeper than 20 percent.
- Lands within one site-potential tree height of perennial or intermittent streams or wetlands (*e.g.*, generally 100-150 feet on either side of a stream bank in conifer forest vegetation types).
- Contiguous areas larger than 1,000 acres without roads in all vegetation types.
- Occupied and/or critical habitat of threatened or endangered species or candidate species proposed for listing.
- Designated conservation areas for sensitive or management indicator species.
- Occupied locations of endemic species with ranges limited to the national forest.
- Lands impacted by high-severity fire effects to vegetation or soil.

Regarding the last criterion above, logging and planting trees on sites impacted by wildland fire poses a different benefit-to-cost analysis from management of unburned forests. Long-term losses of soil productivity resulting from synergistic impacts of fire and mechanical disturbances (*e.g.*, “salvage logging”) must be considered and analyzed in the timber suitability determination. (Beschta et al. 2004). Severe fire effects on suitable timberlands are reasonably foreseeable. The timber suitability designation in the revised forest plan should include a caveat that forest lands affected by severe fire effects to vegetation or soil will be managed for natural recovery rather than for economic production.

X. TRIBAL RELATIONS AND USES

As of March 10th in this comment period, we are not aware that the Forest Service has had any informational presentations on the reservations. (Draft Plan p.89). Although “The forest regularly consults with 13 American Indian tribes,” (Draft Plan p. 89), official consultation with tribal government and agency officials is not the same as providing an open forum for tribal members to learn and participate. The Forest Service should make an effort to inform, and to understand the desires and concerns of, this important population of Forest users.

The Forest Service should elaborate on how it plans to permanently protect the 2,700 sites that have been determined to meet the criteria of eligibility for the National Register of Historic Places on the Forest. (Draft Plan, p. 85).

There seems to be little evidence that the Forest Service is aiming toward the Desired Conditions and Management Approaches on pp. 89-90. There is nothing here that addresses what happens when the tribes disagree with the Forest Service. It seems the only remedies listed are consultation and MOU’s. The Forest Service should provide and allow the tribes the opportunity to disagree, create a specific management approach for resolving disagreements, and actually listen to the tribes when they do say no. (Draft Plan p. 89-90).

The Forest Service should add Standards and Guidelines for *how* it will train Forest Service employees and Special Use Permittees about interactions with tribal members engaging in traditional land uses, in a manner that fosters mutual trust and respect. Too often we have received reports of people being treated in ways that exacerbate tensions. The Forest Service has a responsibility to provide access to resources it holds in trust. (Draft plan, pp. 90-91).

Management Approaches for outreach to tribes could include: holding meetings on reservations to reach those for whom travel is difficult; providing native translators; recording oral statements for those who can’t write or don’t speak English; proactive advertising for tribal participation opportunities through radio/newspaper ads and public service announcements; hanging flyers about projects.

No overnight camping rules should contain language to address traditional cultural uses. (DEIS v2 p. 664).

In the Affected Environment section of the DEIS (Volume 2), the Forest Service reports on its history of consulting with, yet ignoring the requests of, the regional tribes who honor the “San Francisco Peaks, one of the most revered traditional cultural properties in the Southwest” (DEIS v2, p. 667):

The Coconino NF has been working with and consulting tribes in northern Arizona for many years before it became a requirement under law, policy, and Executive Order. The lands that presently constitute the forest have many sites, areas, and features that are considered to be ancestral or of traditional and ceremonial importance to a number of southwestern tribes. The forest archaeologist and tribal relations specialist have worked closely with these tribes to identify their traditional cultural properties, which occur throughout the entire forest, and have taken care to ensure they have not been impacted by project activities, **other than those associated with the Arizona Snowbowl. The San Francisco Peaks, one of the most revered traditional cultural properties in the Southwest, is the location of the Arizona Snowbowl, and has been the subject of consultation with the Hopi Tribe since the 1970s.**

The forest routinely consults 13 tribes, (the Pueblo of Acoma, Ft. McDowell Yavapai Nation,

Hualapai Tribe, Havasupai Tribe, Hopi Tribe, Navajo Nation, San Carlos Apache Tribe, San Juan Southern Paiute Tribe, Tonto Apache Tribe, White Mountain Apache Tribe, Yavapai-Apache Nation, Yavapai-Prescott Indian Tribe, and Pueblo of Zuni), 7 Navajo Chapters (Cameron, Coalmine Canyon, Dilcon, Gap-Bodaway, Leupp, Tolani Lake, and Tuba City Chapters), and the Dine' Medicine Man's Association.

To date, tribal concerns have involved access to areas to perform ceremonies and collect plants, firewood, and other forest products for traditional cultural purposes. Tribes have appreciated the "shared stewardship" philosophy the forest used in the past for project consultations and management activities. Tribes support the forest's efforts at site protection and for active prosecution of Archaeological Resources Protection Act cases.

Tribes, however, have also voiced the desire for more transparency in knowing how their input is used in the forest's decision-making process and want greater involvement of forest staff and line officers in face-to-face consultations. Some complaints have been made about inconsistent approaches and procedures between different forests and that **too often forest personnel leave before tribes know who to contact if they have needs or concerns.**

Tribal relations have further deteriorated since the 2005 "Record of Decision for the Arizona Snowbowl Facilities Improvement," which approved the use of reclaimed water at the ski area that lies within the San Francisco Peaks Traditional Cultural Place. Since then, numerous statements have been made by tribes that the forest holds no credibility with the tribes, and tribes lack faith in the forest's stated desire to support tribal needs and values. Many tribes feel their trust in the forest has been broken because of the Snowbowl decision. (DEIS v2, pp. 667-668, emphasis added)

And, reported under Cumulative Effects:

"... arguably the largest strain on tribal relations between the Coconino NF and tribes it consults with has been the decision by the forest related to the Arizona Snowbowl, as mentioned earlier... While plan alternatives would provide protection of sacred sites from other types of forest uses in a primarily strategic manner, they would not necessarily prohibit site-specific decisions that tribes could have objections to." (DEIS v2, p. 669)

The Forest Service states right here that their own rules and regulations have not been followed with regard to the Arizona Snowbowl. It also acknowledges that the San Francisco Peaks is one of the most revered traditional cultural properties in the southwest, but does not mention any way to remedy the situation, which has violated the Forest Service's own policy. The Forest Service should listen to the tribes' requests and take their input seriously, and develop policy on Arizona Snowbowl that is consistent with its other policies, and plan to be sensitive to cultural needs in future commercial and special use permitting. The Forest Service should create a Plan for how it will deal with future disagreements. The Forest Service should not create policies 'except for Arizona Snowbowl.' It should not be arbitrary in its decision making. The Forest Service should be consistent in its consideration of tribal input, and put consistent language into the Forest Plan.

The Forest Service should create an appendix listing lawsuits filed and results of those cases, so the public can see where Forest Service obligations have been defined in court.

The Forest Service should tell us how it will apply the document *USDA Policy and Procedures Review and Recommendations: Indian Sacred Sites* (2012, available at

<http://www.fs.fed.us/spf/tribalrelations/documents/sacredsites/SacredSitesFinalReportDec2012.pdf>). It does not appear to be referenced under any of the alternatives.

The Forest Service should include in the Plan guidance for how it will address issues with tribal input and constantly changing personnel. (DEIS v2 p. 667).

The Forest Service should explain how simple consultation can improve relations. Consultation does not seem to offer the tribes the ability to simply say “no!” Again, the Forest Service must provide a way for tribes to actually have a voice and their objections seriously considered. Perhaps tribes and tribal members could be given the opportunity to vote on these issues that come up. The tribes have been in existence longer than the Forest Service. There must be a better way to acknowledge their opinions and advice. (DEIS v2 pp. 667-9).

The Forest Service tells us, “While plan alternatives would provide protection of sacred sites from other types of forest uses in a primarily strategic manner, they would not necessarily prohibit site-specific decisions that tribes could have objections to.” (DEIS v2, pp. 669) Why is this? If the Forest Service is aware that this is a problem, they must create standards and guidelines for how to remedy this situation.

Please explain how the following policy will protect gatherers in cases where botanical product locations must be kept secret from outsiders:

FW-FProd-DC-4: Collection of forest botanical products is authorized by permit and only when information is available to ensure the product will persist on the forest. Collection of plant species recognized as rare, limited in distribution, threatened, endangered, or sensitive is discouraged except for scientific and cultural purposes. Traditional tribal uses for forest botanical products, such as the collection of medicinal plants, wild plant foods, basketry materials, and firewood, are facilitated. Boughs and herbaceous plant parts used for American Indian traditional and ceremonial purposes are available under conditions and procedures that minimize restrictions and are consistent with laws, regulations, and agreements with tribes. (DEIS v3, p. 851)

XI. AIR QUALITY

Air (Draft Plan p.16)

The 2012 planning rules address air quality, requiring that standards or guidelines be adopted to "maintain or restore" air quality. *See* 36 C.F.R. § 219.8(a)(2)(i).

The 1982 rule was explicit about the agency’s obligations regarding air quality. Specifically, the rule required each regional guide to contain “specific standards and guidelines” for “[i]dentifying in forest plans significant current and potential air pollution emissions from management activities and from other sources in and around the forest planning area and identifying measures needed to coordinate air quality control with appropriate air quality regulation agencies.” 36 C.F.R. § 219.9(a)(5)(v). Importantly, the 1982 rule required that management prescriptions “[b]e consistent with maintaining air quality at a level that is adequate for the protection and use of National Forest System resources and that meets or exceeds applicable Federal, State and/or local standards or regulations.” 36 C.F.R. § 219.27(a)(12).

In other words, the 1982 rule was clear that the Forest Service, as manager of millions of acres of land and countless pollutant emitting activities, was obligated to independently assure compliance with

Federal, State, and local air quality standards. In other words, it was not enough to simply assert that an activity or use would comply with relevant Federal, State, and/or local air quality standards or regulations. Rather the Agency was duty-bound to affirmatively demonstrate that its management actions were indeed consistent with maintaining air quality at levels meeting or exceeding such standards or regulations.

This affirmative duty is well-founded in NFMA, as well as a number of the Forest Service's other overarching environmental mandates. Notably, as part of its renewable resource program duties, NFMA requires the Forest Service to "recognize the fundamental need to ***protect and where appropriate, improve the quality of...air resources.***" 16 U.S.C. § 1602(5)(C) (emphasis added). The Agency is further obligated to ensure that this goal, among the other goals of the renewable resource program, is achieved through land management plans. *See* 16 U.S.C. § 1604(g)(3).

The Forest Service's duty to safeguard air quality is especially clear with regards to wilderness areas. The Wilderness Act of 1964 requires that Congressionally designated wilderness areas be managed "in such manner as will leave them unimpaired for future use as wilderness, and so as to provide for the protection of these areas [and] the preservation of their wilderness character[.]" 16 U.S.C. § 1131(a). This duty clearly extends to air pollution, which can oftentimes impair the wilderness character of wilderness areas through haze or by causing other forms of environmental degradation. Indeed, the Forest Service cites the Wilderness Act as providing authority to protect air quality in all wilderness areas managed by the Agency. *See Forest Service Air Management Responsibilities*, <http://www.fs.fed.us/air/respon.htm> (last accessed April 28, 2011).

For wilderness areas identified as Class I under the Clean Air Act, the duty to protect air quality is even more explicit. Class I areas include all wilderness areas designated prior to 1977 and within the National Forest System, encompass dozens of wilderness lands in 20 states. *See* 40 C.F.R. §§ 81.401, *et seq.* (list of mandatory Class I areas by state). With regards to protecting air quality in these areas, the Clean Air Act imposes upon the Forest Service an "affirmative responsibility" to protect all air quality values, including visibility, within these Class I areas. 42 U.S.C. § 7475(d)(2)(B). This "affirmative responsibility" includes, but is not limited to, ensuring that proposed major emitting facilities do not adversely impact air quality values in Class I areas. In other words, while the Forest Service must generally protect air quality, including in wilderness areas, it must make a proactive effort to do so in all Class I areas under its management authority.

To this end, it is critical that all land management plans clearly articulate and establish air quality standards. The Forest Service itself seems to have clearly recognized this in its past planning. Indeed, not only does the 1982 planning rule clearly establish air quality protection as a mandatory duty, but land management plans developed under this rule also require some degree of compliance with air quality standards. For example:

- The 2004 Medicine Bow National Forest land management plan sets forth a standard that requires the Forest Service to "Conduct all land management activities to comply with all applicable federal, state, and local air quality standards and regulations[.]" *Medicine Bow National Forest Revised Land and Resource Management Plan* at 1-25, available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5163437.pdf (last accessed April 28, 2011).
- In addition to requiring compliance with all applicable federal, state, and local air quality standard and regulations, the 2002 Thunder Basin National Grassland land management plan also sets forth a standard that requires the Forest Service to, "Ensures emissions from projects on the Grassland and forest management activities area within Class I or Class II ranges." *Thunder*

Basin National Grassland Revised Land and Resource Management Plan at 1-9, available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5166417.pdf (last accessed April 28, 2011). The reference to “Class I or Class II ranges” refers to air quality standards called Prevention of Significant Deterioration (“PSD”) increments, which are set forth at 40 C.F.R. § 52.21(c). See *id.* at A-1, available at http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5166421.pdf (last accessed April 28, 2011).

- The 1985 Tonto National Forest land management plan sets a goal of meeting “minimum air...quality standards” and expressly requires that “[m]anagement activities will be planned so that air quality will [be] equal to or better than that required by applicable federal, State, and local standards or regulations.” *Tonto National Forest Land and Resource Management Plan* at 50, available at <http://www.fs.fed.us/r3/tonto/projects/forest-plan-documents/chapter-4.pdf>.
- The 1986 Carson National Forest land management plan provides explicit direction with regards to the protection of Class I areas, stating that the Forest Service will “In the Class I air quality areas in the Wheeler Peak Wilderness maintain high quality visual conditions.” *Carson National Forest Land and Resource Management Plan* at 17. Wilderness 1, available at http://www.fs.fed.us/r3/carson/plans/forest_plan/fp_d_management_area_17.pdf (last accessed April 28, 2011). The land management plan also requires the Forest Service to plan its management activities “so that air quality will be equal to or better than that required by the applicable Federal, State and/or local standards or regulations.” *Id.* at Air-1, available at http://www.fs.fed.us/r3/carson/plans/forest_plan/fp_c_air.pdf (last accessed April 28, 2011).

These are but a handful of overwhelming examples where the Forest Service has clearly recognized its duty to independently safeguard air quality and sought to fulfill this duty through its land planning requirements.

The Draft Land and Resource Management Plan for the Coconino and DEIS do not include any standards for air quality just two guidelines. (Draft Plan, p. 16). Further the Draft Land and Resource Management Plan for the Coconino and DEIS ignore air quality impact from several management activities that are large contributors. Those activities not considered are livestock grazing and motorized recreation. The DEIS does recognize fugitive dust is a source of PM10 and that the Forest system of roads is a contributor to fugitive dust. The DIES discloses that the Coconino soils have very high wind erodibility factors but relies on unroaded wilderness areas to mitigate the generation of fugitive dust from roads. The Draft Land and Resource Management Plan for the Coconino and DEIS should be changed to address significant sources of fugitive dust and include standards and additional guidelines for activities that generate PM10.

The 2012 planning rule addresses air quality, requiring that standards or guidelines be adopted to “maintain or restore” air quality. See 36 C.F.R. § 219.8(a)(2)(i). Simply “taking into account” impacts does nothing to fulfill the purpose of NFMA, the Wilderness Act, or the Clean Air Act.

We request the forest plan fully safeguard air quality at levels that meet or exceed federal, state, or local air quality standards, and fulfill its related duties to safeguard wilderness values and other air quality-related values.

XII. MANAGEMENT AREAS AND SPECIAL AREAS

VOLCANIC WOODLANDS (Draft Plan pp. 119-120)

The Volcanic Woodlands Management Area is valued for its scenery, yet designated motorized recreation activities can impact the scenery where they occur (See Figures 1-4). However, there are no standards or

guidelines for protecting the sensitive soils and viewsheds of these areas within the Draft Plan. The only Management Approaches are to coordinate with NPS and tribes. The Forest Service should create standards, guidelines, and management approaches to protect the fragile soils and viewsheds of Volcanic Woodlands.

There should be a quantifiable way to measure the impact of motorized recreation on scenery, i.e., number of visible trails on X acres of land or visible from certain viewsheds. Creating a quantifiable metric will allow observation of change over time and corresponding adaptive management. Designate an authority to monitor changes over time. Describe thresholds for when to take actions, such as closing areas to use.



Figure 1 Off Road Vehicle tracks in volcanic woodland, visible from Sunset Crater National Monument.
Photo by Alicyn Gitlin.



Figure 2 Off Road Vehicle tracks in volcanic woodland, visible from Sunset Crater National Monument.
Photo by Alicyn Gitlin.



Figure 3 Off Road Vehicle tracks in volcanic woodland, visible from Sunset Crater National Monument, Photo by Alicyn Gitlin.



Figure 4 Off Road Vehicle tracks in volcanic woodland, visible from Sunset Crater National Monument.
Photo by Alicyn Gitlin.

SAN FRANCISCO PEAKS (Draft Plan pp. 121-122)

The Forest Service seems to be stating that projects on and around the San Francisco Peaks must meet these certain criteria, yet they have allowed expansion of a project which violates these statements and actually permanently altered the landscape and animal habitat by cutting and clearing 75 acres of trees, also significantly altering a significant sacred religious traditional cultural place. The Forest Service needs to amend the Plan language to not allow this to happen in the future. If an area is highly valued for its unique scenic beauty and cultural significance, it should be protected and preserved absolutely. Projects that alter and threaten aspects of such an area should simply not be allowed and the Forest Service needs to address this so it does not continue or happen again in the future.

FORT VALLEY/MOUNT ELDEN (Draft Plan p. 122)

Mt. Elden is a rare mountain environment with a higher degree of natural diversity than the nearby San Francisco Peaks. Mt. Elden is immediately adjacent to Flagstaff and is currently environmentally threatened due to recreational pressure. As stated in the Draft Plan numerous times (e.g. see Chapter 1 of Draft Plan) - this forest is subject to significant impacts from climate change, increasing population growth, increasing recreational demand, increasing recreational conflicts, new types of recreation demands, and increasing pressure on forest resources. Mount Elden supports diverse vegetation communities adapted to differing temperature and moisture regimes, and these habitat types support carnivores and their prey, large mammals such as mountain lions, deer winter habitat, as well as a variety of bird species. There are also archaeological resources, which are being damaged by recreational users.

including downhill bicycling (B. Poturalski, pers. comm.). Yet, **there is no mention of Mount Elden's ecological and archaeological resources in the description given in the Draft Plan – the area is instead treated as a recreational playground. The Forest Service must add a description of ecological and archaeological resources of the Fort Valley/Mount Elden Management Area. Damage to resources from recreation is currently occurring (see Figures 1-5). The Forest Service must add Desired Conditions, Guidelines, Standards, and Management Approaches to protect Forest resources in the Fort Valley/Mount Elden Management Area from damage caused by recreation.**

The Fort Valley/Mt. Elden Management Area is a rare and diverse mountain resource immediately adjacent to Flagstaff – a large portion should be considered a WILDERNESS AREA; at the least it should be classified as ROS class primitive or semi-primitive non-motorized. For example: Other key mountain resources that are similar to Mt. Elden, e.g. Mt. Humphreys and Kendrick, have WILDERNESS areas in a Forest Service attempt to protect their resources. All other mountain resources are miles away from Flagstaff and not nearly as accessible. Consequently, the nearby community uses the Mt. Elden area more than other mountain areas near Flagstaff. In addition, increasingly larger populations from metropolitan cities of Arizona flock to Mt. Elden to get away from the increasingly hot desert climate in surrounding Arizona. Phoenix's population growth is projected to increase at a rate three times greater than the rest of the U.S. Mt. Elden's recreational use is also increasing beyond environmental capacity due to Flagstaff's increasing population, especially due to the growing population of NAU students (projected NAU growth by 2015 = 25,000 local students). These combined factors place Mt. Elden in environmental danger and actions must be taken to preserve and sustain this precious mountain resource.

Coconino National Forest managers have been advised and should already be aware from their own investigations that Mt. Elden is suffering from increasing serious and negative impacts from recreation overuse, illegal trail building activities, improper road use, unsafe motorized and downhill "gravity rider" activities, large volume of recreationists, and recreationist conflicts on road and trails.

On p. 103 of the Draft Plan, the following Desired Condition is given for Dispersed Recreation. We support this statement; yet the situation at Mt. Elden is not being handled in this way:

Growing demand for recreation is balanced with other forest desired conditions, unless increasing capacity results in unacceptable negative effects on natural resources.

We can document resource damage occurring in this area (i.e., Figures 5-9). Instead of protecting natural resources of Mt. Elden and Dry Lake Hills, the Forest Service plans to greatly expand the recreation system there. This is not acceptable unless the Forest Service can demonstrate an ability to protect the soils, diverse vegetation, and valuable habitats present there.



Figure 5 Illegal trail construction. Photo by Emma Benenati.



Figure 6 Illegal trail construction. Photo by Emma Benenati.



Figure 7 Illegal trail construction. Photo by Emma Benenati.



Figure 8 Illegal trail construction, including trees cut down with chainsaws. Photo by Emma Benenati.



Figure 9 Illegal trail construction, including trees cut down with chainsaws. Photo by Emma Benenati.

On p. 122 of the Draft Plan, MA-FtVElden-DC, the following Desired Condition for Dispersed Recreation is given:

The trail system is stable and does not increase significantly in mileage.

We support this statement to protect the resources of this Management Area. Over the past decade, the system has increased significantly due to illegal trail building. The Forest Service now plans to greatly expand trail system mileage, extending trail access to areas previously uncrossed by trails such as Dry Lake Hills and the south side of Mount Elden, without demonstrating an ability to protect natural resources or curtail illegal trail building. The Forest Service should not proceed with adding trail mileage until they first create protective Desired Conditions for the Fort Valley/Mount Elden Management Area through this Plan revision process.

Please follow your stated purpose for this Plan to promote responsible land management for the Coconino, and fulfill your responsibility for the stewardship of the forest to best meet the needs of the American people.

Add a Standard to designate Mt. Elden and Dry Lake Hills areas as non-motorized areas from their gates and beyond

Add the following Management Approach for the Mount Elden and Dry Lake Hills Management Area:

Close the gates on both Mt. Elden and Shultz Pass Roads at the bottom of the roads (e.g. at the current existing gates)

Mt. Elden (and Shultz Pass – see below) are currently being abused and dominated by motorized vehicles repeatedly shuttling “gravity riders” (e.g. 10 - 15 round trips in a few hours) and their heavy downhill bicycles to the top of Mt. Elden trailheads. Gravity Rider shuttles are an improper and unsafe use of Mt. Elden Rd that negatively impacts all other recreationists using Mt. Elden Rd. Gravity Riders also are causing unsafe and negative interactions on all the trails (illegal and legal) as they blast down at unsafe speeds and with no concern for any other trail users.

These gate closures will preserve these mentioned areas while allowing for sustainable and diverse uses of the Coconino forest in the best interest of the majority of the recreationists instead of a select group of motorized users who abuse these roads and disturb all other recreationists by using Mt. Elden and Shultz Pass roads as repeated motorized shuttle routes to repeatedly access trails, of which a number are illegal, at the top of Mt. Elden or the top of Shultz Pass.

These gate closures are critical to preserving the diverse resources and rare mountain environments immediately adjacent to Flagstaff. As stated in the Draft Plan numerous times (e.g. see Chap 1 of Draft Plan) - this forest is subject to significant impacts from climate change, increasing population growth, increasing recreational demand, increasing recreational conflicts, new types of recreation demands, and increasing pressure on forest resources. Please follow your stated purpose for this Plan to promote responsible land management for the Coconino and fulfill your responsibility for the stewardship of the forest to best meet the needs of the American people.

Mt. Elden’s motorized access needs to STOP at the existing gate at the bottom of Mt. Elden Rd, closing off the remaining road to the top of Mt. Elden. Add the following as Management Approaches:

- Authorized administrative vehicles only will be allowed access on Mt. Elden Rd.
- Shultz Pass Road motorized access will STOP at the existing western gate “A” at the bottom of Shultz Pass road near the “Y” area off Highway 180, thus closing the next ~54.5 miles to motorized travel [except for authorized administrative vehicles].
- These two Shultz Pass gate closures (“A” & “B”) would be beneficial because they would allow motorized access for various legal recreationists from Highway 180 only to the “Y” Parking area closure gate, and also motorized access from Highway 89 up to the closure gate at Shultz Pass, but would prevent current motorized travel abuse by downhill or “gravity rider” shuttle vehicles. “Gravity riders” and their bicycles are repeatedly shuttled on the ~4.5 miles between the “Y” Parking area and Shultz Pass to access the high elevation trailheads without having to ride their bicycles uphill. This ~4.5 miles between the “Y” and Shultz pass are most abused because this is the closet access from Flagstaff, aside from Mt. Elden Rd. It is highly unlikely that Gravity Rider shuttles would make the long trip around Flagstaff and up the longer east road to access Shultz Pass from Highway 89; However, many hiking, equestrian, nature watcher recreationists would drive that far to enjoy the forest.
- At the top of Shultz Pass another gate “B” should close off motorized travel from the east ((e.g. vehicles coming from the eastern approach off Highway 89).
- Establish parking areas near these three gate closures (at the gate at the bottom of Mt. Elden Rd; at the gate at the bottom of Shultz Pass road; and at the gate at the top of Shultz Pass). These gate closures and parking areas would also allow access for various recreationists who want to drive to these gates for hiker/cyclist/equestrian recreation activities.

Add the following Standard:

- Gravity Riding should be prohibited and enforced by the Forest Service in the entire Mt. Elden area.

PLEASE SEE the journal article that documents the growing abuse of our public lands by gravity riders and other public land abusers who use these lands as a large gymnasium for the sole purpose of adrenaline thrills: **Shelley Burgin & Nigel Hardiman (2012): Extreme sports in natural areas: looming disaster or a catalyst for a paradigm shift in land use planning? Journal of Environmental Planning and Management pp1-20. DOI:10.1080/09640568.2011.634228. To link to this article: <http://dx.doi.org/10.1080/09640568.2011.634228>**

The following are some methods to reduce bicycle impacts that should be incorporated into the Plan to guide future recreation/trail projects:

- Walk bicycles in certain areas.
- One-way-only trail sections.
- Speed limits (though these may be difficult to enforce).
- Restrict use by time of day, day of week, week of month, month of year.
- Restrict use by season (e.g. to protect soils or sensitive habitats).
- Separate different types of uses at trailheads and congested areas.
- Party size limits.
- Area permits/licenses, reservations, and trip permits, though these should be instituted only in special situations as a last resort.
- Trail alignment to minimize soil erosion, avoid wetlands, sensitive plant or animal habitat, and sensitive archaeological or cultural features.
- Trail alignment to maximize compatibility with adjacent land use and connecting trail use.
- Natural and artificial design features that restrict bicycle speed, such as barriers and speed bumps, which are not an undue impediment to other non-motorized users.
- Design features that enhance sight distance, e.g. locating the trail away from tall brush.
- Design features that minimize trail erosion: proper grades, turn radii, tread hardening, and drainage control.
- Wide or pull-out sections to facilitate safe passing.
- Design features for user enjoyment: loop trails, scenic destinations, picnic/camp sites.
- Barriers to prevent leaving trail. Block and obliterate (rehabilitate) unauthorized trails.

KACHINA PEAKS WILDERNESS (Draft Plan pp. 150-151)

Desired Condition 1 states:

“The ecosystem diversity of the wilderness and ecological attributes and processes that allows it to provide **watershed values**, habitat for native biota, **panoramic vistas, and/or solitude are maintained. Recreation use and ecological functions retain the tribal values and the unique attributes of the alpine vegetation.**” (Draft Plan, p. 150, emphasis added)

This is not being accomplished now. The Forest Service blatantly acknowledges its unwillingness to meet its requirements to protect the area for wilderness and cultural values when it says in its third Desired Condition:

The mountain maintains attributes that provide historic and cultural values such as shrines. There may be inconsistencies with social encounters associated with the wilderness recreation opportunity spectrum on the Humphreys Trail year round and near the Snowbowl Ski Area in winter. (Draft Plan, p. 151)

The Forest Service also states that watersheds must be protected, yet reclaimed water, which may contain various impurities, is being allowed to be used at the top of the watershed. In order to actually meet the Desired Conditions, the Forest Service needs to change the way this land is currently being used, and not allow reclaimed wastewater and a large commercial mechanized operation with a huge impact on ecology, cultural uses, and watershed so close to such a fragile area. The Forest Service must seriously reconsider the special use permit for Arizona Snowbowl if that permit forces the Forest Service to write Desired Conditions that violate its own regulations for managing Wilderness, Recreation Opportunity Spectrum, and Traditional Cultural Properties. (Draft Plan pp. 150-151).

WALNUT CANYON MANAGEMENT AREA – p. 124

A 2009 Congressional Mandate asked the Forest Service to collaborate on a study to examine options for protection of a 30,000-acre parcel surrounding Walnut Canyon National Monument. Many individuals contributed to this study and value this landscape. Habitats within the footprint of the “Walnut Canyon Study Area” include old growth ponderosa and spruce-fir, hanging gardens, riparian, aspen, pine-oak, and piñon-juniper, which support occupied Mexican Spotted Owl Protected Activity Centers, mountain lions, black bear, deer, and more. Recreational opportunities include hiking, backpacking, trail running, horseback riding, bicycling, rock climbing, bird watching, camping, hunting, and cross country skiing; large non-motorized areas and a lack of paved roads within the Study Area offer users the opportunity to participate in their favored activities in relative isolation. Cherished areas within Walnut Canyon Study Area include the Arizona National Scenic Trail, Flagstaff Urban Trail System, Campbell Mesa Trail System, Cherry Canyon, old growth forest patches, “the Pit” climbing area, the floors of western Walnut Canyon and Sandy Canyon, Fisher Point, narrows in Skunk Canyon, Anderson Mesa grasslands, views from the area northeast of Walnut Canyon National Monument, and archeological sites. The size of the Study Area allows us to experience our favorite places and uses without encroaching on Walnut Canyon National Monument or overcrowding any particular location.

The Forest Service should enlarge its Walnut Canyon Management Area to cover the entire footprint of the Walnut Canyon Study Area and should consider it for a Special Land Designation that will prioritize protection of this scenic, recreational, and ecological treasure.

We support the following Standards for Walnut Canyon Management Area MA-Walnut-S:

1 - “No paved roads or utility corridors occur except on the boundaries of the Walnut Canyon MA.” (Draft Plan p. 125)

2 - “In the Walnut Canyon MA, national forest jurisdiction will be maintained for all National Forest System lands. No land exchanges will occur unless the purpose is to acquire land within this management area through exchange of national forest lands elsewhere.” (Draft Plan p. 125)

We would like to see Desired Condition 1 strengthened to say that no roads will be allowed within a one-mile buffer zone around Walnut Canyon's rim. This will help to protect the fragile ecologic and archaeological resources of the area.

We would like to see the following corrections to the Walnut Canyon Management Area section:

“Fisher Point is a popular destination for hikers, mountain bikers, and outfitter-guided horse trips.”
(Draft Plan p. 124)

Please check whether outfitter-guided horse trips are actually climbing the trail to Fisher Point, and whether they have visited this area within the last one to two decades. This may be a mistake.

In the same paragraph that the Forest Service touts, “No paved roads or utility corridors occur except on the boundaries. Major roads provide access and other areas are closed to vehicles. Walnut Canyon and its major side drainages are closed to motorized vehicles,” it goes on to say, “The areas south and east of Walnut Canyon provide more remote dispersed recreation opportunities including motorized travelways.” (Draft Plan p. 124) Funny, but we think the most “remote dispersed recreation opportunities” are provided in areas that don't include motorized travelways. The Forest Service should not pretend that motorized roadways assist those seeking “remote dispersed recreation opportunities”. Instead, those of us seeking these opportunities must go to great lengths to escape motorized roadways if we want to participate in quiet recreation, and Walnut Canyon Study Area is a rare place where we can do that.

“The area north and west of Walnut Canyon provides dispersed recreation opportunities and receives heavy use adjacent to private land and Lake Mary Road.” (Draft Plan p. 124)

Lake Mary Road is *south* and west of Walnut Canyon

ANDERSON MESA (Draft Plan pp. 125-126)

Wetlands should be monitored for duck and other wildlife use.

Pronghorn management guidance from previous Forest Plan should be carried forward to the new plan.

The popular campsites around Marshall Lake should have a restriction on the collection of dead and down firewood to protect remaining downed logs. Trash and toilet paper should be cleaned from campsites periodically.

VERDE VALLEY MANAGEMENT AREA (Draft Plan pp. 129-130)

The Verde Valley MA contains numerous perennial streams that provide corridors for wildlife to migrate in response to weather events and climatic changes. Please add a guideline that fences on National Forest not block wildlife trying to travel along streambeds

FLAGSTAFF NEIGHBORHOODS, SEDONA NEIGHBORHOODS, SEDONA/OAK CREEK

The following comments apply to the Flagstaff Neighborhoods, Sedona Neighborhoods, and Sedona/Oak Creek Management Areas, but can also apply to heavily used trails in other popular recreation areas, such as Fort Valley/Mount Elden, San Francisco Peaks, Fossil Creek, etc.

Create a Management Approach of “Neighborwoods”-specific regular patrols tasked with monitoring particularly prevalent problems of pet waste, invasive non-native plants and other violations within “Neighborwoods.”

Pet waste concentrations as observed at signed Trail Heads (TH) and at informal “social” THs are present in such quantity that runoff from Forest Service runoff might be a source of water contamination of Rio de Flag and Oak Creek Canyon. Personal observations at “Neighborwoods” THs point to more contamination the closer the site is to a residential area. The Draft Plan does not discuss pet waste AT ALL (key word search “neighborwoods”, pet waste) for Flagstaff, Sedona, and Oak Creek Canyon, and yet those interfaces are the very ones most contaminated. The Forest Service must create management criteria at “Neighborwood” interfaces with the goals of pet waste education, preventing pet waste water contamination issues, and removal of pet waste when accumulations become a problem.

Invasives are non-native plants which collectively constitute “one of the gravest threats to the biodiversity of wildlands.” (DEIS v1 p. 1) Invasives are a problem because they displace native species, hybridize with native species, and affect biological communities and ecosystem processes. One example is Cheat grass invasion effects on fire frequency and fire temperature. Invasives follow heavy recreation user events at THs and new or recurrent traffic on motorized roadways, social trails and official and wildcat THs in Flagstaff, Sedona, and Oak Creek Canyon “Neighborwoods”.

Invasives should be written into the direction for creation of a “Neighborwoods”-specific management patrol monitoring recreation impacts –guaranteed to increase in the next 15 years. Specific attention should be paid to dispersed campers and recreational shooters along the Kelly Motorized Trail System (see also section in this document addressing recreational shooting) as mechanized users spread invasives within the National Forests’ “Neighborwoods”. Shooting areas tend to get trampled and denuded of vegetation, allowing invasives to establish, displacing natives with negative long term effects. Effects will occur as users recreate at dispersed sites, denuding vegetation. Native vegetation replacement by invasives is serious because loss of natives “can alter fire regimes and increase erosion in localized areas.” (DEIS v1 p. 462)

Invasives on the rise include Poaceae (grasses) with an invasive occurrence rate of 30% (cheat, Lehmann’s, Bermuda, buffel, fountain, and Johnson); Asteraceae with an invasion rate of occurrence of 20% (3 kinds of knapweed); and Thistle and Toadflax with an invasive rate of occurrence with a slightly lower rate of 20% each. [Identified in “Development Of A Categorized List Of Invasive Non-Native Plants That Threaten Wildlands In Arizona” Arizona Wildlands Invasive Plant Working Group, pub. 2005] Blackberry is an invasive of concern in all riparian habitats. Particular strategic management of Sedona and Oak Creek Canyon riparian areas for blackberry invasion containment within Coconino National Forest “Neighborwoods” must be written into the final EIS.

ROS: The Final Plan must restrict Recreational Opportunity Spectrum (ROS) classes as administered within “Neighborwoods” to those allowing less development. Less development would include: elimination of grazing in “Neighborwoods” forbidding recreational shooting within “Neighborwoods”; and limiting dispersed camping sites, recreational shooting, and disturbance associated with Kelly Motorized Trail System. Dispersed recreation of campers/RVs and motorized recreationists are a vector for spreading invasives, while also denuding vegetation. Invasive control in identified impacted areas should be addressed via protocols from the “Final Environmental Impact Statement for the Treatment of Noxious or Invasive Weed” (USDA Forest Service 2005).

Neighborwood Patrols: Volunteers should be incorporated into visitation, education and sanitation efforts of “Neighborwoods Patrols” to create a sense of ownership, and all actions must be tailored to specific

areas. However, to ensure consistency, these projects should be led by Forest Service staff. Examples include instituting volunteer-driven, Forest Service initiated, “Resource Steward” challenges to the Kelly Trail System users community even before the System is completed. Areas to work on would include official Kelly Trail System trailheads at Lake Mary Rd. and Munds Park trailheads. Volunteer blackberry abatement and other invasive weed eradication at Flagstaff, Sedona, and Oak Creek Canyon area official and social trailheads must be addressed with strategies tailored to specific forest and riparian sites.

The Forest Service must incorporate Forest Service staff with volunteer engagement as well as coordination with appropriate regional environmental corps. Multi-agency coordination can result in management cost reductions, generate a wider variety of trends towards ideal conditions and more intra-regional opportunities for user engagement.

XIII. SPECIAL AREAS – WILDERNESS

Wilderness Summary

We commend the agency on the thorough Desired Conditions, Objectives, and Guidelines found in the Draft Land and Resource Management Plan for existing wilderness areas. We recognize that the Coconino NF has the difficult task of managing the wilderness character of these 10 existing wilderness areas and we are encouraged to see the agency's vision for protecting these areas into the future. We also recognize that the Coconino NF and its wilderness areas receive a large amount of recreational visitors which can adversely affect those areas' characteristics. However, we **strongly encourage the agency to not manage wilderness solely as a recreation designation**. Wilderness plays an important role in other areas of management such as watershed health, refugia for wildlife, preservation of cultural sites, sources of clean air, and as local economic drivers. Moreover, wilderness preservation grows increasingly important to provide reservoirs of biodiversity in the face of global climate change.

We strongly support Alternative C's recommendations for 13 new wilderness areas totaling 92,386 acres. (Forest Service 2013a:21). We were, to say the least, stunned that Alternative B (Proposed Revised Plan; USFS 2013a:12) recommended only three areas (less than 16% of potential acreage) the agency itself agreed met potential wilderness criteria. (Forest Service 2013b:3; Forest Service 2013a:18). The forest's “Potential Wilderness Area Evaluation Report” (Forest Service 2013b) stated that areas other than presented in Alternative B have had mixed input for and against their recommendation and the value they would add to the National Wilderness Preservation System was not as persuasive. (Forest Service 2013b:6). As a collective group that has provided detailed information on many of the Potential Wilderness Areas, we ask for the rationale for why certain areas were not supported by the agency when other areas, with the same ratings in the Potential Wilderness Area Evaluation Report, are being supported by the agency. Since 2007, conservationists have consistently supported wilderness protection for all the potential wilderness areas ***that CNF itself rated high for potential wilderness designation***. (Forest Service 2013b:3).

We submit that it is disingenuous for the agency to suggest the wilderness suitability rationale provided, including its own, was not persuasive. For example, our earlier wilderness recommendations (GCWC 2007; GCWC and CBD 2007; GCWC et al. 2010; and AWC 2007, 2007a, 2007b, 2007c), as well as our joint comments on draft inventory and capability processes for Potential Wilderness Evaluation (GCWC and AWC 2009) demonstrate our long-term commitment to support wilderness designation and afford the highest protection for the full spectrum of native species as well as experiential opportunities dependent on intact natural ecosystems, and quiet recreation. We emphatically contend that, given the Coconino National Forest's critical ecological and significant recreational value to northern Arizona, protection of

wilderness character should be a forest management priority. This process of identifying lands recommended for potential wilderness consideration is a vital first step in protecting areas and landscapes deserving of full wilderness designation.

While we commend much of the analytical effort found in the Potential Wilderness Area report, there appears to be a problematic predisposition to provide unduly low ratings for “Availability” based on several considerations, resulting in only one “High” rating out of 15 areas analyzed (see Potential Wilderness Evaluation Report, page 8). First, the need for vegetation treatments and fire presuppression appears to be cited in multiple cases as limiting availability. Although wilderness management can and should require certain methods and standards to conduct these activities, indeed these activities can proceed in wilderness. Second, providing administrative access for permittees and wildlife managers also appears to be cited as contributing to low availability ratings. Again, while appropriate approvals and restrictions would be necessary to maintain wilderness characteristics, necessary administrative access can continue in wilderness areas. These two considerations should not be used to preclude an area from being recommended for wilderness management.

Inventoried Roadless Areas

Five of the forest’s existing Inventoried Roadless Areas (IRAs). These areas consist of:

- Walker Mountain: 6,300 acres
- Cimarron-Boulder; 15,590
- Hackberry Mountain: 26,223
- East Clear Creek: 2,033
- Barbershop Canyon: 1,310.

Conservationists have provided timely, thoroughly documented wilderness suitability analysis consistent with Forest Service policy for these areas (AWC 2007, 2007a, 2007b, 2007c; and GCWC 2007; and GCWC and CBD 2007). We were especially dismayed that only Walker Mountain was proposed as potential wilderness for the proposed plan (Forest Service 2013a:18). Why would other areas, such as Hackberry and Barbershop, not be carried forward in the agencies proposed alternative (Alternative B) when those areas scored HIGHER in the Capability, Availability, and Need than Walker Mountain? After the substantial amount of work that our collective group invested in studying and advocating for these potential wilderness areas, we request to be provided with the rationale for the Alternative B results. We agree with the agency’s finding that these areas met the criteria for Potential Wilderness designation (Forest Service 2013b:3).

Additions to Existing Wilderness

Wet Beaver Wilderness

Deadwood Draw (11,939 acres). Conservationists presented a detailed outline regarding this addition to the existing Wet Beaver Wilderness (GCWC and AWC 2010). We concur with the agency’s findings that northern leopard frogs, four spotted skipperling, and at least five species of bats would benefit from potential wilderness designation (Forest Service 2013b:31). We agree with the agency conclusion that potential wilderness designation would enhance the Wet Beaver’s wilderness character. (Forest Service 2013b:32.).

West Clear Creek Wilderness

- Cedar Bench (5,867 acres). We agree with the Forest Service that the primitive setting, water quality of West Clear Creek and that native biodiversity would benefit; and that critical and unique habitats and diverse ecological conditions would be protect by Potential Wilderness designation. (Forest Service. 2013b:43).
- Black Mountain (9,850 acres). We concur with the agencies findings that potential wilderness designation would provide significant protection of the areas rare and limited cottonwood willow riparian forest and mixed broadleaf deciduous riparian forest ecosystem. We agree that golden eagles, Chiricahua leopard frogs, bald eagles and southwest willow flycatchers would benefit from the preservation of primitive surroundings in the Black Mountain potential wilderness. (Forest Service. 2013b:46,48).

Fossil Creek Wilderness

- Tin Can (4,010 acres). We agree with FS findings that Chiricahua leopard frog would benefit and that the overall wilderness character of Fossil Creek Wilderness would be enhanced. (Forest Service. 2013b:46,62-63).
- Davey's (1,901 acres); We concur with the agency's report that wilderness potential designation would benefit native species razorback suckers, spikedeace, loach minnows and spring snails; and that the wilderness character, e.g., opportunities for solitude, of Fossil Springs would increase. (Forest Service. 2013b:68).

Strawberry Crater Wilderness

We strongly endorse protection as a designated potential wilderness this 6,704-acre addition to the existing Strawberry Crater Wilderness; and agree with the agency's conclusion that designation would further protect places of traditional cultural importance to the Hopi and Navajo. (Forest Service. 2013b:13)*Kachina Peaks Wilderness*

We support adding this 436-acre to the existing wilderness to enhance habitat for a variety of species including the northern goshawk, the cultural value to Native Americans, enhancement of Kachina Peaks' wilderness character, and for the administrative reasons outlined by the Forest Service. (Forest Service. 2013b:15-17).

Sycamore Canyon Wilderness

We endorse the designation of a Railroad Draw potential wilderness. We agree that the addition would enhance the wilderness character of Sycamore Canyon, as well as benefit species including Mexican spotted owl, bald eagles, and riparian species (Forest Service. 2013b:27)

In summary, we endorse Alternative C’s potential wilderness recommendations; and the alternatives general response to public recommendations that significantly more lands should to be managed in primitive and natural settings with reduced human-related disturbance for the benefit of recreation, botanical, and wildlife resources. (Forest Service 2013a:19-20).

XIV. WILD AND SCENIC RIVERS

We support the Forest’s protection of 43.5 miles of existing Wild and Scenic River segments, and expect that, as consistent with FSH 1909.12, Section 83.1, Forest management will provide robust interim protection of 180.9 river miles of the 10 eligible segments identified in the 1993 Report and by the 2007 interdisciplinary team. (Forest Service 1993a; 1993b; 2013c:3). In addition, the CNF should include the 6.7 miles section of the Upper Verde River in any analysis, interim protections and subsequent management direction provided by the revised Forest Plan. This segment of the Upper Verde River was under the purview of the Prescott National Forest in previous studies, but the eastern bank of the river is managed by the CNF. It is the responsibility of the CNF to preserve each river segments’ Outstandingly Remarkable Values (ORVs) and free-flowing conditions under interim protections until a full suitability study is completed for each segment.

River/Segment	Segment Length in Miles	Eligibility Classification
Barbershop Canyon	13.5	Wild
East Clear Creek	49.1	Scenic
Leonard Canyon	23.5	Recreational
Oak Creek Segment 1	13.2	Recreational
West Fork of Oak Creek	10.5	Wild
Sycamore Creek	4.1	Wild
West Clear Creek, Segment 1	32.6	Wild
West Clear Creek, Segment 2	6.3	Scenic
Wet Beaver Creek, Segment 1	13.6	Wild
Wet Beaver Creek, Segment 2	5.0	Recreational
Upper Verde River	6.7	Recreational

XV. GRAZING SUITABILITY

NFMA implementing regulations require the Forest Service to determine “the suitability and potential capability of National Forest System lands for producing forage for grazing animals and for providing habitat for management indicator species.” 36 C.F.R. § 219.20 (1982). “The present and potential supply of forage for livestock, wild and free-roaming horses and burros, and the capability of these lands to produce suitable food and cover for selected wildlife species shall be estimated.” *Id.* § 219.20(a). Where the agency identifies lands that are “in less than satisfactory condition,” it “shall” plan for their restoration. *Id.* The agency must consider, among other things, “possible conflict or beneficial interactions among livestock, wild and free roaming horses and burros and wild animal populations, and [...] direction for rehabilitation of ranges in unsatisfactory condition...” *Id.* § 219.20(b).

Ecological costs of livestock grazing exceed those of any other use of national forest lands in the American Southwest. In this arid region subject to chronic and intensifying drought (Seager et al. 2007, Seager and Vecchi 2010, Williams et al. 2012), livestock grazing is the most widespread cause of species

endangerment, lost soil productivity, and degradation of the human environment (Beschta et al. 2012, Fleischner 1994). Grazing destroys vegetation, displaces soil, and consumes enormous quantities of water to the detriment of native species and the ecosystems on which they depend (Belsky et al. 1999, Belsky and Blumenthal 1997). Range capability in the Coconino National Forest has significantly changed since the mid- 1980s, when grazing suitability assumptions on which the Draft Plan is based were developed.

Prior estimates of range capability did not account for synergistic effects of livestock grazing and climate change on soil, water, vegetation and fire regime. (Beschta et al. 2012). It is unlikely that range resources in the planning area ever will return to “historical norms” that supported forage production capacity over the past century:

Despite ample uncertainties in model projections of hydroclimate change, and the continuation of natural climate variability on all timescales, it seems very probable that [South Western North America – “SWNA”] will be drier in the current century than in the one just past. Skillful prediction of the magnitude and timing of this drying will require prediction of the rate of anthropogenic change and prediction of the evolving natural variability for which currently there is scant evidence of any predictability beyond the interannual timescale. Another likely outcome is a continuing decline in winter snowpack and earlier onset of snow melt that will add to the stress on regional water resources.

Seager and Vecchi (2010: 21282).

Historically, “interglacial climates in the southwestern US can experience prolonged periods of aridity, lasting centuries to millennia, with profound effects on water availability and ecosystem composition. The risk of prolonged aridity is likely to be heightened by anthropogenic forcing.” (Fawcett et al. 2011: 520). Williams and others (2012) noted that while average winter precipitation totals in the Southwest have not been exceptionally low in the recent past, average summer-fall evaporative demand since 2000 is the highest in the past 1,000 years. Forest drought stress over much of the past 13 years, including in 2011 and 2012, matched or exceeded the recorded “megadroughts” of the 13th and 16th centuries. The only other 13-year periods when similar conditions occurred with such frequencies in the past 1,000 years were during the megadroughts themselves. The strongest megadrought occurred during the second half of the 1200s and is believed to have played an important role in the abandonment of ancient Puebloan cultural centers throughout the Southwest. The observed trends in drought stress on forest conditions coincide with strong climate model agreement on anthropogenic greenhouse warming. Model projections indicate that megadrought-level stresses on water availability and vegetation production will be regularly exceeded by the mid-21st century, and even the wettest and coolest years of the late-21st century will be more severe than the driest, warmest years of the past millennium. (Williams et al. 2012). The Forest Service does not account for this information, which has been repeatedly supplied to it through numerous public comments on allotment-specific management plans in the Coconino National Forest.

Drought will continue to impact range capacity and utilization levels for the duration of the revised forest plan, (Fawcett et al. 2011, Seager et al. 2007, Seager and Vecchi 2010), and it is likely to transform resource availability by stressing water supplies and net productivity, which in turn will produce novel environments. (Williams et al. 2012). The Forest Service should disclose the foreseeable range of climate effects to range suitability, and candidly disclose past instances when livestock grazing has exceeded capability. The Forest Service is required by NEPA to take a hard look at potentially significant impacts at direct, indirect and cumulative effects of the draft plan to grazing suitability. The methods used to determine suitability must be clearly described in a way that is understandable to the decision-maker and the general public.

Despite its environmental costs, the Forest Service continues to promote livestock grazing with \$100 million annually in direct subsidy to private ranching interests for “range improvements.” This includes spring and well development; installation and replacement of water tanks and pipelines, fence construction and repair, road reconstruction and repair, and vegetation treatments, particularly in areas where woody tree species now encroach on historical grasslands. The analysis should take a hard look at effects of foreseeable range “improvements” to the environment, propose standards and guidelines to limit their impact, quantify the financial cost to taxpayers that may result, and specify any source of appropriated funds that the Forest Service intends to use to pay for them.

The Forest Service charges livestock grazing permit holders only \$1.35 in fees per animal unit month (“AUM”). In contrast, the average monthly lease rate in 2011 for livestock grazing on private lands in 11 western states surveyed by the Congressional Research Service was \$16.80 per head, more than 12 times greater an amount per AUM than the Forest Service charges permit holders to graze national forest lands.

BLM and the Forest Service typically spend far more managing their grazing programs than they collect in grazing fees. For example, the GAO determined that in FY2004, the agencies spent about \$132.5 million on grazing management, comprised of \$58.3 million for the BLM and \$74.2 million for the Forest Service. These figures include expenditures for direct costs, such as managing permits, as well as indirect costs such as personnel. The agencies collected \$17.5 million, comprised of \$11.8 million in BLM receipts and \$5.7 million in Forest Service receipts. For FY2009, BLM has estimated appropriations for grazing management at \$49.3 million, while receipts were \$11.9 million. The Forest Service has estimated FY2009 appropriations for grazing management at \$72.1 million, with receipts estimated at \$5.2 million. Receipts for both agencies have been relatively low in recent years, apparently because western drought has contributed to reduced livestock grazing and the grazing fee was set at the minimum level for 2007-2011.

Other estimates of the cost of livestock grazing on federal lands are much higher. For instance, a 2002 study by the Center for Biological Diversity estimated the federal cost of an array of BLM, Forest Service, and other agency programs that benefit grazing or compensate for impacts of grazing at roughly \$500 million annually. The Forest Service charges grazing permit holders an unreasonably low fee to run livestock on national forest lands. As a result, it returns less than 10 percent of its expenditure of public funds for grazing management to the U.S. Treasury. Federal subsidies shield the grazing permit holder from paying market rates for services it acquires on public lands free of charge. The agency should make this clear in its benefit-cost analysis of the revised forest plan.

Aspen stands are declining within the Coconino. Livestock effectively suppress aspen regeneration. (Sampson 1919, Houston 1954, Kay 2001, Beschta and Ripple 2010). To protect declining aspen stands, livestock, areas that contain aspen stands should be excluded from livestock grazing and classified as unsuitable for this activity. As discussed previously, riparian and wetland areas should also be classified as unsuitable for grazing except in instances where valid existing water rights require access to these areas.

One way the Forest Service can achieve better management of land resources is by allowing current grazing permit holders to voluntarily retire their allotments for conservation purposes. This will build flexibility into Forest management and allow for improved habitat and protection of understory seed banks in an uncertain climatic future.

XVI. ENERGY AND MINERALS

In regard to energy and mineral development, we recommend alternative C, which sets aside 91,445 acres (to include existing withdrawals, new wilderness, and special areas) for withdrawal from mineral entry. This alternative offers native wildlife and plant species the best opportunity to survive and persist in the presence of changing climate and increasing wildfire risk. Alternative B creates guidelines for future mineral development projects, which are the same for alternative C. Specifically the “social, cultural, and ecological values of an area” are to be considered for withdrawal from mineral entry. However, alternative B recommends just 14,767 acres to be withdrawn under the Draft Forest Plan language.

We support the guideline of withdrawing the forest’s research natural areas and botanical areas from mineral entry, in order to protect the numerous ecological values of these areas. We recommend withdrawal of the Cottonwood Basin Fumaroles Geological Area, which displays a unique geological phenomenon; and we agree with the Draft Forest Plan language regarding retention of existing withdrawals: “To protect social, cultural, and ecological values, the existing mineral withdrawal on the San Francisco/Mount Elden Recreation Area and Oak Creek Canyon Recreational Area should be maintained” (p. 84). Mineral development should remain prohibited in these recreation areas because of their significant social and ecological importance.

We understand that leasing of lands for mineral extraction falls under the jurisdiction of BLM, however, the Coconino NF has the authority to designate forest areas as “no surface occupancy” or “no leasing,” or to impose other leasing stipulations. We recommend the adoption of stringent guidelines in the Forest Plan in order to limit future surface occupancy and leasing for mineral development, which will help to protect the social, cultural, and ecological values of forest areas. Considering that Forest Plan revisions take place once every 15 years, and that technological advances in mineral extraction can occur rapidly (e.g. hydro-fracturing of oil shale has developed in the past ten years, and is now occurring in many neighboring states), it is important that stringent mineral development guidelines are already in place to ensure long-term protection of natural resources within Coconino NF.

Geothermal resource potential on Coconino NF has been identified in the San Francisco and Mormon Mountain Volcanic Fields, and the geothermal waters near Montezuma Castle National Monument and Verde Hot Springs. While there are many advantages to geothermal energy production, the extraction of this renewable resource needs to be limited to those areas where social, cultural, and ecological values will not be compromised, and where existing transmission corridors can be utilized. We would like to see specific guidelines in the Forest Plan for geothermal energy production that is minimally disruptive to ecosystem processes and does not infringe upon social and cultural values. As mentioned in the DEIS, chapter 3 (p. 643), the disturbances associated with geothermal mining include: “Removal of trees and surface vegetation, displacement of surface soils, erosion and sedimentation, construction of roads, buildings, wells, pumping stations, waste water ponds, and transmission lines.” Such disturbances can be severe for native flora and fauna in the region and may facilitate the establishment of exotic species.

Due to the potential for significant ecological disturbance, as well as the cultural significance of these areas for local tribes, geothermal energy production may not be suitable on Coconino National Forest. Guidelines need to be stipulated for each of the disturbances mentioned above in order to ensure minimal impacts for vegetation, wildlife, and cultural values before any mineral development project moves forward.

We have specific concerns about the potential for geothermal resource development in the San Francisco Volcanic Field, due to the ecological impacts arising from well drilling, plant construction and operations, and construction of a new transmission corridor. The Verde Hot Springs should be withdrawn from consideration for similar reasons. There are sensitive plant and wildlife species in this area, and considerable habitat disruption would be required for energy transmission.

The proposed forest plan (alternative B) does a sufficient job to propose new guidelines for mineral development within Coconino NF, yet does not do enough to establish new wilderness and special areas for withdrawal.

XVII. NEED FOR CHANGE – CLIMATE AND RECREATION/DISPERSED RECREATION

The Coconino National Forest states the need for changes in the revised Plan due to future community growth, community expansion, climate change, the Forest Service focus on improvement of ecosystem health, and recognition of ecological resources, significant changes in forest use, increased conflicts, new types of recreation demands, relationships with surrounding communities, population growth, etc. (e.g. see numerous statements in Chap 1 of Draft Plan). The revised Plan of the Coconino National Forest must seriously and scientifically examine the current demand of uses and evaluate how many uses it can accommodate and still fulfill your mission and purpose to promote responsible land management and fulfill your responsibilities for stewardship of our forest.

The Coconino National Forest has stated and it is widely known the Coconino National Forest is negatively impacted by population growth and increasing demand on the forest. The Coconino National Forest is currently experiencing negative changes in forest use due to increasing safety issues from increasing users on roads and trails, increasing user conflicts due to conflicting and/or unsafe activities on roads and trails, and increasing illegal activities e.g. illegal downhill or “gravity” trail building and activity resulting in further conflicts and unsafe conditions. These illegal activities must be stopped by the USFS, and the Forest Service must enforce its existing regulations against any such activities. Illegal downhill (or “Gravity rider”) trails must be obliterated.

The Coconino National Forest states that your funding is flat or may even be decreased (also see Recreation Specialists Report). It is suggested that you keep your proposed actions within the revised Plan to a cost level that allows you to do your own trail work or pay an outside, objective vender to do it. If you cannot afford it, then don’t propose to build new trails and engage in unethical and/or perceived collusion with a special interest group. You should use your remaining limited funds to police our Coconino National Forest and enforce your own existing regulations.

As it is written now, statements in the entire Forest Plan are vague and lacking in specific meaning and details. The Forest Service must change this Plan and add specific details, exact plans of action, metrics for desired future conditions, metrics for monitoring, metrics for enforcement of regulations, and metrics to measure how you plan to follow your statements to “promote responsible land management for the Coconino and fulfill the Forest Service’s responsibility for the stewardship of the forest to best meet the needs of the American people”.

“Gravity Riding” or steep downhill mountain biking should occur in an area where it can be transparent (as opposed to the current illegal and covert activities), sustainable, continuously managed and controlled, mitigated, monitored, evaluated, and fees to cover expenses incurred (i.e., liability insurance, soil mitigation) can be collected by the Forest Service or a contracted concession. A prime location example is Snowbowl or Wing Mountain where commercial activities already exist. The primitive and pristine setting of Mt. Elden is NOT the place for this destructive and illegal activity to occur.

XVIII. PEOPLE AND THE LANDSCAPE - RECREATION

ROADS AND FACILITIES

The following Desired Condition at page 91 of the Draft Forest Plan should be edited as follows:

“FW-RdsFac-DC

Roads

1. The transportation system (roads) expands and contracts commensurate with FISCAL REALITIES, use and needs, and it balances the desire for public access with potential for ecological impacts. An economical system of sustainable, well maintained, and marked roads provides diverse opportunities to safely explore the forest and minimizes impact to watershed conditions, rare plants, fisheries, and wildlife habitat and movement.”

DISPERSED RECREATION

We applaud and appreciate all the thought and effort that went into the description of desired conditions for Dispersed Recreation (FW-Rec-Disp-DC). These aspirations are generally generous and lofty in attempting to strike a realistic balance between the preservation and restoration of natural places, and the increasing recreational demands imposed by humans. However, we find an overall lack of detail concerning *how*, and often *when* this is to be achieved or implemented, enforced or monitored.

Our comments on Dispersed Recreation may also refer to, or compare to, Developed Recreation, for as stated in Chapter 3 p. 586 volume 2 of the DEIS:

Even though the plan desired conditions are divided into developed and dispersed recreation categories, both sections provide direction to consider each resource as part of a larger landscape and recreation experience.

FW-Rec-Disp-DC – pp. 103-104

Regarding Desired Condition #4 – “Motorized routes are easily identified on the ground and on the motor vehicle use map...”

Currently signs only inform of non-motorized areas, but few or none identify actual open motorized routes and/or their usage. Add a management approach to provide signage identifying routes as open to motorized vehicle use. This will reduce confusion and promote compliance with regulations, while reducing the problems that result from sign theft.

Regarding Desired Condition #4 – “Motorized vehicle use only occurs as identified on the motor vehicle use map (MVUM), except as authorized by permit or for administrative uses.”

Regarding Desired Condition #7 – “Resource damage from unauthorized motorized trails is minimal and unauthorized trails are rehabilitated to prevent future access by the public and to mitigate long term soil and water impacts.”

We agree with these Desired Conditions but currently, the above statements are far from true. The Forest Service should be specific about how they intend to realistically monitor and enforce these. Attached are several photos of illegal forest entry (See Figures 10-15) by single and double-track ORVs as taken by a

Sierra Club outings leader in 2013. Figure 16 shows the only noticeable sign we saw off FR 700, that was long felled to the ground. These and all other motorized recreation-referenced photos to follow were taken in the area between I-17 and Lake Mary roads, bordered by Mountaineer and Munds Park, otherwise known as the Kelly Trails area.



Figure 10 Off Road Vehicle trespass damage. Photo by Rick Resnick.



Figure 11 Off Road Vehicle trespass damage, soil compaction and erosion. Photo by Rick Resnick.



Figure 12 Off Road Vehicle trespass, erosion, and damage. Photo by Rick Resnick.



Figure 13 Off Road Vehicle trespass and damage. Photo by Rick Resnick.



Figure 14 Off Road Vehicle trespass, damage, and soil compaction. Photo by Rick Resnick.



Figure 15 Off Road Vehicle trespass and damage. Photo by Rick Resnick.



Figure 16 Felled sign. Photo by Rick Resnick.

The Forest Service should:

- Provide explicit language as to how monitoring and enforcement will be implemented and how often.
- Add a Management Approach to provide adequate signage identifying not just where motorized vehicles cannot go, but where they can go, to lessen incidences of straying off legal trails and doing damage.
- Specify standards, guidelines, and management approaches to achieve all Motorized Recreation Desired Conditions.
- Implement proper signage for existing motorized routes as outlined in the Management Approaches for Dispersed Recreation section of the DLRMP chapter 2 page 108:
 - Provide signage and information aimed at the following objectives: to prevent lost riders, to show opportunities of where to ride, to identify dangerous and/or closed areas, to teach riding ethics, and to reduce user conflicts.
- Outline a realistic monitoring plan as outlined in the Travel Management Evaluation and Monitoring plan, November, 2011 for existing motorized routes. (Also see our comments under SECTION 2: DLRMP PAGE 177 – MONITORING STRATEGY)
- Outline a realistic enforcement plan as outlined in the Coconino National Forest ENFORCEMENT PLAN Implementation of the National Travel Management Rule (TMR) Updated: November 2011 for existing motorized routes.

A standard establishing capacity limits should apply in areas where resource damage and negative impacts to surrounding lands are occurring, such as Cinder Hills OHV Area. Capacity is never mentioned in regards to motorized recreation (pp. 103-104), though the following Desired Condition is given for Dispersed Recreation (p. 103):

Growing demand for recreation is balanced with other forest desired conditions, unless increasing capacity results in unacceptable negative effects on natural resources.

Since we can document resource damage occurring in the Forest (i.e., attached photos), capacity based systems should be considered if other methods are not effective at reigning in impacts. The Forest Service should establish a guideline and management approach to achieve the Desired Condition concerning capacity limits.

The following desired condition at page 104 of the Draft Forest Plan should be edited as follows:

“7. Resource damage from unauthorized motorized trails is minimal and unauthorized trails are rehabilitated to prevent future access by the public and to mitigate long term soil and water impacts. ENFORCEMENT AGAINST UNAUTHORIZED USES IS HIGHLY VISIBLE AND OCCURS WHENEVER UNAUTHORIZED USES ARE ENCOUNTERED BY LAW ENFORCEMENT OFFICERS. Motorized trails are located ~~with minimal~~ TO MINIMIZE impacts to sensitive resources such as cultural sites, ~~highly erodible~~ soils, water, and wildlife and botanical resources. Poorly located trails are redesigned or relocated. THE DESIGNATED MOTORIZED ROUTE SYSTEM MATCHES THE FISCAL REALITIES OF THE FOREST.”

The following desired condition at page 106 of the Draft Forest Plan is inadequate and unclear:

“Snow-Based Recreation

20. Snowplay activities occur where conflict between motorized and nonmotorized activities is mitigated through signage and design considerations.”

This desired condition should be changed to reflect the requirement in the Travel Management Rule that the Coconino National Forest designated a system of motorized winter routes (snowmobile routes) that comply with the Executive Orders upon which the Travel Management Rule is based. *See* 36 C.F.R 212.8 (known as “Subpart C” of the Travel Management Rule.

FW-Rec-Disp-O

Regarding Objective #1 on p. 106 - Develop 2 to 8 systems of designated bike trails, equestrian trails, and/or **motorized trails** to adequately provide for these user groups and reduce conflicts between user groups within 10 years of plan approval.

We feel this is not acceptable due to the fact that so little has been done up to this point in way of monitoring, enforcement, education and signage.

Before increasing the number of trails, the Forest Service should demonstrate that increasing the number of trails won’t also lead to increased creation of social trails, both to the trails themselves and to existing dispersed camping area corridors. The result can often be acute erosion of natural areas on either side of forest roads, as evidenced by Figures 10-15.

A recent informal 2013 Sierra Club survey of several hikers/runners/residents of Mountaineer and Munds Park conducted by an outings leader in the field, suggests that the continually-increasing ORV traffic near their homes is **highly offending and disturbing, in terms of increased noise pollution, un-regulated**

gas fume levels and inconsiderate motorized riders “dusting” and running them off trails. These undeclared routes surrounding their homes are basically connecting trails to “official” ORV trails.

The Standards for Dispersed Recreation on page 106 of the Draft Forest Plan should be changed as follows:

FWS-Rec_Dis-S

1. Prohibit motor vehicle AND SNOWMOBILE use beyond the designated system of roads, trails, and areas, as defined on motor vehicle use maps, except for those uses authorized by law, permits, and orders in connection with resource management and public safety.

DLRMP page 108 Under “Management approaches for dispersed recreation” states:

“Recognize new activities that occur on forest lands, while upholding the responsibility to protect the natural environment and the multiple use rights of other visitors.”

The DEIS volume 2, chapter 3 page 570 states:

Increases in motorized uses (primarily 4-wheel drive and all-terrain vehicles) have resulted in somewhat less opportunity for some of the more “primitive” attributes, such as solitude and natural quiet in some areas, for example near popular recreation sites and adjacent to forest bounded communities.

We should NOT be setting a precedent where motorized users can continually displace all others in the forest, depreciating their enjoyment of nature and/or their homes. ORV use can be fully incompatible with nature-based enjoyment of the forest and the protection of natural values, and preservation of opportunities for quiet recreation, should take precedence over recreational uses that can damage the environment. The Forest Service should *please* restrict as much motor vehicle traffic as possible to cities, not nature.

The Forest service should add the following as Management Approaches, Standards, and Guidelines:

- Improve management on currently available trail systems before considering any new trail systems.
- Trails and areas on public lands should be closed to all vehicles unless: i. determined to be appropriate for their use through completion of an analysis, review, and implementation process, and ii. officially posted with signs as being open.
- Trails and areas designated for vehicular use must be monitored periodically to detect environmental damage or user interference inconsistent with the above criteria. Where this occurs, the trail or area must be closed to vehicles unless effective corrective regulations are enforced.
- Propose new trail systems as an addendum to the main Forest Plan and evaluate suitability on an individual basis.
- Ultimately, consider the fact that any increased motorized activity is counter to the natural environment that all non-motorized visitors seek.
- Consistently restrict motorized activities to keep down noise near residential areas.

- When conducting Forest user surveys, include local residents and people from effected residential areas, perhaps by mass mailing to gauge how they currently recreate on forestlands, what their expectations are and any potential issues they may have. Then, apply that data in the decision-making process.
- Increase public outreach informing of proposed trail systems in way of expanded ads, radio announcements, etc. Refer to the Travel Management Implementation Communication Plan, updated 2011, Target Audiences, page 6:
 - Messages and Themes for each audience will be the same, but the depth of detail and information and delivery methods will vary. The five primary audiences are Internal, Partners, Local Community, Special Interest, and Forest Visitors.
- Consider additional routes only if absolutely necessary. This includes considering the identification of possible single-use trails, as no non-motorized visitors wish to share trails with noisy, stinky speeding dirt bikes, quads, etc.
- Consider signage on multi-use trails to say that, "while these trails are primarily-designed for motorized use, all users are welcome". This way, non-motorized users are forewarned and can choose not to use a trail, yet no one is absolutely restricted. Thus, it is officially a multiuse trail, with a "suggested preference" of use.
- On trails with high user conflicts, if user conflicts cannot be mitigated, consider why: is it because of high levels of erosion or trail degradation? Noise and odor associated with motorized use? Speed and safety concerns? Wildlife disturbance? If resource damage or safety concerns are an issue, offending activities should be removed from high conflict areas.
- Please consider the above Management Approaches to supplement the following:
 - Page 588 of the DEIS states: While all trails on the forest are currently managed for multiple uses, the modified proposed action recognizes not all trails are well suited for this strategy and, consequently, has a management approach to consider single-use trails where user conflict cannot be mitigated.

We support the statement made in DEIS, volume 2, chapter 3 p. 592-593 under "Recreation Suitability, Alternative C as a guide to future motorized recreation activities. Please refer to it in the Plan:

- Because of the increase in recommended wilderness and the delineation of wildlife habitat management areas in alternative C, there would be an increase in acres considered not suitable for new motorized areas, motorized trails, and roads for public access.

In addition:

- In alternative C, primitive and semiprimitive nonmotorized areas, and Walnut Canyon Management Area would be not suitable for snowmobile use. This would lead to snowmobile use being restricted from recommended wilderness and most special areas. In total, it would restrict snowmobile use, except for authorized use to access private property, on approximately 27 percent (539,374 acres) of the Coconino NF. This would increase opportunities for quiet winter recreation for cross-country skiing and snowshoeing.

Regarding Desired Conditions for Dispersed Recreation #8 - There is little human litter as a result of effective enforcement, patrols, and use of refuse and recycling facilities. Through a variety of interpretive efforts, people learn about geology, botanical communities, biodiversity, and heritage site etiquette, and they will be motivated to practice careful stewardship.

A Sierra Club outings leader collecting baseline trail monitoring data in the Kelly trails area in 2013 found a higher density of trash off major connecting roads such as SR-700, SR-3E and SR-132 than other sections of the area. In other words, this was quite a bit of roadside trash. We also feel that the increased volume of visitors that additional trail systems would bring would only increase the volume of this trash, both off major forest roads and dispersed camping corridors. To achieve this Desired Condition, a Management Approach should be written increase enforcement, enforcement, patrols, interpretive efforts, and use of refuse and recycling facilities. The Forest Service should not create new trail systems until an effective system is put in place that succeeds in curtailing litter problems.

The Forest service should also establish Management Approaches, Standards, and Guidelines to:

- Provide explicit language as to what the form of enforcement will be and how often.
- Define where refuse containers will be placed and how often trash will be collected.
- Define these interpretive efforts to educate forest visitors.

RECOMMENDATIONS:

- Provide small but industrial metal refuse containers at every major forest road intersection such as roads 700 (235, 236, 78), 3-E (866, 762), 240 (228) and 132 (132D, 236, 133).
 - Provide small but industrial metal refuse containers on all dispersed camping corridor roads.
 - Provide educational and informational signage wherever these above trash containers are located.
- NOTE: include language as to the penalties of littering Coconino forestlands.

The following Management Approaches at page 109 of the Draft Forest Plan should be changed as follows:

“When developing motorized trails, ~~consider their suitability as~~ MINIMIZE CONFLICTS ON multiple user trails for nonmotorized recreation.”

“Cooperate with the AZGFD to stock NATIVE fish and provide fishing access to meet goals and objectives of the Arizona Cold Water Fisheries Strategic Plan.”

RECOMMENDATIONS:

To facilitate better off-road vehicle and motorized route management forest-wide, we recommend the Draft Forest Plan:

- 1) Adopt Executive Orders 11611 and 11989 as Standards in the Forest Plan.
- 2) Adopt a 1 mile of road per square mile of land road density standard and add direction on how this density is calculated (explained more fully below);
- 3) Adopt Wildlands CPR’s Best Management Practices for management of roads and off-road vehicles as part of this plan revision (Attached as Appendix 1);

- a. The Forest Plan should incorporate Executive Orders 11644 and 11989 as Forest-wide Standards

Executive Order 11644, signed by President Richard Nixon in 1972, requires federal public land agencies to designate specific areas and trail on which off-road vehicles may be allowed and where they are prohibited. The designation of specific areas and trails must consider the protection of natural resources, promote the safety of all users, and minimize conflicts among users. Public land managers are required to minimize impacts to soil, watersheds, vegetation and other public land resources and minimize the harassment of wildlife. Executive Order 11989, signed by President Carter in 1977, strengthened the earlier Executive Order by also requiring that whenever an agency head determines that off-road vehicle use will cause or is causing considerable adverse effects to the soil, vegetation, wildlife, habitat, or cultural or historic resources, these areas be closed immediately to the type of use causing the adverse effects until those effects have been eliminated and future damage is prevented.

RECOMMENDATION:

These measures be identified in the Forest Plan as Forest-wide Standards.

- b. The Draft Forest Plan Should Identify a Route Density Standard

The Draft Forest Plan should adopt guidance limiting road density to no more than 1 mile of road per square mile of land. This route density should be calculated to include all motorized routes (roads and trails) whether open or closed (e.g., all ML1-5 routes in the INFRA database and all motorized trails) and all known user-created routes, is calculated at the 6th HUC, and excludes Wilderness, Inventoried Roadless, or other areas where roads are prohibited. This would make the road density standard clear, meaningful for planning purposes, and would help the Forest Service move the forest toward the desired conditions for ecosystem resiliency, biological diversity, and long-term productivity. It would also allow the Forest Service to work within the financial realities faced now and expected over the long term.

- c. Adopt Wildland CPR's BMPs for Roads

We have attached this document as Appendix 1.

- d. Impacts from motorized uses on the forest are not adequately addressed

The Forest Service has never analyzed the impacts of the entire motorized route system for this forest.

The Draft EIS has failed to adequately disclose how much of the primitive and semi-primitive Recreation Opportunity Spectrum (ROS) classes will be lost via this Forest Plan Revision for all alternatives. The public also has no way to determine how much of these ROS classes have been lost over time via various Forest Plan Revisions or Plan Amendments. We request the Final DEIS disclose this information and provide maps showing these losses.

- e. Noise

The Draft Forest Plan should state a standard limiting use of vehicles below a decibel range of 96 to protect quiet recreation opportunities and wildlife.

Where rare plants and animals, Forest Planning species, and Forest Service sensitive species are negatively impacted by off-road vehicle use, this use should be prohibited and a Forest-wide Standard should be the mechanism for prohibiting this use. We make this recommendation because all of these same species are impacted by stressors that are out of the Forest's control (e.g., drought, climate change, stochastic events, border patrol activities) and motorized vehicle use is something the Forest Service should be managing to protect species diversity. We recommend the following as an example of a forest-wide standard: "Off-road vehicle use shall be prohibited where Forest Service sensitive species occur."

Noise standards should apply to all anthropogenic noise sources, such as air tours, motor vehicles, shooting ranges, commercial recreation areas, events, etc.

MONITORING MOTORIZED VEHICLE IMPACTS

SECTION 2: DLRMP PAGE 177 – MONITORING STRATEGY

Chapter 5, page 183, table 16:

Question Number	Questions	Scale	Possible Methods and Data Sources	Monitoring Frequency	Evaluation and Reporting Frequency
Recreation					
16	Are objectives for recreation settings and opportunities being achieved?	Forest	Miles and type of trails provided (INFRA database), NVUM (satisfaction questionnaire results)	Every 5 years	Every 5 years

As this pertains to all dispersed recreation, we find this time frame ("Every 5 years") of monitoring and reporting inadequate. The amount of potential damage to fauna, wildlife and general human enjoyment of natural settings can be irreversible in such a time frame. There is no way proper enforcement can be implemented with such a monitoring strategy.

The Forest service should:

- Provide monitoring and data assessment at least once a year.

RECOMMENDATIONS:

- Employ a realistic monitoring plan as outlined in the Travel Management Evaluation and Monitoring plan, November, 2011:

Objectives

Monitoring Questions	Driver (applicable policy, desired conditions, objective)	Measurement Frequency	Data Source	Evaluation/Reporting Frequency	Responsible person
What is the level of unauthorized motorized use? Where are there concentrations of unauthorized motorized use (aka 'hot spots')?	Compliance with MVUM map	Ongoing	LEIMARS Database – Records all incident reports Game and Fish Enforcement Database	6 months to a year.	Law enforcement/ MUCC Chair
What updates need to be made to the MVUM to correct errors?	TMR policy to re-publish MVUM each year	Ongoing	Public Input, Input from FS employees	Once a year.	GIS personnel

- In order to achieve yearly monitoring with limited employee resources, employ a rigorous volunteer monitoring and reporting strategy through better public outreach and also partnering with organizations such as the Sierra Club.

XIX. AIRCRAFT NOISE

“**Sedona Amendment 12**” (Attached as Appendix 2) should carry over into the current Plan. Sedona Amendment 12 attempts to limit the impacts of air tours, commercial aerial filming, aircraft landings, etc. The Draft Forest Plan cites Amendment 12, but the Forest Service must add soundscape monitoring using audibility and Leq measures in order to determine whether it is improving or maintaining an area’s natural soundscape. There should be a section in the Final Forest Plan dedicated to the important issue of soundscape. The Forest Plan should include discussion of aircraft and the Sedona airport, which are omitted from the Draft Forest Plan. Please explain what happened to the aircraft elements of Amendment 12 in developing and supporting the proposed Forest Plan, especially in developing alternatives. Address the 1998 Amendment 12 noise/aircraft references, and provide an update, in the Final Plan, about what has been done about aircraft noise. Is the noise more, less, or the same? Document with airport operations data and include an Adaptive Management Plan going forward.

XX. RECREATIONAL SHOOTING AND TOXIC SOIL CONTAMINATION

As the Forest Service is well aware, there are considerable toxic waste and contamination issues related to recreational target shooting and the associated illegal dumping. Unfortunately, the Forest Service has failed to adequately address this issue in the Draft Forest Plan. The only statement related to recreational target shooting is found in a Desired Condition on page 140 of the Draft Forest Plan, stating simply that “Special hunting and shooting regulations should be developed collaboratively with the AZGFD, Yavapai and Coconino County Sheriffs, and City of Sedona Police Department.” Unfortunately, this is only for the Sedona Neighborhoods Management Area.

Lead shot is a known threat, and the main threat, to the Arizona population of the California condor (DEIS at 503). Unfortunately, the Arizona Game and Fish Department has failed to regulate lead shot

despite identifying lead poisoning as a cause or suspected cause in the death of 14 condors between 1996 and 2006 (DEIS at 503). The “voluntary” lead shot program which encourages hunters to “be part of the solution by using nonlead ammunition when hunting in condor country” (DEIS at 503) does not go nearly far enough in protecting wildlife and humans from the dire consequences of lead contamination.

Recreational shooting has negative impacts to Mexican spotted owl, pronghorn, goshawk, among other wildlife, as well as humans (DEIS Vol. 1). Recreational shooting is often associated with illegal dumping of household trash, including electronics such as televisions and computers. In addition to the lead contamination associated with bullets used for target shooting, these electronics, often used as targets, contain heavy metals such as cadmium, arsenic, selenium, lithium, and mercury. These contaminants are persistent in the environment and can contaminate soil and water.

Given the way recreational shooting occurs on most National Forest Service lands, with targets that include household trash, a failure of target shooters to pick up this trash, and the heavy metal soil contamination that is associated with recreational shooting, we disagree that this type of recreational activity is suitable for Wilderness Areas, recommended wilderness areas, eligible or suitable wild and scenic river segments, urban or rural ROS, primitive ROS, or any Flagstaff Neighborwoods MAs (DEIS at 971).

RECOMMENDATION:

In order to avoid situations where soil lead levels reach toxic levels and require expensive restoration, we recommend that the Forest Service:

- 1) adopt a Forest-wide Standard that prohibits lead ammunition for target shooting;
- 2) adopt a Standard that requires hunters on Forest Service lands obtain information on the negative impacts of lead shot on California condors;
- 3) identify enforcement mechanisms for addressing illegal dumping associated with recreational target shooting;
- 4) prohibit recreational target shooting in riparian areas, near stock ponds, in wildlife corridors, in high density recreation areas, and within one mile of residential areas;
- 5) prohibit recreational shooting in areas where irresponsible target shooting and associated illegal dumping are a recurring problem and create toxic soil conditions;
- 6) identify a method for recreational shooting and adaptive management strategies to address problem areas in the monitoring section of the Draft Forest Plan;
- 7) provide the public with a clear mechanism for reporting disturbances caused by the recreational shooting activities of other forest visitors.

In addition to the toxic soil and lead contamination problems caused by recreational shooting, the Forest Service should also address how off-road vehicle use and emphasis areas are impacting soil lead levels. Recreational shooting and off-road vehicle use seem to be closely associated on the forest. Lead from recreational shooting is additive to the problem of lead weights on off-road vehicles and other high clearance vehicles which fall off and can be found in high quantities in motorized emphasis areas. These areas off-road vehicle or motorized emphasis areas need to be assessed for lead contamination and soil lead levels should be monitored.

XXI. WILDLIFE, FISH, AND PLANTS

ECOSYSTEM HEALTH AND WILDLIFE

The following two Desired Conditions apply to people/recreational use, not species or habitat. They would fit better if rewritten as Forestwide Management Approaches for Fish, Wildlife and Plants:

FW-WFP-DC-11: The forest is known for high-quality hunting and fishing opportunities. There is more emphasis, interest, and opportunity to fish for native sport fish. Nonnative sport fish and habitats are managed in locations and ways that do not pose substantial risk to native species.

FW-WFP-DC-12: Residents and visitors have ample opportunities to experience, appreciate, and learn about the forest's wildlife, fish, and plant resources.

XXII. WOLVES

Alternative C Benefits Mexican Wolves that Disperse Outside the BRWRA

The DEIS states that Mexican wolves are not allowed to establish territories outside the Blue Range Wolf Recovery Area (Forest Service 2013:495). While this statement is true for the immediate future, we emphasize that the U.S. Fish and Wildlife Service recently proposed to list the Mexican wolf as an endangered subspecies and allow the subspecies to disperse naturally from the Blue Range Wolf Recovery Area (BRWRA) into the Mexican Wolf Experimental Population Area (MWEPA) and occupy the MWEPA without the requirement to bring them back into the BRWRA (Federal Register 2013b:35722). The MWEPA includes the Coconino south of Interstate Highway 40. In addition, the current Mexican Wolf Recovery Team Science and Planning Subgroup (SPS) completed a 146-page draft of the Recovery Plan, supported by a 69-page appendix describing the modeling process used to derive recovery criteria (SPS 2013; PEER 2012). SPS scientists determined that recovery requires a minimum of three naturally connected subpopulations including BRWRA, southern Colorado and southern Utah. In any event, it is likely that the entire Coconino National Forest will soon be determined essential for the full recovery of the endangered Mexican wolf.

With that likely scenario in mind, we again support Alternative C. This alternative proposes a total of 13 wilderness areas containing habitat that would be used by wolves and their prey. This would provide 14,208 acres of habitat with reduced disturbance from motorized use and activities. In addition, Alternative C proposes eight wildlife habitat management areas, which would focus on emphasizing wildlife and restoring habitat using establishment of natural fire regimes and reduction of road densities. The Upper Clear Creek watershed along the Mogollon Rim is the closest forest habitat to the western edge of the Blue Range Recovery Area. There are five wildlife habitat management areas in the Upper Clear Creek watershed including East Clear, Hospital Ridge, Knoll Lake, Limestone Pasture, and Second Chance, and all eight are within the Mexican gray wolf MWEPA. Guidelines for wildlife habitat management areas would reduce disturbance associated with recreation and public motorized access compared to alternative A or B. This would positively impact wolves that wander outside of recovery zones by reducing disturbance impacts from recreational and motorized uses (Forest Service 2013:494-496).

XXIII. FOREST PRODUCTS

FIREWOOD

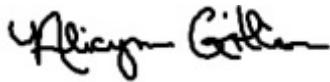
Firewood collection is discussed very briefly. It is unclear if and where there would be limitations on firewood removal for both commercial and personal use. (DEIS v3 p. 929). The Forest Service should provide size and location restrictions for gathering dead and downed firewood. The Forest Service should use downed log sizes to guide what can be taken as firewood. Restrict the removal of snags and dead and downed logs to utility corridors, wildland/urban interface areas and roadsides (i.e., within 0.10 mile of roads). To the extent possible, exclude firewood removal from PACs and PFAs.

XXIV. SNOWMAKING

Finally, nowhere in this plan is snowmaking ever mentioned, nor its effects on the rare alpine tundra ecosystem, the federally listed endangered San Francisco Peaks Ragwort, a Traditional Cultural Property, or our future water supply, both quantity and quality. It is incredulous that the Forest Service neglects to create a policy in this Forest Plan to address the subject of one of the most contentious public debates and legal battles that this National Forest has ever encountered.

The Forest Service should be prepared for future requests for snowmaking permits, using either fresh or reclaimed water. This Forest Plan revision process is the place to create a policy on snowmaking, and due to the limited water resources in our region, climate projections for a dryer Southwest, and determinations that the City of Flagstaff and State of Arizona water demands will outstrip supplies before 2050, the Forest Plan should declare snowmaking to be an incompatible use on the Coconino National Forest.

Sincerely,



Alicyn Gitlin, Conservation Coordinator
Sierra Club Grand Canyon Chapter



Jay Lininger, Senior Scientist
Center for Biological Diversity



Katherine Davis, Public Lands Campaigner
Center for Biological Diversity

\s\

Bryan Bird, Wild Places Program Director
WildEarth Guardians



Marilyn J. Weissman, President
Friends of Flagstaff's Future



Moran Henn, Director
Friends of Flagstaff's Future

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Sarah King, Chair
Arizona Ecumenical Council Earth Care Commission

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Ilona Anderson
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Ursula Wallentine
Co-chairs, Flagstaff Broadband, Great Old Broads for Wilderness

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Shelley Silbert, Executive Director
National Office, Great Old Broads for Wilderness

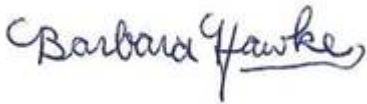
\s\
Matthew Crozier, Conservation Chair
Northern Arizona Audubon Society



Rev. Doug Bland, Executive Director
Arizona Interfaith Power and Light
Kelly Burke, Executive Director

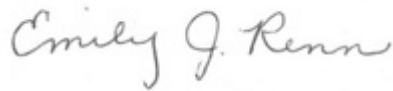


Grand Canyon Wildlands Council



Barbara Hawke, Executive Director
Arizona Wilderness Coalition

\s\
Daniel Patterson
Public Employees for Environmental Responsibility



Emily J. Renn, Program Director
Grand Canyon Wolf Recovery Project

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