Data Submitted (UTC 11): 8/11/2016 12:00:00 AM
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Title: Habitat, Evaluation, and Lands Branch Chief
Comments: August 11, 2016

Comments sent via email: 4FRI cclmments@fs.fed.us and U.S. Mail:
Coconino National Forest
Attn: Annette Fredette, 4FRI Planning Coordinator
1824 S. Thompson Street
Flagstaff, Arizona 86001

RE: Public Scoping for 4FRI Rim Country Project Proposed Action

Dear Ms. Fredette:

The Arizona Game and Fish Department (Department) appreciates the opportunity to work collaboratively with the United States Forest Service (USFS) as a cooperating agency on the Rim Country Environmental Impact Statement (EIS) for the Four Forest Restoration Initiative (4FRI) Rim Country Project (Project). The 4FRI Project has the potential to benefit Arizona's terrestrial and aquatic wildlife resources, as well as the people who use and value those resources. The
Department looks forward to continued cooperation to make this landscape-scale project successful from planning to implementation, and provides the following comments on the Rim Country Proposed Action (PA).

General
The EIS is being developed through a diverse, multi-partner, multi-agency stakeholder group (SHG). The Department requests the USFS outline the collaboration and partnership of the SHG within the EIS as well as the Department's role as cooperating agency, member of the SHG, and Project Core Team.

The Department requests monitoring and adaptive management be included as essential components within the PA. Monitoring of terrestrial and aquatic wildlife and their habitat is necessary for determining if restoration activities are effective, and that treatments are managed adaptively to avoid and/or minimize the potential for negative impacts to species and/or the
habitats. Aquatic habitat monitoring is particularly critical to ensure thinning and burning are not resulting in long-term negative impacts to watershed health. The Department has developed and implemented stream habitat monitoring techniques within the project area and would like to partner with USFS to continue to implement the appropriate monitoring techniques, as was done
in the first 4FRI EIS with the multi-party monitoring board. The Department considers monitoring and adaptive management critical aspects of success for landscape scale restoration, and requests that the USFS continue engagement with the Department and the SHG to ensure these elements are appropriately incorporated and implemented.

The large tree and old tree implementation plans (LTIP/OTIP) were a product of discussions during the development of the first 4FRI EIS. The Department believes the Rim Country PA does not sufficiently emphasize the importance of these plans. The Department understands that the vegetative communities are more complex within the Project than those within the first 4FRI EIS, and that the criteria for preponderance of large young trees (PLYT) and high canopyclosure patches within the Project would be defined in close collaboration with the SHG. However, the Department requests that the EIS provide greater clarity with respect to application of the LTIP/OTIP, and place more emphasis on the wildlife value of presettlement and old growth trees.

Issues of clarity and consistency
(throughout) Will and would are used interchangeably for proposed actions. The use of "will" is perceived as predecisional; suggest use of "would" instead.

(throughout) Lack of definition of scale is an issue throughout the PA. For example, Table 7 (p 11) provides desired conditions, but does not indicate the scale for average basal area for cover types.

(throughout) Define cover types for clarity. The Department is specifically interested in definitions of grassland, savanna, meadow, wet meadow, and wetlands. We also requests that dry meadow be included and defined.

(p 3, paragraph 2) The purpose statement focuses on ponderosa pine, and does not mention other forest cover/habitat types present in the project area, even though they cover a broad area. Broaden appropriately.

(p 3, paragraph 3, under Forest Resiliency and Sustainability) The analysis area includes wet mixed-conifer with longer fire-return intervals; we request that this be addressed here as well.

(p. 3, paragraph 5) Savannah cover types have likewise been affected by woody encroachment.

(p. 3 paragraph 4, last sentence) It is unclear what species is referred to by " ... variety of shapes and sizes of trees ... "

(p. 4, paragraph 3) "structure" is listed twice in item (2).

(p. 4, paragraph 3, and p. 24) Under facilitative operations on non-target cover types, the Department believes that to restore ecosystem function within the project area, treatments of non-target cover types should be implemented to maintain desired conditions or move these cover types toward desired conditions. These non-target cover types are contributing to undesirable fire effects, degraded terrestrial and aquatic species habitat, and degraded condition and function of streams and springs within the project area. To exclude these cover types would prevent a comprehensive effort at restoration of ecosystem functions. Furthermore, these facilitative operations may require mechanical treatment, not solely fire.

(p. 5) Wet meadows are mentioned only under the Purpose and Need for Streams and Springs. Wet meadows are an integral component of a functioning headwater system. The Department requests that wet meadows are specifically considered under Desired Conditions and Proposed
Treatments for aquatic habitats.

(p. 5, paragraph 2) The Department requests clarification as to the need to include road decommissioning in the Project, and how the Project would be used to implement Travel Management Rule (TMR) decisions. The PA states there is a need to decommission unneeded routes identified during TMR, however, the PA later (p. 14) gives mileages of roads to be decommissioned for Apache-Sitgreaves National Forests, which have not yet finished TMR. Please provide more information and clarification as to the need and ability for the USFS to make changes to the transportation network outside of TMR.

(p. 6, Table 1) The Project analysis area includes >100,000 acres of juniper and pinyon-juniper woodland. Are these within the natural range of variability and meeting desired conditions? If not, why are they excluded from treatment?
(p. 8) Savannah types are mentioned in the text, but not included in summary tables.

(p. 8, paragraph 4) It is not clear what the percentages of historic incidence of dwarf mistletoe refer to (i.e., infected acreage, stands, or other geographic units?).

(pp. 8, 11, 14) Provide criteria for areas classified as being "understocked," and how this fits with overall restoration goals.

(p. 9) Define Regional Forester Sensitive species.

(p. 11 paragraph 3) Clarify circumstances for which planting would be necessary to meet desired conditions and restoration objections.

(pp. 11 - 12) Historically, some areas infected by dwarf mistletoe received intense silvicultural treatments (e.g., "sanitation") that were controversial and compromised aesthetics and wildlife habitat values. Restoration treatments should be done in consideration of the natural incidence of mistletoe and its value to wildlife and habitat. The Department requests that the scale and intensity of mistletoe treatments be more clearly defined. The statement that mitigations will be considered "where more than 20% of ponderosa pine trees or an aggregate of mixed conifer host species are infected" has little meaning without a reference to scale. The same comment applies to the Mechanical Treatment table (p. 24) where the 20% threshold is mentioned again; this may be a very low threshold in areas of low host species diversity. Please clarify or revise to address the discrepancy under differing circumstances.

(pp. 16 - 19, Figures 3 - 6) The figures provided by the PA are lacking in context and detail. Given the scale of the Project, we request that USFS publish figures online and include topographic features, so there will be sufficient detail for the public to comment in a meaningful and effective manner.

(p. 24) Under Weed and Release, reference is made to thinning where brush, juniper, and evergreen oak species are greater than 40% of the cover. The Department requests clarification on the scale and science/management basis for this number, and that the EIS address the following questions and concerns. Does this proposed thinning only apply to evergreen oaks,and not other oak species? Would this apply only below the Mogollon Rim where evergreen oaks are abundant? The Department requests USFS provide a map of the areas that would be targeted for oak thinning. We anticipate discussions with the ID team to ensure we work towards mutual goals of fuel reduction and wildlife habitat management, given the importance of oaks (including patches of young oak, in some cases) for wildlife.

(p. 24) Even-aged shelterwood is a silvicultural system for sustained-yield and of uncertain relevance in a restoration context. The Department requests clarification as to its use and relevance in the Project. There is also a reference to the LTIP/OTIP here, which seems out of context especially given that this is the only reference to these plans within the PA.

Stronger emphasis on aquatic habitat restoration
In contrast to the first 4FRI EIS project area, the Rim Country project area contains an extensive aquatic environment. Riparian, wetland, and spring habitats are common in the project area and of tremendous importance to terrestrial and aquatic wildlife. The Department supports active improvement and restoration of these areas, but we are eoncemed that the PA does not sufficiently emphasize the aquatic restoration opportunities available. The aquatic treatments are confusing and lacking detail on proposed actions and locations. The Department has the following general and specific comments regarding aquatic habitat restoration.

{{pp. 14 and 26) Define the difference between "riparian stream and stream channel restoration" and "stream habitat restoration." Does this distinction imply perennial versus ephemeral streams?

The Department has concerns with the method and accuracy of how riparian habitat was categorized. The "Stream Habitat and Stream Channel" restoration map provided to the Department upon request contains inaccuracies in classifications of streams. The PA does not explain how the 360 miles of stream habitat and 470 miles of non-riparian stream channels were identified. Please provide explanation of stream categorization. The

Department would like to
provide our expertise on the intermittent, ephemeral, and perennial nature of streams identified within the project area, but is unable to provide comment on the listed mileages without further explanation on methodology and a list of streams and their categories. We fully support the inclusion of restoring function to ephemeral and intermittent stream channels as outlined in the
proposed action, and have attached a list of perennial streams (Attachment 1) that we are specifically requesting be included under stream restoration; this list was generated from an Arizona Department of Environmental Quality perennial stream layer. The USFS should consider the streams as the Department's priorities for stream habitat restoration within the Project. The Department requests that all of these streams and reaches be included, and used to calculate the stream restoration mileage.

To clarify and simplify stream restoration treatments and locations, the Department requests that the two riparian restoration types identified by the PA be combined into one single restoration type, termed "stream habitat restoration." Per that request, we suggest the following two paragraphs be included under the PA's Purpose and Need to further clarify what constitutes
stream habitat restoration within the project area:

"Inclusion of stream habitat restoration projects in the project area is an integral part of restoring forest resiliency and ecosystem function. To return streams to functioning condition,incorporation of artificial structures is often the most effective method. High severity wildfire has been shown to negatively impact aquatic habitats and surrounding riparian vegetation and
has resulted in decreased habitat complexity, increased water temperatures, and sedimentation, all of which contribute to overall declines in water quality and quantity. Enhancing and restoring aquatic habitat and riparian vegetation would promote the biodiversity of wildlife that inhabit the stream or utilize associated habitats. Incorporation of physical instream structures into broader watershed restoration will improve the overall efficacy of these ecosystem level
treatments."

"Stream habitat restoration projects in the project area should include instream habitat restoration to improve aquatic species habitat through inclusion of physical structures that would improve habitat heterogeneity." (see Attachment 2, a list of stream habitat restoration activities).

(throughout, but specifically pp. 4-5; p. 9, paragraph 4; p. 12, last paragraph) Aquatic habitat restoration under the Project would restore function and provide benefit to all aquatic species. The Department therefore requests that the PA remove adjectives that specify that restoration would benefit "sensitive" or "protected" aquatic species; and broaden the benefits of aquatic habitat restoration to include all "aquatic species."

(p.5, under Streams and Springs) In some circumstances, barriers are more effective than stream crossings for management activities. The Department requests the USFS work with the Department collaboratively to determine the need for fish passages for specific roads. We request that the sentence be changed to "Reducing road density and improving road and stream crossings (where desirable, and in conjunction with Department management objectives) would maintain natural flow regimes ... "

(p. 5, under Streams and Springs) The Department requests inclusion of the sentence: "Instream habitat improvement also stabilizes streamside areas and restores functioning condition in the watershed by decreasing sediment mobilization, maintaining riparian vegetation, and increasing habitat complexity."

(p. 7, paragraph 1) Define the methods for the fire model used within the project area.

(p.14, last bullet) Change to "Construct up to 200 miles of protective barriers (including jack straw barriers and fencing) around springs, aspen, Bebb's willows, and big-toothed maples, as needed for restoration."

(p. 26, under Spring Restoration, Riparian Stream and Stream Channel Restoration, and Stream Habitat Restoration) Please provide more detail on proposed restoration activities for aquatic systems and potential "tools in the toolbox." See Attachment 2 for suggested activities for stream habitat restoration.

(p. 26, under Stream Habitat Restoration) Potential structures for stream channel restoration are listed in Attachment 2. Structures would be designed for each stream restoration project to improve the condition of the stream and stabilize the watershed, improving water quality and potentially improving water quantity through reconnection of the stream with the floodplain.

(p. 26, under Design Features) For aquatic species, the Department would like the EIS to emphasize the following general recommendations to improve aquatic habitat: retain large conifers and/or hardwood trees in riparian corridors; remove encroaching conifers from headwater meadows; and maintain existing/construct new exclosures where ungulate impacts are excessive to restore flow and protect aquatic habitat.

(p. 26, under Design Features) To protect watershed health in riparian areas as well as the Rim lakes, which are recreationally and economically important, we request that mutually agreed upon Best :Management Practices (B:MPs) be developed and implemented before and during treatments, including but not limited to projects that control erosion, minimize soil and ash outputs, and protect riparian areas from siltation during and after mechanical and burn
treatments. Refer to the Department's Preliminary Existing Conditions and Habitat Recommendations for the 4FRI Rim Country EIS (Attachment 3), provided to the 4FRI core team in June 2016 for suggested BMPs to protect watershed health.

Broadening of the wildlife focus
The PA adequately addresses appropriate treatments for Mexican spotted owl (MSO) and northern goshawk (NOGO). However, we request that the EIS include treatments that create desired conditions for a broader range of wildlife species, not just sensitive or federally protected species. There is no single forest state that maximizes habitat value for all wildlife species, so habitat restoration needs to incorporate spatial heterogeneity, while also considering the requirements of federally protected species. The varying habitat requirements of different species underscores the need for forest restoration practices that are implemented at a site specific scale, but applied to the landscape, to improve wildlife populations across the project area. Please refer to Attachment 3 for the Department's specific desired conditions for wildlife habitat based on species distributed within the project area.

The Department requests that the uneven-aged group selection (p. 23) to include additional techniques to protect and improve wildlife habitat components, including:
* Protect and promote development of large Gamble oak and other hardwood species
* Ensure retention of snags and downed logs
* Retain poorly formed, dead-topped, and lightning struck trees

The Department requests that mutually agreed upon BMPs (i.e., timing restrictions) are developed and implemented before and during treatments to minimize negative impacts to terrestrial wildlife from treatments.

Improving wildlife movement across the landscape
The Department has identified several activities not included in the PA that would improve or restore wildlife connectivity, movement, and distribution across the landscape. These include creating movement corridors for open canopy species, wildlife water developments or redevelopments, and fence construction or modifications.

The Department is pleased with the inclusion of grassland and meadow restoration in the PA, which would benefit pronghorn and other grassland-associated wildlife species. To restore functionality to grasslands and meadows, we anticipate that there may be a need to ensure connectivity between existing grasslands and

meadows. The Department supports the need to retain old and large trees and high-canopy patches, and acknowledges that there will be further discussion within the SHG to collaboratively identify the most accurate parameters for identifying the PL YT areas and the management techniques that will be appropriate therein. However, the Department requests flexibility within PL YT areas to restore intermontane meadow connectivity. As we did during the first 4FRI EIS, the Department will work with the 4FRI core team to identify meadows and grasslands that may require conifer removal, as well as
potential corridors that may require thinning to facilitate movement among intermontane meadows and grasslands. Although this flexibility would allow a more intensive treatment in certain PL YT areas, the Department is not requesting an exception to remove old growth trees.

There is a need for up to 36 wildlife water developments or redevelopments within the project area to provide reliable and permanent sources of water in an even distribution across the landscape (Attachment 4). Existing waters in need of redevelopment (n=33) include USFS and Department waters. Examples of potential improvements include the need for creation of an apron, cleaning following sedimentation, damage repair following wildfire, restoring function to
old, dilapidated waters, adjustments that improve access for wildlife, and improvements that bring the existing water up to the Department's Wildlife Water Construction Standards. Some waters that provide important amphibian habitat may require fencing to exclude livestock, or require restoration following livestock exclusion. New waters can create a more even
distribution of wildlife across the landscape and reduce grazing pressure in high use areas. These new waters may be located in areas of importance for particular species or strategically placed to protect habitats of interest from native and nonnative ungulates. Additionally, in areas of aspen
recruitment, waters can be placed to strategically pull elk away and facilitate further aspen recruitment. For new and existing wildlife water projects, the Department may have funding or may be interested in partnering with the FS for funding opportunities.

There is a need for up to 10 fence constructions or modifications that have been identified within the project area (Attachment 5). New fence projects are needed to exclude livestock and native ungulates from sensitive areas. Fence modifications (i.e., making improvements using the Department's Wildlife Compatible Fencing guidelines) have been identified in the project area to
facilitate wildlife movement. These fence modifications will improve landscape permeability for elk, deer, and pronghorn, and in some cases are specific to known spring and fall pronghorn migration, an important ecological component of the ponderosa pine ecosystem. The Department may have funding for such projects, or may be interested in partnering with the FS to seek funding opportunities.

In conclusion, the Department expresses its strong support for the collaborative process being implemented by the 4FRI Project, a one-of-a-kind effort to restore function and resiliency of Arizona's forests, with considerable benefits to terrestrial and aquatic wildlife. We look forward
to our continued partnership with USFS on the Rim Country Project.

Sincerely,

Joyce Francis
Habitat, Evaluation, and Lands Branch Chief