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Dear Mr. Schulke:

On behalf of the Apache-Sitgreaves, Coconino, and Tonto National Forests, I would like to thank you for your involvement in the 4FRI Rim Country Project. This letter is in response to the objection you filed on the Final Environmental Impact Statement (EIS) and draft Record of Decision (ROD). I have read your objection, reviewed the project record and Final EIS, including the environmental effects. My review of your objection was conducted in accordance with the administrative review procedures found at 36 CFR 218, Subparts A and B.

The legal notice for the objection filing period was published on March 18, 2022. Your timely objection (22-03-00-0006-O218) was received on May 2, 2022 and was considered pursuant to the regulations at 36 CFR 218. With the letter you received to acknowledge your objection, dated May 12, 2022, I notified you that I would be extending the review timeframe. This allowed us the opportunity to meet in an objection resolution meeting on July 6, 2022 in order to discuss issues you raised in your objection. We discussed your concerns related to the Strategic Treatments for Fire Use Alternative, including the need to optimize treatments within the 4FRI project area and integration of mechanical and prescribed burning treatments (see Contention 3a for more discussion); the Mexican Spotted Owl Leadership Forum and recommitting to collaboration in this effort; and, Inventoried Roadless Areas (IRAs) and treatments within these areas on steep slopes. This letter, including direction to the Responsible Officials to clarify some information in the project record, is my written response to your objections. The “Contention” labels are summaries of your objection concerns while the “Response” labels are our response to those contentions.

ISSUE 1: The Rim Country Project’s site-specific impacts.

Contention 1a: NEPA’s procedural safeguards are designed to guarantee that the public receives accurate site-specific information regarding the impacts of an agency’s project level decision before the agency approves the decision. Analyzing and disclosing site-specific impacts is critical because where (and when and how) activities occur on a landscape strongly determines that nature of the impact. Location data is critical to the site-specific analysis NEPA requires. Merely disclosing the existence of particular geographic or biological features is inadequate. Although NEPA requires that analysis disclose specific information about the when, where, and how of any agency action, so that the impacts and alternatives can be described and weighed, the FEIS fails to contain much of this data or analysis. Instead, the Forest Service postpones site-



specific project design and consideration of on-the-ground impacts until after the NEPA process is complete. The Forest Service admits that “condition-based management,” the very process held illegal in Southeast Alaska Conservation Council, “is being used for mechanical treatments (and prescribed fire), and aquatics and watershed restoration activities” for the Rim Country Project. The Forest Service seems to justify condition-based management on the grounds that the project area is simply too large to be evaluated in a timely manner, and so it is impossible to gather the site-specific information for the entire area that NEPA otherwise would demand. But agencies must obtain the information or provide justification for failing to do so. Before approving effective restoration activities, the agency must undertake a site-specific analysis pursuant to NEPA. This type of analysis cannot be postponed until after the NEPA process is complete, and the public can no longer comment or seek judicial relief when the agency ignores public comment. The law requires that this analysis occur up front. The public apparently has no role in this process, despite NEPA’s mandate that the public have a role in evaluating projects, their impacts, and alternatives. The Forest Service will only identify “appropriate treatments during implementation,” and site-specific information will only be gathered via “[p]re-implementation surveys,” which could occur a decade or more after the agency’s decision, which “will determine site-specific cover and habitat types and current conditions.” (FEIS, p. 40). Flow charts and checklists are not a replacement for disclosing location-specific values and disclosing how those values will be degraded (or improved) by agency action. [Objection, pp. 3-7, 11-18]

Response: Following the condition-based management (CBM) approach, the Rim Country Project does not detail which specific treatment would occur on each acre of land within the project area. However, the project interdisciplinary team developed and analyzed 15 different treatment types, which are displayed on table of 15 of the FEIS with different treatment types as well as descriptions of other activities [PR 686, pp. 43-63] that are depicted spatially on static maps [PR 687, maps following p. 241] and on an interactive story map [PR 699]. Approximate acreages for treatment types that would be completed over the life of the project are provided in the FEIS [PR 686, pp. 56-62]. A combination of stand exam data and GIS layers were used to identify stand characteristics that were used in the process of assigning treatments described in the FEIS [PR 688, p. 197]. The conditions and process under which these treatments would be applied to specific areas are described in detail in the implementation plan [PR 687, pp. 313-383].

To support site-specific effects analyses, stand exam data that has been collected on approximately 28 percent of analysis acres in the project area were used to conduct a Nearest Neighbor analysis in FSveg software, which imputed data for the remainder of the analysis acres. The stand exam data were then modeled using the Forest Vegetation Simulator (FVS) to describe current stand conditions, the need for change, and appropriate treatments based on the project’s purpose and need. FVS was also used to simulate cutting and prescribed burning treatments, and estimate structural metrics such as density following treatment, for each alternative up to the year 2049. Each data set was grouped by current forest type, site class, stand structure, and treatment type. Simulations were developed for each treatment based on Land Management Plan desired conditions, relevant recovery plans, soils, threatened and endangered species (TES), and considerations concerning other resources. Vegetation and fuels attributes, including tree density (trees per acre, basal area and stand density index) by species or species groups and diameter size class, dwarf mistletoe infection, insect hazard, cubic feet of biomass removed, canopy base height and bulk density, live and dead surface fuel loading, live and dead

standing wood, coarse woody debris, and snags, were computed for each growth cycle. These attributes were then averaged for all the data sets represented in the simulation and compiled into an “effects” database [PR 680, pp. 51-53].

These stand data were used by specialists to analyze the direct and indirect effects of implementing the different proposed treatments and activities to resources including vegetation [PR 680, pp. 51-53]; wildlife, including Mexican spotted owl (MSO) [PR 686, for MSO, see methodology description pp. 287-290, and effects analysis, which documents various effects of different treatments to specific areas of habitat type, pp. 291-324]; fire ecology [PR 686, see methodology description at pp. 218-221, which describes analysis occurring at the HUC 6 watershed level as well as using location-specific data such as stand data]; and air quality [PR 660, pp. 50-51]. Further, to ensure that the acreage and intensity of implemented treatments are within the scope of the effects analysis in the EIS, the EIS includes a tracking system that would track proposed treatments from planning through implementation [PR 687, p. 326; PR 688, p. 243].

While the analysis made the general assumption that each specific treatment would be implemented toward the lower end of the target basal area range for that treatment [PR 686, p. 94], distinctions in effects to specific resources were still made based on alternative and type of treatment (see, for example, modeling of fire hazard index, which is summarized at the HUC 6 watershed level) [PR 686, figure 65 on p. 225 for Alternative 1, figure 70 on p. 237 for Alternative 2, and figure 75 on p. 243 for Alternative 3]. This yields an analysis that is reasonably site-specific, particularly given the scale of the project, that goes beyond a simple worst-case analysis and supports a “hard look” at effects and an informed decision, as required by NEPA.

CBM allows for proposed treatments to be aligned—post-decision but prior to implementation—with current conditions on the ground. Using CBM, proposed treatments are developed based on mid-scale and site-specific data on current conditions. Prior to implementation, current conditions are confirmed through field survey in specific locations and appropriate management activities are assigned. CBM is appropriate when site conditions are dynamic and unpredictable due to known environmental stressors; when project implementation may span a long period of time; or when additional surveys may be needed before implementation to confirm conditions at the time of implementation. CBM is a method to meet NEPA’s requirements, not to avoid or shortcut them [PR 723, pp. 1-2].

As stated in the project record, the Rim Country EIS uses a CBM approach because (1) the diversity of landscapes and size of the project contribute to dynamic and variable conditions, with processes such as fire, insects, encroachment, and competition resulting in a changing environment; (2) project implementation is expected to span 20 or more years; and (3) it is not feasible to have completely up-to-date information about current conditions on every acre of the project area, which encompasses approximately one million acres [PR 646, p. 4].

NEPA’s “twin aims” are to ensure that an agency informs the public of a proposed action and considers environmental concerns in its decision-making process. In the Rim Country Project, the Forest Service has worked closely with the 4FRI Stakeholder Group (SHG) to develop the condition-based management process collaboratively [PR 688, pp. 191, 198]. Throughout the

planning process, the Forest Service has been transparent about the use of CBM and provided opportunity for public comment on this approach. The proposed action provided for public review during scoping identified a “toolbox” approach for implementing treatments [PR 76, pp. 21-22] and acknowledged that, “we do not have complete information on the conditions found on every acre, but we do have enough data to make an informed decision about what types of treatments... would work best in certain conditions” [PR 76, p. 21]. The DEIS that was made available for public review and comment included a “Flexible Toolbox Approach” (FTA; essentially condition-based management) [PR 315, p. 30; PR 312, pp. 599-661] and included maps of different types of treatments [PR 309, pp. 530-534]. The FTA process was renamed CBM in the FEIS [PR 686, p. 31] and the process was clarified in the FEIS based on public comment to make it more predictable, reliable, and repeatable [PR 688, pp. 187-195, 197, 202, 235, 237; see updated implementation plan at PR 687, pp. 313-383]. Further, the FEIS clarifies that stakeholder involvement will continue during project implementation under the CBM framework [PR 688, pp. 186-187].

The record clearly demonstrates that, throughout the planning process, the Forest Service was transparent about the use of CBM and, in accordance with NEPA, provided ample opportunity for the public to comment on the CBM approach and resulting effects. The Forest Service was responsive to public comment on CBM and made corresponding updates to project documents, and the agency demonstrates a continued commitment to a collaborative approach during project implementation.

Contention 1b: The FEIS does not define, or contain an analysis of, site-specific actions, and states that site-specific actions will not be defined until after the public NEPA process is complete. The agency’s perceived “need” to put off site-specific review until after approving the project is apparently driven in part by the Forest Service’s lack of common stand exam data for about 72% of the project area. The Forest Service does not explain why it could not undertake stand exams before or as part of the NEPA process. [Objection, pp. 12-13, 21]

Response: Please also refer to response to Contention 1a.

The Silviculture Report demonstrates the project’s site-specific analysis, inventory sampling strategy and analysis assumptions. The project incorporates sampling using common stand exams and nearest neighbor modeling. This modeling provided wall to wall current conditions and project-wide site-specific alternative analysis. The Silviculture Report says, “While the intent of 4FRI is to restore composition, structure and pattern at the landscape scale, individual treatments are applied at the stand scale” . . . “Figures in this report demonstrate how these changes at smaller scales sum up to a considerable change at larger scales” [PR 680, pp. 105].

The Silviculture Report also states, “Approximately 28 percent of analysis acres have stand exam data and the Nearest Neighbor analysis was used to impute data for the remainder of the analysis acres” [PR 680, p. 51] The Report explains how Nearest Neighbor (MSN) works, “Tree data from the ‘Reference Stand’ is then imputed to the ‘Child Stand’. The quality of MSN imputations is controlled by the extent to which the sample of reference observations covers” [PR 680, p. 51]. It is not required to have all the stands sampled in a project analysis. Stands were aggregated into strata of similar conditions and the stand exam data was used to model current treatment alternatives. This is typical for natural resources sampling of large landscape

areas. Common stand exam sampling needs to be operationally and economically feasible. A large-scale sampling coverage for the project is not necessary with the use of the nearest neighbor tool. Using this approach, stands with similar characteristics are grouped into stratum types that can be managed with similar treatment prescriptions. The analysis represents 100% of project stands grouped within forest stratum types. Forest stratum types are mapped, described, and displayed by stratum (site) specific treatment types [PR 686, pp. 58-59; PR 680, pp. 61, 134-155].

Contention 1c: For watershed restoration components of the project, the Forest Service proposes to wait after NEPA compliance is complete to gather “key information” via “site reconnaissance,” to “assess and inventory” values of streams and riparian areas, then to “assess ... consequences” of potential restoration, and then describe and assess the “impacts of all options,” including an evaluation of “options, costs and benefits,” that includes considering “the consequences of taking no action.” (FEIS, pp. 343-44, 346-47). If the Forest Service can “vary the extent, type, or intensity of treatments,” the EIS cannot disclose the impacts of treatments whose extent, location, and timing are not defined. [Objection, pp. 13-14, 21]

Response: Similar to vegetation treatments, the Rim Country Project applies a condition-based management approach to assigning aquatic and watershed restoration treatments. However, site-specific considerations led to the proposed watershed treatment areas identified in the FEIS: “areas for potential aquatic and riparian restoration were identified using Riparian Mapping (RMAP) layers and information from the Terrestrial Ecological Unit Inventory (TEUI). The TEUI is a system to classify ecosystem types and map ecological units at different spatial scales. Streams that have been identified as candidate areas for stream restoration were identified spatially using factors that promote successful treatments and project design features. It was determined that most restoration techniques are more successful in lower gradient streams. In addition, many of the low gradient areas are those that have been impacted and are in need of restoration. Stream gradient was mapped using LiDAR data and averaged within reaches. Reaches based on Rosgen stream types with low (0-2 percent) and moderate (2-4 percent) stream gradient are identified for general stream treatment. A subset of those stream restoration areas where there is the potential to use large machinery were further identified as heavy mechanical treatment areas. These were identified by the ability of machinery to access locations and design features (slope restriction). Reaches with canyon slopes more than 25 percent and further than 0.25 miles from roads were excluded from the heavy mechanical subset. In areas where restoration is needed for issues such as conifer encroachment within riparian areas, prescribed fire may be the preferred restoration method and are identified” [PR 687, pp. 338-339]. Treatments are depicted spatially on static maps [PR 687, maps following p. 241] and on an interactive story map [PR 699].

The FEIS then provides an extensive description of the process that would be used to assign specific project proposals for aquatic and watershed restoration activities [PR 687, pp. 338-360] and lists specific aquatic restoration priorities [PR 687, pp. 386-390]. Design features, best management practices, mitigation, and conservation measures, many of which are related to watershed protection, are required to minimize or avoid effects [PR 687, pp. 261-311].

The effects of watershed restoration activities are analyzed and disclosed throughout Chapter 3 of the FEIS, including to water and riparian areas [PR 686, pp. 111-124] and soils and watershed

[PR 686, pp. 126-143]. This approach yields an analysis that is reasonably site-specific, particularly given the scale of the project, that supports a “hard look” at effects and an informed decision, as required by NEPA.

Contention 1d: In some cases the EIS does not fully define the entire menu of treatments the agency could apply. The FEIS purports to disclose the impacts of treatments on aspen stands without defining what those treatments might be. This is arbitrary and capricious. Some treatments, even when “defined,” grant the Forest Service so much discretion that the impacts on the ground could vary widely. For example, in the wildland urban interface, “the flexibility is given for more open treatments that will result in post-treatment stand densities between 30-60 ft²/acre of basal area.” (FEIS, p. 31). The bottom end of that range, 30 ft²/acre, is akin to a clearcut; 60 ft²/acre is a stand twice as dense. Choosing the bottom end of the range or the top would have significant differences in terms of the ultimate impacts. But the EIS doesn’t evaluate these differences or identify where the Forest Service would apply the lower or upper end of the range. Proposals to manage stands infected with dwarf mistletoe suffer from the same vagueness and lack of clarity concerning the specific nature of treatments that could be applied. The EIS indicates that heavily infected stands might be managed as stands without severe infection, or mechanical treatment might be deferred, or they might be managed differently from stands with less mistletoe. Given this imprecision, the Forest Service cannot effectively evaluate the impacts of its proposal to manage for mistletoe, because the agency does not know how these stands will be managed at a specific location. [Objection, pp. 14-15, 21]

Response: This response is divided into discussion of the menu of treatments, treatments in aspen stands, evaluation of treatment ranges, and mistletoe treatments.

Menu of treatments: The FEIS adequately defines treatments which can be viewed in the FEIS Volume 1, Table 25, which is the comparison of alternatives, and comprehensive restoration treatments defined on pages 48-51 [PR 686, pp. 43-44, 48-51]. The acres identified in this table were analyzed to the lower end of the proposed density range. The condition-based strategy would instruct implementers to increase stand level densities for certain ecological values which will indirectly increase the density levels across the landscape. The following identifies some of the work with stakeholders with the condition-based management approach: adding the aquatic-upland integration requirement; developing a process for treatment allocation and tracking; adding clarity to the treatment assignment process; adding additional scientific support for decision parameters; creating fixed ceilings on acreage totals reiterated by intensity and tracking descriptions in the implementation plan; outlining mechanisms for change in treatment intensity; ensuring that the condition-based management approach is predictable, reliable, and repeatable; conducting all treatments within the scope of the analysis; and, ensuring that the right treatment is placed in the right area [PR 626, pp. 9-10]. Conditions on the ground are dynamic and unpredictable, standard NEPA treatment identification would not allow for the ability to ensure treatments are appropriate at the time of implementation [PR 688, p. 198]. The FEIS defines increased density retention prescriptions for uneven-aged management and stand improvement treatments. FEIS Volume 2 Table D-2 [PR 687, p. 335] demonstrates the density ranges for the condition-based management approach.

Treatments in aspen stands: Per 36 CFR 218.8(c), issues raised in objections must have been submitted with previous specific written comments related to the proposed project unless based

on new information. The IDT did not receive any comments directly related to this issue during an opportunity for comment to establish standing or demonstration of how this issue constitutes new information.

Evaluation of treatment ranges: Forests will be able to implement treatments as outlined in the decision with effects that are commensurate with or to a lesser degree than what was analyzed. These calls are made by foresters or line officers during walk through assessments. Stand assessments entails looking closely at every stand to adequately apply design features, mitigation measures and to determine if the treatment makes sense from an implementation perspective. The Rim Country vegetative analysis was conducted toward the lower end of the density ranges and discloses this strategy in the following, “For the action alternatives, the Rim Country FEIS includes analysis of the potential direct, indirect, and cumulative effects from treating the number of acres proposed for each specific treatment toward the lower end of the target basal area range for that treatment . . . This level of examination is done to ensure that the maximum potential effects from the activities proposed in each action alternative are analyzed, even though it may give the appearance of more pronounced effects than expected. A stand treatment adjusted to a lower intensity during implementation, per the condition-based management approach used for this project” [PR 686, p. 94]. Other resource analyses in the FEIS were conducted using stand data; see response to Contention 1a.

You highlight WUI treatments, which would result in post-treatment stand densities of 30-60 ft²/ac of basal area [PR 687, p. 331], as an example of a range of possible treatment intensities that precludes meaningful analysis. The FEIS specifies that, under the CBM process, on-the-ground conditions would be assessed to assign the appropriate type and intensity of treatment [PR 687, p. 325]. Specifically, in WUI areas, “the current condition of each of these areas will be field reviewed prior to implementation by an interdisciplinary team of resource specialists, to determine what type and level of mechanical treatment is needed to protect the values at risk” [PR 687, p. 331], suggesting that treatments would not be arbitrarily assigned within the allowable range. This treatment range is consistent with the Coconino Land Management Plan (desired conditions for ponderosa pine are 22-89 ft²/acre basal area and dry mixed conifer are 30-100 ft²/acre [PR 225, pp. 61, 67]), Apache-Sitgreaves Land Management Plan (desired conditions for ponderosa pine are 20-80 ft²/acre basal area and dry mixed conifer are 30-100 ft²/acre [PR 40, pp. 41, 44]), and proposed amendment to the Tonto Land Management Plan (desired conditions for ponderosa pine and dry mixed conifer are 20-80 ft²/acre basal area [PR 687, p. 245]).

The original project proposal included treatments to regenerate stands severely affected by dwarf mistletoe. These treatments were removed from the proposed action [PR 686, p. 31]. The FEIS states, “In severely infected stands (80 percent or more infected), the forest health objective must also be weighed against other resource objectives. Generally, these stands would be assigned a similar treatment type to stands without a severe dwarf mistletoe infection, however, mechanical deferral may also be an option” [PR 687, p. 337; PR 659, p. 18]. This will improve overall stand vigor and facilitate long term sustainability of the uneven-aged forest conditions directed by the Land Management Plan on the treated areas. It is also recognized that severely infected stands which are proposed to be deferred from treatment will likely not be sustainable over time as ponderosa pine or mixed conifer forests without future regeneration treatments to establish healthy stands.

Contention 1e: The Forest Service asserts that it can disclose the effects of the proposed action by assuming a sort-of worst-case scenario, disclosing impacts in terms of acres. Disclosing impacts based on only numbers of acres across a broad landscape, and assuming that impacts can be disclosed by merely counting the acres impacted by certain treatments, as the FEIS does, ignores that individual acres of land are not interchangeable, even when they have similar numbers and types of trees. Where forest stands are located, and the values found there (slope, aspect, gradient, soil type, wildlife use, elevation, habitat type, etc.), and how those values and acres are juxtaposed with other lands, matter when it comes to understanding logging or burning impacts to numerous values. Site-specific data is not considered or disclosed before the agency approves any number of treatments. [Objection, pp. 16, 21]

Response: Please refer to the response to Contention 1a.

The Rim Country Project data used is site-specific and was used to disclose effects across the landscape scale. Understanding how data was applied to an analysis shows how site-specific data was considered in development of strata of similar forest conditions. Common stand exam sampling needs to be operationally and economically feasible, so it is not required to have all the stands sampled in a project analysis. A large-scale sampling coverage for the project is not necessary with the use of the nearest neighbor tool that groups stands into strata of similar forest conditions. Treatments applied for the stands are consistent with the Land Management Plans and the analysis represents 100% of project stands.

The Silviculture Report [PR 680, pp. 134-182] goes into detailed analysis with multiple attributes over an extended period of time. The use of acreages to demonstrate the intensity and scale of effects is appropriate and effective for multiple scale analysis. Forest attributes analyzed over multiple alternatives include tree densities, forest processes, forest composition, forest structure, large tree and old tree structure across the project area. Density related attributes include trees per acre, basal area and stand density index. Forest Process related attributes include mistletoe severity, bark beetle hazard, and fire adaptation.

The FEIS Chapter 3, Silviculture section [PR 686, pp. 165-186], presents the effects analysis from the Silviculture Report. This analysis demonstrates the use of site-specific data analyzed and summarized to represent like forest conditions for the Rim Country Project.

The project requires application of an extensive list of design features, best management practices, mitigation, and conservation measures informed by site-specific conditions to minimize or avoid effects [PR 687, pp. 261-311].

Contention 1f: In assessing logging impacts on Mexican spotted owls, the FEIS modeled impacts but failed to disclose the location of any of these values, so neither the public nor the decision-maker understands where these treated acres would be, how they would relate to each other, and to other values, or what the trees per acre greater than 18 inches DBH are in any particular protected activity center. For some values, the Forest Service only makes vague statements about aggregate impacts from the proposal, making it difficult to understand the effect of the action overall, or to compare alternatives, as is the case in evaluating impacts to the rare and sensitive northern goshawk (see FEIS, p. 332). Because treatments are “variable,” and won’t be chosen for years after the fact, the agency can only disclose that some impacts are “likely,”

without indicating the level or degree of change for some values and concluding there might not be any change at all for other values. The Forest Service justifies its approach in part by stating that: “The impacts of these treatments has been analyzed using a maximum implementation scenario that captures the maximum effects to all resources even if the timing and location of treatments is not known.” (FEIS, p. 198). The Forest Service here appears to take the position that the location of treatments has no bearing on impacts. [Objection, pp. 16-17, 21]

Response: Following the CBM model, the Rim Country Project does not detail the specific treatment that would occur on each acre of land within the project area. However, the EIS provides a table of 15 different treatment types as well as descriptions of other activities [PR 686, pp. 43-63] that are depicted spatially on static maps [PR 687, maps following p. 241] and on an interactive story map [PR 699]. It is clear from these maps where Protected Activity Center (PAC) mechanical and PAC hand thinning treatments are located on the landscape. As required by U.S. Fish and Wildlife Service (USFWS), treatments were planned and mapped in all Rim Country PACs. Before implementation, an interdisciplinary team will still need to verify that treatments are needed to improve habitat characteristics important to MSOs and to reduce the risk of high severity wildfire in the PACs, core areas, and in the MSO recovery habitat. Approximate acreages for treatment types are provided in the FEIS [PR 686, pp. 56-62]. Recognizing that specific acres of land have unique needs and constraints, the conditions and process under which these treatments would be applied to specific areas are described in detail in an implementation plan [PR 687, pp. 313-383]. Further, the project requires application of an extensive list of design features, best management practices, mitigation, and conservation measures informed by site-specific conditions to minimize or avoid effects, including to PACs [PR 687, pp. 261-311]. The project was designed to move forested conditions as much as possible toward the desired conditions listed in the Land Management Plans while assuring consistency with the Endangered Species Act (ESA) MSO Recovery Plan. As described in the response to Contention 1a above, this approach supported an effects analysis that goes beyond a simple worst-case analysis and supports a “hard look” at effects and an informed decision, as required by NEPA.

The FEIS-modeled impacts to wildlife habitat adequately disclose the maximum implementation scenario and effects to MSO and northern goshawk. With regard to the lack of location information of logging impacts to MSO, locations, methods, and probable effects of proposed thinning treatments are disclosed in static maps, as an interactive online storymap, and in analysis.

For federally threatened and endangered species, the standard of review applied is whether the project analyzed and consulted on effects to listed species with USFWS in compliance with the ESA Section 7(a)(2). The terrestrial wildlife biologist prepared a Biological Assessment (BA) for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. The BA includes treatments proposed in MSO PACs (PAC Atlas) with descriptions and locations shared with USFWS [PR 534, pp. 1-416]. USFWS’s Biological Opinion (BO) determined the project’s level of anticipated take is not likely to result in jeopardy to the MSO [PR 648, pp. 100-104]. The Forest Service also included Design Features to follow the MSO Recovery Plan Recommendations including no trees greater than 18 inches will be cut in PACs or nest/roost recovery habitat unless it is a hazard to an operator [PR 686, p. 289; PR 687, p. 305]. A summary of the analysis of effects to MSO and its

critical habitat by alternatives is included in the FEIS [PR 686, pp. 265-275, 287-324].

Forest Service activities for the Rim Country project will be carefully planned and coordinated with the USFWS to minimize adverse effects to owls and owl habitat. Terms and Conditions in the BO state the “Forest Service management activities within PACs and nest/roost replacement recovery habitat shall be coordinated with FWS staff through an IDT and implemented to reduce potential disturbance to Mexican spotted owls” and the “Forest Service shall coordinate timing of management activities (e.g., thinning, burning, comprehensive restoration, etc.) within PACs and nest/roost replacement recovery habitat in order to reduce effects to habitat from multiple entries that result in adverse effects to habitat” [PR 648, pp. 102-103]. The Terms and Conditions are included in the implementation monitoring for MSO in the FEIS, Appendix E [PR 664, p. 17]. In addition, the Forest Service will complete habitat management checklists and follow guidance for environmental analysis and implementation, which are included in the FEIS, Appendix F, as the MSO Conservation Recovery Framework [PR 666, pp. 116-139].

For Regional Forester Sensitive Species, the standard for analysis of sensitive species is FSM 2672.4, which requires preparation of a biological evaluation (BE). The specific standards and required content for a BE are in FSM 2672.42. The terrestrial wildlife biologist satisfied this standard by including the BE analysis of northern goshawk in the Terrestrial Wildlife Specialist Report [PR 683 pp. 19-20, 120-137] with a summary in the FEIS [PR 686, pp. 278-280, 329-335]. The terrestrial wildlife biologist determined that the direct, indirect, and cumulative effects of all alternatives “may affect individual goshawks but is not likely to cause a trend toward federal listing or loss of viability.” The Forest Service also included Design Features for northern goshawk to ensure treatments in goshawk post family fledging areas are mitigated to occur outside the breeding season [PR 687, pp. 307-308].

Contention 1g: The FEIS does not address or disclose where, when, and in what sequence and spatial relationship any of the roads will be constructed as well as the nature of those road segments (i.e., length, etc.), and their juxtaposition. Instead, the FEIS explains that the impacts of “temporary roads were analyzed qualitatively for the action alternatives as the location of these activities is unknown.” (FEIS, p. 371). The FEIS alleges that this “qualitative” analysis was also a worst-case analysis. Instead of disclosing the impacts of temporary roads by disclosing where such routes would be bulldozed, the FEIS acknowledges that “[t]he exact location of temporary roads would be determined as implementation occurs across the project area,” potentially years or two decades from now (FEIS, p. 343). Site-specific placement of temporary roads will only occur after NEPA is complete. The Forest Service asserts that its approach would comply with NEPA because “[f]ield reviews will review how project specifics, such as ... temporary road construction ... would impact resources and ensure they are within the effects analyzed” (FEIS, p. 199). But the FEIS’s effects analyzed was merely “qualitative,” meaning that it will be an entirely subjective determination whether the level of impacts at any given location, let alone overall or cumulatively, were “within the effects analyzed.” [Objection, pp. 18-21]

Response: Alternative 2 would construct or improve approximately 330 miles of temporary roads (new and/or existing unauthorized roads) to facilitate mechanical treatments and decommission all temporary roads when restoration treatments are completed [PR 686, p. 57]. Alternative 3 would construct or improve approximately 170 miles of temporary roads (new and/or existing unauthorized roads) to facilitate mechanical treatments and decommission all

temporary roads when restoration treatments are completed [PR 686, p. 61]. Temporary road needs were determined based on areas of ponderosa pine forest with a minimum of 100 square feet of basal area per acre. These areas would need adequate road access to remove forest products [PR 684, p. 12].

Road-related activities, including use of existing roads, maintenance, decommissioning, and temporary roads, are identified as a necessary component of meeting the project's purpose and need [PR 686, p. 23]. Recognizing that roads may have negative resource impacts, the FEIS identified these impacts as a significant issue and developed Alternative 3, which contains fewer temporary roads than the proposed action [PR 686, p. 30]. Additionally, road activities will require concurrent implementation of design features, best management practices, and mitigation and conservation measures [PR 687, pp. 261-311; see, specifically, SW013, SW021, SW048, SW056, SW057, SW059, SW063, SW069, AQ014, AQ019, BT008, CT001, CT010, NW001-NW008, RM001, RM003, RS001-RS002, RS004-RS006, RS010, RS013, SW017, SW031, SW039, SW040, SW058, SW060, SW062, SW065, SW080, TR001-TR013, WL006, WL010, WL016, WL022, WL025]. Although the location of each mile of road activity is not identified in the FEIS, application of these measures will ensure site-specific effects are minimized. In turn, these effects, which can reasonably be anticipated based on extensive literature and agency experience in roads management without the specific location of each mile of road being identified up front, are analyzed in the FEIS, with differing effects of alternatives compared when appropriate [PR 686, water and riparian: pp. 113-14, 117-18, 120-22, 124; soils and watershed: pp. 130, 134-36, 138, 140-43; fire risk: pp. 240, 246; noxious and invasive weeds: pp. 262-64; wildlife: pp. 300, 307-09, 321, 330-31, 337-39, 343-44, 348, 350-51, 362, 364, 365; aquatics, including aquatic macroinvertebrates: pp. 366, 370-71, 373-74, 376-81, 386-89, 392, 401-03, 405, 407-16; rare plants: pp. 420, 424-25, 427-33; PR 687, vehicle emissions: p. 24; cultural resources: pp. 47-53; tribal relations: pp. 58-62; socioeconomics: pp. 72-74; lands and minerals: pp. 82-83; range: p. 88; transportation: pp. 90-100; recreation: pp. 107-118; scenery: pp. 124, 133, 139, 141-43; inventoried roadless areas: pp. 161, 165-66; irreversible and irretrievable commitments of resources: p. 181].

The Rim Country Project, Appendix D, Implementation Plan identifies a tracking process to ensure the acreage and intensity of implemented treatments are within the scope of the effects analysis [PR 687, p. 326]. In the FEIS, the determination of effects of road activities, particularly establishment of temporary roads, is in large part based on application of the design features described above. Though effects are discussed qualitatively, assessing the application of specific design features in a treatment assigned using the CBM process can be used as a measure of the scope of effects resulting from implementing road activities as part of that treatment. If relevant design features are applied as anticipated in the FEIS, it is reasonable to conclude the actual effects will be within the scope of those disclosed in the FEIS.

Measures that will ensure site-specific effects of temporary roads are provided in the Transportation Specialist Report as well as in Appendix C. The Forest Service and contractor must agree on a temporary road plan that is based upon each contractor's available equipment, making it impossible to accurately predict the exact location at this time [PR 684, p. 19]. When new temporary roads need to be constructed, they shall be placed in locations that minimize environmental effects to the greatest possible degree and constructed in the shortest distance possible. The project includes the following design criteria when determining the amount and

locations of temporary roads: follow contour lines as much as possible and make gradual transitions between, be outside of Aquatic Management Zones or Wildlife conservation areas, avoid stream crossings where practical and install necessary drainage features when unavoidable, consider soil types and any landslide potential, use the shortest distance possible for a minimal amount of time, and only construct when no other feasible option is available [PR 684, p. 19].

Temporary roads may be new construction or may utilize road prisms of existing non-system roads that are already present [PR 684, pp. 22-23]. Temporary roads will be decommissioned immediately after mechanical and restoration treatments have been completed as detailed in design feature TR008 [PR 687, p. 304].

Recognizing that existing roads and road-related actions in this project may have negative resource impacts, thirteen transportation design features, best management practices, and mitigation and conservation measures will be adhered to. The primary purpose of design features TR001 and TR003 are to mitigate effects of temporary roads on water quality and to protect long-term soil productivity. Under TR001, temporary roads on soils with severe erosion hazard will be avoided. Under TR002, methods to control sediment and protect water quality will be implemented when temporary road construction is unavoidable. These methods include but are not limited to properly locating temporary roads in an upland position and ensuring adequate road drainage such as waterbars/rolling dips and outsloped road prisms. For activities adjacent to the road, to control runoff, tactics such as wattling, hydro-mulching, straw or wood-shred mulching, spread slash, erosion mats, terraces, blankets, mats, silt fences, riprapping, tackifiers, soil seals, seeding and side drains will be implemented where needed [PR 642, pp. 12-13].

Although the Rim Country Project does not identify the specific location of each mile of road-related activity, the effects of these activities can nevertheless reasonably be anticipated and communicated to the public based on extensive literature and agency experience in roads management. The project includes measures to ensure the effects of these activities are minimized, and includes an alternative developed, in part, to specifically address the issue of effects caused by roads. The analysis, which was made available for public review, discloses the effects of road-related activities, including differing effects by alternative. Implementation tracking is recommended to ensure road activities are within the scope of the FEIS effects analysis. Together, this approach provides the decision makers with the “hard look” needed to make an informed decision, in compliance with NEPA.

Please see instructions related to this Contention in the Conclusion section below.

ISSUE 2: The Rim Country Project’s adaptive management strategies.

Contention 2a: You contend that the adaptive management process the Forest Service proposes fails to meet standards set by academics, the agency, or the courts, and literature cited in your objection calls for details and specifics, not ambiguity around an adaptive management framework. The preamble to the Forest Service’s regulation that adopted the adaptive management definition states that the agency must identify the proposed changes, and their impacts, in the NEPA document. The Forest Service admits that it has not identified all of the adjustments and has not set thresholds or triggers for many values to determine whether adjustments should be made, and so the agency cannot disclose the effects of those adjustments.

The Forest Service cannot rely on its “adaptive management plan” to disclose project impacts, so the EIS violates NEPA. The FEIS makes clear the central role that the “Monitoring and Adaptive Management Plan” (MAMP) plays in the Rim Country Project, but the MAMP appears to be a work in progress and subject to change. The purpose of adaptive management is to ensure that agencies identify during the NEPA process the thresholds that, if exceeded, will require an adjustment, and that the agency analyze and account for the impacts of that adjustment in its EIS. Here, the Forest Service expects to change the metrics and thresholds by which it will measure the project’s progress toward achieving its goals and change the adaptive management actions that it may take if those new thresholds are exceeded. The FEIS cannot disclose the impacts of adaptive actions that the Forest Service has not even designed yet. The Forest Service has so far failed to develop a plan with three of the key features required by Forest Service regulations: (1) specific thresholds, that if exceed will trigger (2) specific management responses (3) whose impacts the agency has analyzed. For many values identified in the MAMP, the FEIS indicates: “No [adaptive] management action has been identified at this time.” (FEIS, App E). The Forest Service can change a project during implementation to address new information or unanticipated impacts, but not without preparing a supplemental NEPA analysis. The Forest Service cannot use the MAMP to avoid future NEPA analysis. [Objection, pp. 21-24]

Response: Forest Service regulations provide a definition of adaptive management as a system of management practices based on intended outcomes and monitoring to determine if management actions are meeting those outcomes; and, if not, to facilitate management changes that will best ensure those outcomes (36 CFR 220.3). An adaptive management proposal or alternative must clearly identify the adjustment(s) that may be made when monitoring during project implementation indicates that the action is not having its intended effect or is causing unintended and undesirable effects. The EIS must disclose not only the effect of the proposed action or alternative but also the effect of the adjustment, and the monitoring that would take place to determine whether the action is having its intended effect (36 CFR 220.5(e)(2)).

The FEIS Appendix H, Response to Comments, addresses the concern about adaptive management, explaining that CBM is a process to determine, review, verify, and allow implementation of the appropriate treatment for a set of environmental and resource conditions. Implementation and effectiveness monitoring would occur after treatments. If implementation monitoring shows that treatments were not implemented as planned after the verification process, adaptive management actions would be taken to ensure future treatments are implemented as planned following verification [PR 688, p. 245]. The Rim Country EIS Tracking Process, described in Appendix D, the Implementation Plan, would be used to track acres of treatments implemented and ensure that treatments are not applied on a greater number of acres than were analyzed in the FEIS. The CBM approach, acreage limits, treatment intensity ranges, and design features work together to ensure the effects are as described [PR 688, p. 194]. In addition, the Response to Comments provides this explanation for condition-based management: CBM provides for an adaptive framework to more thoroughly assure that the most appropriate treatment is implemented in the most appropriate location for the proposed action to best meet the desired conditions [PR 688, p. 186].

The FEIS Appendix E, Monitoring and Adaptive Management Plan, states that the USFS and the 4FRI SHG, of whom you are a member, collaboratively developed the plan by selecting indicators and metrics for measuring trends towards desired conditions, as well as identifying

thresholds. There is an expectation that indicators, metrics, methods, thresholds, adaptive management actions, and monitoring priorities could change over the life of the project; however, changes would be made collaboratively and made available to the public on the 4FRI Monitoring webpage [PR 688, p. 8]. Description of 39 indicators, how they will be assessed, how often they will be assessed, thresholds, and adaptive management actions are listed for many resources, including vegetation (age structure, patch spatial aggregation, and regeneration as examples), stream morphology, soil moisture, bare soil, diversity of wildlife communities, invasive plants, response of threatened and endangered species, ground water response, fire behavior, watershed condition, and airshed function. Out of 39 indicators, 12 do not have thresholds or adaptive management actions identified [PR 688, pp. 22-62].

For example, one vegetation indicator is regeneration, density of seedlings, poles, and saplings. Regeneration will be assessed as soon as possible following treatment and every five years thereafter, using field sampling of species composition, and seedling/sapling density. Within 10 years of treatment, seedling/sapling density should be within 0.4 to 3.6 plants/hectare/decade on volcanic soils, as the threshold. No threshold has been identified for species composition or regeneration rates on limestone soils, but this will be developed. Adaptive management for regeneration on volcanic soils could be more frequent or more intense prescribed burning. Since thresholds have not been developed for limestone soils, no adaptive management has been identified [PR 688, p. 23]. FEIS Appendix E describes why some indicators do not identify thresholds or have adaptive management actions, because there is currently no data to base them on. The process through which thresholds or adaptive management actions could be developed or modified as data become available (through our monitoring or advancements in science) is also described [PR 688, pp. 8-9].

Deciding officials and resource specialists would evaluate new adaptive management actions to ensure they are within the scope of the FEIS analysis, using a Supplemental Information Report, further described in Forest Service Handbook 1909.15, chapter 10, section 18. If the effects of the new adaptive management actions exceed what is analyzed in the FEIS, additional NEPA analysis would be required [PR 688, p. 9]. From this description of the introductory pages of the Monitoring and Adaptive Management Plan, new adaptive management actions would be dealt with in a collaborative manner and reviewed to determine whether additional NEPA would be needed.

The FEIS adequately describes monitoring and acknowledges that additional NEPA analysis could be required.

Contention 2b: The adaptive measure “Aquatic Habitat Suitability (Indicator 31)” focuses on the impacts of sediment on aquatic life, and sets an ill-defined, non-numerical threshold as follows: “Decrease in habitat suitability indices after accounting for non-treatment factors such as climate variability” (FEIS, App E, pp. 23-24). The Forest Service does not explain how the agency might “account[] for ... climate variability.” Further, the Forest Service describes its management response in the event this threshold is breached as: “Evaluate source of degradation and address through changes in actions” (FEIS, App E, p. 24). “Changes in action” is not a specific management response whose impact the Forest Service can or has analyzed. The agency therefore cannot rely on adaptive management to reduce the risk of impacts to aquatic life. [Objection, pp. 23-24]

Response: Per 36 CFR 218.8(c), issues raised in objections must have been submitted with previous specific written comments related to the proposed project unless based on new information. The IDT did not receive any comments directly related to this issue during an opportunity for comment to establish standing or demonstration of how this issue constitutes new information.

Contention 2c: For “broad scale assessments” related to logging impacts, the FEIS identifies “canopy openness” and “patch size” as important metrics, but states for both that “[n]o threshold has been identified for this indicator” (FEIS, App E, pp. 25-26). Without an identified threshold, there can be no adaptive management action. The Forest Service cannot rely on adaptive management measures to limit impacts related to these criteria. To address concerns about logging impacts, the Forest Service sets a threshold for bare soil: “Within 5 years of treatment (mechanical and/or fire), bare soil should comprise less than 20 percent of area affected by treatment” (FEIS, App E, p. 31). While this is a specific trigger, the Forest Service fails to identify any specific measure to respond to an exceedance of that trigger, stating only that the agency will “re-evaluate restoration treatment for modifications” (FEIS, App E, p. 31) without identifying what those modifications might be. [Objection, pp. 23-24]

Response: Per 36 CFR 218.8(c), issues raised in objections must have been submitted with previous specific written comments related to the proposed project unless based on new information. The IDT did not receive any comments directly related to this issue during an opportunity for comment to establish standing or demonstration of how this issue constitutes new information.

Contention 2d: The Forest Service proposes what appears to be a concrete trigger for the northern goshawk: “If northern goshawk occupancy trends show a non-zero decline (occupancy trend confidence interval or credible interval does not overlap zero) over a 5 to 10-year average at treatment and 4FRI landscape scales” (FEIS, App E, p. 54). The adaptive management action, however, will do nothing to reverse a downward trend for goshawk because it suggests only increased monitoring. [Objection, pp. 23-24]

Response: Per 36 CFR 218.8(c), issues raised in objections must have been submitted with previous specific written comments related to the proposed project unless based on new information. The IDT did not receive any comments directly related to this issue during an opportunity for comment to establish standing or demonstration of how this issue constitutes new information.

It is recommended that you consider engaging in the 4FRI Multi-Party Monitoring Board to ensure that thresholds/triggers and adaptive management actions in the Monitoring and Adaptive Management Plan as it pertains to northern goshawk are responded to appropriately.

ISSUE 3: The Rim Country Project’s alternatives consideration.

Contention 3a: You submitted the Strategic Treatments for Fire Use (STFU) Alternative for consideration as part of the Rim Country EIS in two documents in 2018. The STFU Alternative would utilize research which has developed “prioritization strategies for implementing fuel treatments ... with the goal to maximize treatment efficacy using optimal placement and

prescription options under typical and extreme fire weather conditions. The “focused” alternative was developed to address concerns about smoke from post mechanical treatment prescribed burning and activity fuels treatment. You are disappointed that the Forest Service has proposed mechanical treatments on the vast majority of the Rim Country landscape. Of the nearly one million acres (991,600) that the agency intends to “treat,” a process that will take 20 years or more, the selected alternative would require mechanical tree removal on 873,420 acres, or 88% of the total. Choosing the STFU alternative would reduce the acreage treated mechanically to within the range that had consensus, and still make plenty of acres available for a sustainable forest products industry. The STFU alternative proposes a three-tier strategy that bases management area decisions on optimized treatment locations (community protection, strategic thinning treatment, fire use) rather than arbitrary distances from values-at-risk. The FEIS states that “[t]he prioritization of treatment areas will be a part of the implementation of Rim Country, though broad recommended methodology is presented here.” You state that they have not been able to identify the broad recommended methodology which is referred to in that statement. This leads them to believe that there is no coherent strategy in placing treatments on the landscape. In the STFU Alternative, mechanical treatment prioritization and strategic placement of mechanical treatments is consistent with objectives established in the MSO Recovery Plan, the Statewide Strategy for Restoring Arizona’s Forests, the Landscape Restoration Strategy for the First Analysis Area, the Memorandum of Understanding between the 4 Forest Restoration Initiative (4FRI) Collaborative Stakeholder Group Representatives and the U.S. Forest Service, the National Cohesive Wildland Fire Management Strategy, and dozens of scientific articles published in peer reviewed journals and reviewed thoroughly in their alternative proposal. [Objection, pp. 24-31, 37]

Response: The Rim Country proposal was developed based on the purpose and needs in the Land Management Plans, designed to move forest conditions toward Land Management Plan comprehensive restored desired conditions. The effects were analyzed, disclosed, and are consistent with the plans. In the Response to Comments regarding the STFU alternative, it was disclosed that this alternative was considered but eliminated from detailed analysis because it did not meet some aspects of desired conditions, such as the following in: “is some concern that it may raise the risk of some forms of environmental damage resulting from an increased use of prescribed fire in areas that have not received mechanical treatments. The Strategic Treatments for Fire Use Alternative may not meet the purpose and need as well as the Modified Proposed Action because it (1) proposes to mechanically treat fewer acres moving the landscape toward desired conditions to a lesser degree; (2) has the potential to slow the pace of movement toward desired conditions in Tier 3 areas; and (3) could also limit restoration tools available during implementation in Tier 3 areas” [PR 688, p. 279].

The project purpose and need includes objectives to restore forest structure, composition, and functions, to improve ecosystem functionality and multiple resource attributes beyond simple mitigation of uncharacteristic wildfire events. The absence of characteristic fire for 120+ years has resulted in forest structures and fuels accumulation in much of the project landscape which exceed levels that can be restored to desired comprehensive characteristics by fire alone. The response to Contention 3c addresses the dismissal of the STFU alternative from detailed consideration.

Information on treatment prioritization can be found in the 2021 “4FRI Restoration Strategy”.

This document identifies high priority partnership areas within the 4FRI footprint [PR 621, pp. 6-8] and states that a rapid assessment and optimization effort will be conducted for other areas in the project footprint. Specifically, “Approximately 300,000-350,000 acres (over 20 years) will be assessed to prioritize which acres to treat to reduce the risk of wildfire the quickest, beginning with FY23 treatments. This approach uses new science to target acres to reduce risk, and lower costs by treating fewer acres in a shorter timeframe. The outcome will inform needs for a new larger-scale agreement or contract while we also resolve enabling conditions. This step uses best available science to partner with industry to be a part of the long-term approach” [PR 621, p. 9]. This assessment and optimization effort would be completed “closely with the 4FRI SHG to define priorities for project implementation and collaboratively conduct an optimization effort. The result of this effort will be collaboratively designed 5-year plans for timber and hazardous fuels for the Kaibab and Coconino National Forests starting in FY23 (FY22 is covered under decision point #2)” [PR 621, p. 9]. The assessment of the Kaibab and Coconino is currently underway. The Restoration Strategy states “there are six key decisions that comprise the proposal for the restoration strategy. Overall, the six points fit into the categories that have been identified with the SHG: (1) resolve enabling conditions, (2) focus on high priority projects, (3) identify acres to implement to maintain local industry, (4) identify remaining acres that need further assessment regarding implementation tools” [PR 621, p. 6]. Category 4 allows for future assessment of acres.

As mentioned on page 1 of this letter, we met July 6, 2022 for an objection resolution meeting where we discussed optimization and prioritization. Throughout the planning process for the Rim Country Project, the Forest Service has been clear through discussions with the SHG and the Rim Country Project FEIS response to comments that the role of prioritization or optimization is most appropriate during the implementation stage, rather than the planning stage.

To support the intent of the 4FRI Restoration Strategy to work closely with the SHG to define priorities for project implementation and collaboratively conduct an optimization effort, the Forest Service commits to reviewing and updating the 2011 memorandum of understanding (10-MU-11031600) in coordination with the SHG to incorporate identification of the roles and responsibilities of the 4FRI SHG and Forest Service in the implementation of the Rim Country Project. The MOU could include defining roles and responsibilities of the spatial and temporal optimization and prioritization of treatments within Rim Country, but also within the larger 4FRI footprint. The 4FRI Restoration Strategy identifies that the landscape-level effort is broader than just Rim County, it encompasses the intent to restore 2.4 million acres of ponderosa pine and mixed conifer forests on portions of the Apache-Sitgreaves, Coconino, Kaibab, and Tonto National Forests in Northern Arizona over the next 20 years. These efforts would support intermediate to longer-term planning (5 to 20 years) which is an ongoing implementation activity by all forests.

As stated in the 4FRI Restoration Strategy, the Forest Service is committed to using the best available science to “prioritize which acres to treat to reduce the risk of wildfire the quickest.” The intent of the 4FRI Restoration Strategy was to complete a rapid assessment and optimization effort to “collaboratively design(ed) 5-year plans for timber and hazardous fuels for the Kaibab and Coconino National Forests starting in FY23”. However, due to current timing and needs for implementing surveys and preparation work, the FY 23 program of work is currently being developed.

The Forest Service, as noted in the 4FRI Restoration Strategy, also “remains committed to treating the full 4FRI footprint and proposes this would be best achieved through a multi-pronged approach. By applying a suite of treatment options there is higher confidence that acres can be treated to achieve the 4FRI objectives” [PR 621, p. 5]. The primary objective is to identify the most critical acres for mechanical thinning that will address and reduce the risk of uncharacteristic landscape scale fire and identify the scale of burning restoration activity fuels (slash/residuals) and using prescribed burning as a primary restoration tool along with mechanical thinning to provide additional flexibility to respond to changing mechanical thinning implementation capacity. The goal is to implement a suite of treatment activities through a multi-prong approach.

To clarify the 4FRI Restoration Strategy, it’s important to note the intent is to use all of these tools together; and does not exclude or limit the use of mechanical thinning or convey a primarily reliance on the use of fire. Any optimization effort regardless of the method(s) or model(s) used, would need to entail developing various scenarios that depict a suite of spatially explicit configurations of mechanical thinning and fire treatments that optimize for restoration benefit, fire hazard reduction, and carbon retention. The projected range of outcomes and changed conditions from these scenarios would vary based on the different levels of treatments and types assumed in the modeling; and would also vary based on the actual completion of mechanical treatment and prescribed fire, and other implementation activities. Information from the optimization process would be useful to ensure the most critical mechanical and fire treatments are prioritized to address uncharacteristic landscape-scale fire most efficiently and effectively. Information gained from the optimization effort should not be construed as a change in the Rim Country or other project final decisions. Beyond the scope of the Rim Country, the optimization would likely be most effective and efficient extended at the largest possible scale, across the entirety of the 4FRI landscape, in alignment with the 4FRI Restoration Strategy intent.

At this time, in accordance with the 4FRI Restoration Strategy, a rapid assessment is being completed. After the rapid assessment has been completed the Forest Service intends to work with the SHG Rapid Assessment and Optimization Workgroup(s) to draft a charter for the optimization process which will be reviewed by the Forest Service, to develop a clearer understanding of the optimization process.

Please see instruction related to this Contention in the Conclusion section below.

Contention 3b: The Rim Country Project FEIS offers some background on 4FRI. In Chapter 1, the FEIS harkens back to the Small Diameter Wood Supply in Northern Arizona report, which “demonstrated a level of ‘social agreement’ on how much, where, and under what basic parameters mechanical treatment, as one restoration tool, could be used to accelerate restoration of the 2.4-million-acre initiative area” (FEIS, p. 2). As published in the Journal of Forestry, the small diameter wood supply study achieved consensus around mechanical thinning on appropriately 41% of the 2.4 million-acre 4FRI landscape. In the first EIS, approximately 44% of the analysis area was authorized for mechanical thinning. Now, the Rim Country Preferred Alternative makes up to 72% of the landscape available for mechanical thinning. Across both analyses, this departure equates to over 330,000 acres beyond the consensus for mechanical thinning. This exceedance of the consensus agreement on the extent of thinning appropriate for the landscape does not even account for the additional acres within the 4FRI footprint that have

been made available to thinning under different NEPA decisions, which, based on Table 28 in the Cumulative Effects discussion, would be between approximately 200,000 acres and 240,000 acres. Reasonably foreseeable activities within the cumulative effects area adds at least another 84,000 acres of mechanical thinning that is on the near-term horizon, bringing the amount of the Rim Country landscape that has already been assigned, or will soon be assigned, thinning treatments since the 2008 wood supply study to as much as 324,000 acres, or more than 30% of the area where there was consensus for the need for mechanical intervention. [Objection, pp. 33-34, 37]

Response: The Small Diameter Wood Supply in Northern Arizona report was for informational purposes only and has no legal direction for this project. The project proposal was developed with public input based on the purpose and need and detailed review of current conditions in the project area. The project was proposed and designed to move current forest conditions toward Land Management Plan desired conditions. The analyzed effects were disclosed and consistent with the Land Management Plans desired conditions, standards, and guidelines.

Contention 3c: The Forest Service declined to analyze the STFU Alternative even though the FEIS claims it meets the purpose and need. The agency further acknowledges that this alternative “does represent a science-based solution for maximizing limited or scarce resources and industry capacity” (FEIS, p. 279). Thus, the agency must analyze the STFU alternative in detail unless it has some valid basis for dismissal. The agency asserts that while the STFU alternative would “meet the purpose and need,” it would not do so “as well as alternative 2” (FEIS, pp. 68, 70). This is arbitrary for at least two reasons. First, the Forest Service concluded that Alternative 3 would also not meet the project purpose and need as well as Alternative 2, and yet it analyzed that alternative in detail. Second, federal courts have concluded that agencies still have a duty to analyze alternatives in detail if they partially meet the project purpose and need. The Forest Service also rejects analyzing the STFU alternative because it would involve different tradeoffs than Alternative 2, including fewer mechanical treatments (resulting in less short-term disturbance, but fewer logging jobs and potentially more fire risk). While these may be reasons the Forest Service may ultimately decide not to choose the STFU alternative, they are not valid reasons for failing to analyze the alternative in detail. In fact, they show that a deep dive on the STFU alternative, when compared with Alternatives 2 and 3, could have provided a decision-maker concerned about the level of mechanical treatments to pick the STFU alternative over the others. The Forest Service concludes that while the STFU alternative meets the project’s purpose and need, there are some concerns about potential impact, which is not a valid basis for rejecting an alternative. Courts may defer to an agency decision not to analyze in detail an alternative that the agency finds to be “too remote, speculative, or impractical or ineffective,” or not “significantly distinguishable from the alternatives already considered.” “Some concerns” about potential risks are simply not a valid basis for failing to analyze in detail an alternative that meets the purpose and need. [Objection, pp. 34-35, 37]

Response: See also Response to Contention 3a.

Under 40 CFR 1502.14, a federal agency is required to analyze those alternatives necessary to provide a clear basis for choice among options by the decisionmaker. In making a decision, the decisionmaker is required to consider the range of alternatives discussed in the EIS (40 CFR 1505.1(e)), with the “range of alternatives” encompassing alternatives analyzed in detail as well

as those dismissed from detailed study (Question 1a, CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981). When there are potentially a very large number of alternatives, only a reasonable number of examples (or alternatives) must be analyzed and compared in the EIS (Question 1b, CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations). Forest Service regulations further clarify that, "[an] EIS shall document the examination of reasonable alternatives to the proposed action. An alternative should meet the purpose and need *and* address one or more significant issues related to the proposed action. Since an alternative may be developed to address more than one significant issue, no specific number of alternatives is required or prescribed" (36 CFR 220.5(e)); emphasis added).

The questions here are whether the Rim Country Project's dismissal of the STFU alternative eliminated a reasonable alternative from detailed consideration, and in so doing, prematurely limited the decisionmakers' ability to make an informed decision based on the available range of alternatives.

Based on 36 CFR 220.5(e), a "reasonable" alternative to the proposed action is understood to be one that meets both the purpose and need and addresses one or more significant issues related to the proposed action. The decision to eliminate the STFU alternative from detailed study was made with these two considerations in mind. An analysis of the STFU alternative [PR 485; PR 488] compared the alternative with key components of the purpose and need (forest resilience and sustainability, undesirable fire effects, terrestrial and aquatic species habitat, streams and springs, riparian vegetation, cultural resources, forest products industries, improved motorized transportation system, and Land Management Plan amendments) and found that the STFU alternative may not meet the purpose and need as well as the proposed action because it 1) proposes to mechanically treat fewer acres moving the landscape toward desired conditions to a lesser degree; 2) has the potential to slow the pace of movement towards desired conditions in Tier 3 areas; and 3) relative to the modified proposed action, may support fewer jobs and provide less labor income in the local economies from forest product removal [PR 686, p. 68]. The analysis of the STFU alternative also considered its responsiveness to the six significant issues identified in the FEIS (treatments in MSO PACs, treatments in northern goshawk habitat, large tree retention, economics, smoke/air quality, and roads). The analysis found that the STFU alternative addresses the MSO, northern goshawk, large tree retention, and roads issues in a fashion similar to one or more of the action alternatives [PR 485, pp. 13-16, 18-19]. The analysis found that the STFU alternative may differ in some effects with respect to the economics and smoke/air quality issues [PR 485, pp. 16-18]. However, these issues are already specifically addressed by design features included in the action alternatives and/or the action alternatives themselves and addressing these issues does not appear to be the intent of the STFU alternative. Combined, the STFU alternative's lesser achievement of the Rim Country Project's purpose and need and its lack of specific responsiveness to the significant issues identified for analysis in the EIS justify its dismissal from detailed study. Additional rationale provided in the FEIS [PR 686, pp. 67-70] and line officer approval of the alternatives [PR 523] for dismissal of the alternative further strengthens the justification.

The decision to not analyze the STFU alternative in detail in the EIS was based on a substantial amount of analysis and deliberation, which is detailed in the project record [PR 485; PR 488; PR 523] and summarized in the FEIS [PR 686, pp. 67-70]. In consideration of this analysis, the Rim Country Project's responsible officials determined the alternatives necessary to permit a

reasoned choice were analyzed in the DEIS. In accordance with 40 CFR 1502.2(e), the responsible officials determined they had enough information to consider and eliminated from detailed study the STFU alternative [PR 523, p. 9]. Combined, the initial analysis of the STFU alternative, the detailed analysis of two action alternatives and a no action alternative, and the rationale for several other alternatives considered but dismissed from detailed study provide the responsible officials with a reasonable range of alternatives with which to make an informed decision, in accordance with NEPA.

The project purpose and need includes objectives to restore forest structure, composition, and functions, to improve ecosystem functionality and multiple resource attributes beyond simple mitigation of uncharacteristic wildfire events. The absence of characteristic fire for 120+ years has resulted in forest structures and fuels accumulation in much of the project landscape which exceed levels that can be restored to desired comprehensive characteristics by fire alone.

Contention 3d: You contend the Forest Service misreads your proposal on whether other points such as road decommissioning or aquatic restoration are included in the alternative. They state that the STFU alternative was meant to address the burning and thinning components of the project's purpose and need, not the additional restoration components. The Forest Service also states that "mechanical restoration in Tier 3 areas would not occur" under the STFU alternative, "potentially limiting the restoration tools available during implementation. This could limit the opportunities to address issues in remote watersheds and/or improve conditions in remote streams or springs" (FEIS, p. 68). The STFU alternative is to limit mechanical thinning to areas where such actions will have an outsized beneficial impact, and to allow the return of fire to the ecosystem to occur in Tier 3 areas where natural and prescribed fire can do the job. [Objection, pp. 35-37]

Response: The description of the STFU alternative submitted to the Forest Service [PR 224] does not address actions such as road decommissioning and watershed/aquatic restoration. While this lack of information was taken into account in the assessment of whether the STFU alternative should be analyzed in detail [PR 686, p. 68], it is not the sole reason the STFU alternative was dismissed from detailed consideration (see response to Contention 3c).

The current conditions of the project landscape are such that there are few areas where natural and prescribed fire alone can comprehensively restore desired ecological conditions, hence the conclusion the STFU alternative would limit restoration tools available in Tier 3 areas.

ISSUE 4: The Rim Country Project's protections for Mexican Spotted Owl.

Contention 4a: You contend the FEIS, its supporting documents, and the draft ROD fail to include many components critical to comply with NEPA, to respect the MSO Leadership Forum concerns and to fulfill commitments resulting from the 2020 regional MSO Leadership Forum Workshop, and most importantly to allow the public to understand exactly how the Rim Country project will affect our Public Lands and impact MSO. [Objection, pp. 37-40]

Response: Your summarized concerns, including our response, follow:

1. Condition Based Management approach

The CBM approach for Rim Country complies with NEPA.

Please see response to Contention 1a for discussion of the project's compliance with NEPA with respect to condition-based management.

2. Lack of site-specific MSO field data (habitat) and imputed data is insufficient to inform treatments and analyze effects, including cumulative effects

Site-specific MSO field data (habitat) and the use of imputed data informs treatments and effects can be analyzed, including cumulative effects.

The explanation of site-specific MSO field data sampled and analyzed is addressed in Contention 1b.

MSO Recovery Plan recommendations are included in the analyses for the MSO and its habitat in the FEIS. FVS modeling and Fire modeling both show that by treating in MSO habitat most habitat variables important to the MSO are exceeded. Where modeling shows levels at or below recommended minimums land managers are instructed in the FEIS [PR 686, pp. 303-305], Design Features [PR 663, p. 305], and the Implementation Plan [PR 663, p. 335] describe to alter prescriptions to allow for MSO habitat desired conditions (i.e., higher canopy cover and numbers of large trees and snags).

The Forest Service is required to analyze and consult on effects to listed species with USFWS in compliance with the ESA Section 7(a)(2). The terrestrial and aquatic wildlife biologists prepared a BA for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. The BA includes treatments proposed in MSO PACs with descriptions and locations shared with USFWS [PR 534, pp. 1-416]. USFWS's BO determined the project's level of anticipated take is not likely to result in jeopardy to the MSO [PR 648, pp. 100-104]. The Forest Service also included Design Features to follow the MSO Recovery Plan Recommendations [PR 686, p. 289; PR 687, p. 305]. As required by the NEPA, the IDT analyzed direct, indirect, and cumulative effects to MSO and its critical habitat by all alternatives in the Terrestrial Wildlife Specialist Report [PR 683, pp. 8-14, 33-115] with a summary in the FEIS [PR 686, pp. 265-275, 287-324].

3. Lack of specific MSO monitoring

Monitoring for MSO is discussed in the Rim Country FEIS and supporting documents, in particular that the plan development would be led by USFWS [PR 688, p. 13]. The USFWS's BO includes a reasonable and prudent measure to "[m]onitor the effects of mechanical thinning, prescribed burning, and comprehensive restoration actions to the Mexican spotted owl from the Rim Country Project" [PR 648, p. 102]. The terms and conditions for the reasonable and prudent measure include implementing a study to examine mechanical thinning and prescribed burning treatments in owl habitats using GPS tracking, monitoring and annually reporting incidental take, and annual reporting of Rim Country project actions taken and effects to the owl and its critical

habitat [PR 648, pp. 103-104].

The MSO Monitoring Plan included in the BO [PR 648, pp. 151-152] was proposed with a different study design to improve upon the lessons learned from previous management experiments, particularly the need to increase knowledge of treatment effects to owls and owl habitat with fine-scale data collected more efficiently to meet conservation goals in the 2012 MSO Recovery Plan [PR 648, pp. 151-152].

Another reasonable and prudent measure and term and condition of the BO requires the Forest Service to develop a process for the review/ground-truthing and tracking of stands identified as nest/roost replacement habitat by December 31, 2022, to design the least impactful mechanical treatments [PR 648, p. 103].

The Region 3 Mexican Spotted Owl Management Strategy describes six measures grounded in the implementation of the 2012 Recovery Plan, including discussion of past, ongoing, and future monitoring planned. While the Strategy was developed from the Stipulation of Voluntary Dismissal commitments with WildEarth Guardians [PR 486, pp. 1-11], it was also intended to address concerns from the MSO Leadership Forum (strategy point 5). Following the MSO Strategy is a requirement for all forests in the Southwestern Region. The Forest Service, in coordination with USFWS, developed several tools to assist the Forests to align with the Strategy [PR 509, pp. 3-4]. These tools include habitat management checklists and guidance for environmental analysis and implementation, which are included in the FEIS, Appendix F, as the MSO Conservation Recovery Framework [PR 666, pp. 116-139]:

1. The Southwest Region step by step MSO Habitat Treatment and Implementation Guidance.
2. Guidelines for Forest Vegetation Data Collection within Mexican Spotted Owl Habitat
3. Pre-implementation Compliance Review for the Regional Mexican Spotted Owl Recovery Strategy, August 6, 2021.
4. Mexican Spotted Owl Habitat Environmental Analysis Project Checklist, June 7, 2021

4. Clarifications of certain recommendations are needed with a revision of the MSO Recovery Plan

This is outside the scope of the Rim Country FEIS as the Forest Service is not the lead federal agency on revising recovery plans. USFWS and the MSO recovery team are best suited to address this issue and the Forest Service will continue to participate.

5. Identification of environmental baseline and jeopardy analysis for ESA Consultation

The environmental baseline was adequately described for the USFWS to make their no jeopardy decision.

The terrestrial wildlife biologist prepared a BA for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. An analysis of the environmental baseline was included in the BA and used by the USFWS to determine in the BO that the project's level of anticipated take is not likely to result in jeopardy to the MSO [PR 648, pp. 100-104]. A summary of the analysis of effects to MSO and its critical habitat by alternatives is included in the FEIS [PR 686, pp. 265-275, 287-324].

6. *Public needs access to forest data with “easy to understand” metrics to understand analysis*

Public has access to forest data and FEIS includes a description of the metrics used in the analysis in the following examples:

1. Current forest vegetation data used to develop the proposed action and Lidar: [\[https://www.fs.usda.gov/detail/4fri/planning/?cid=fseprd673169\]](https://www.fs.usda.gov/detail/4fri/planning/?cid=fseprd673169); [PR 700, p. 1]; <https://www.fs.usda.gov/main/4fri/gis>].
2. Tables in the Terrestrial Wildlife Specialist Report describe modeling of pre- and post-treatment forest structure (e.g., trees >17.9 in DBH, snags), and treatments effects by alternative, including prescribed fire effects [PR 683, pp. 33-105].
3. The models in the analyses consider thinning and prescribed burning to predict conditions 20 years into the future depending on the alternative selected and implemented [PR 686, pp. 305-306, 316-318].
4. Forest Vegetation Simulator (FVS) was used to perform the analyses such that large trees and snags as well as many other variables important to the MSO are shown to increase as a result of treatment [PR 686, pp. 301-305, 313-316].
5. The metrics used to analyze MSO habitat are described in the FEIS [PR 686, p. 288].

The Forest Service complies with the twin aims of NEPA to consider every significant aspect of the environmental impact of a proposed action and ensure that the agency informs the public that it has considered environmental concerns in its decision-making process (40 CFR 1500.1). The Forest Service also commits to continue the discussion on issues raised in the MSO Leadership Forum.

Please see instructions related to this Contention in the Conclusion section below.

Contention 4b: The FEIS fails to include actual information about the number of trees and canopy cover in each PAC and in Recovery Nest/Roost Habitat. In addition, the number of trees and canopy cover that will be left after treatment via cutting and burning are not included in the FEIS or supporting documents. The FEIS and its accompanying documents do seem to commit to not cutting > 18 trees within PACs and Recovery Nest/Roost Habitat; however, it is not clear how much canopy will remain in each PAC. [Objection, pp. 40-41]

Response: For federally threatened and endangered species, the standard of review applied is whether the project analyzed and consulted on effects to listed species with USFWS in

compliance with the ESA Section 7(a)(2). The terrestrial wildlife biologist prepared a BA for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. The BA includes treatments proposed in MSO PACs with descriptions and locations shared with USFWS [PR 534, pp. 1-416]. USFWS's BO determined the project's level of anticipated take is not likely to result in jeopardy to the MSO [PR 648, pp. 100-104].

A summary of the analysis of effects to MSO and its critical habitat by alternatives is included in the FEIS [PR 686, pp. 265-275, 287-324].

The Rim Country Project conducted an analysis for MSO PAC treatments measuring canopy cover and trees per acre. This analysis is within the Terrestrial Wildlife Specialist Report [PR 683, pp. 34-109]. The Terrestrial Wildlife Specialist Report also details the FVS modeling to predict the outcomes of treatments in all the PACs [PR 683, pp. 71-74]. Proposed treatments are designed to be consistent with the 2012 MSO Recovery Plan" [PR 686, p. 46]. The following from the FEIS also describes the MSO PAC analysis and attributes measured, "Modeling using the Forest Vegetation Simulator was done in Mexican spotted owl habitat for the existing condition, 10 years after implementation, and 20 years after implementation. The FVS model results quantify some variables of habitat that are important for the Mexican spotted owl such as canopy cover, trees per acre by tree size classes, and herbaceous and shrub layers" [PR 688, p. 131].

Contention 4c: The Forest Service must increase the post treatment basal areas (BA) and canopy cover to levels that are not so close to the minimums recommended by the Recovery Plan; these are not targets. The BAs and canopy cover in mixed-conifer and the BA in pine oak in MSO protected habitat will be treated to 126 BA in mixed conifer, 116 in pine oak and with average canopy cover in mixed conifer to 60% according to Table 36 of the Terrestrial Wildlife Report (Key Habitat Variables in PACs via FSV). These treatments are at or near the minimum recommendations of the Recovery Plan which recommends 120 BA in mixed conifer and 110 BA in pine oak in the Upper Gila Mountains and Basin and Range West Critical Habitat Units (Recovery Plan Table C.3) and 60% canopy in mixed conifer (Recovery Plan pages 182, 276). [Objection, p. 41]

Response: The proposed action is consistent with the MSO Recovery Plan requirements. Project modeling averages are based on aggregation of PACs across the project landscape and reflects that some PACs are currently deficit in large trees or lower in density than recovery plan objectives. During implementation, each PAC will be evaluated for the most suitable approach to maintain or develop desired conditions described in the MSO Recovery Plan. There are instructions that implementation must meet or exceed Recovery Plan requirements in areas where the current stand conditions are suitable, or be designed to develop towards Recovery Plan objectives within the shortest time frame possible where current stand conditions do not meet these objectives, specifically "Regardless, silviculture prescriptions in all cover types of nest/roost recovery habitats should seek to increase populations of trees in this size class whenever possible, while retaining and recruiting trees larger than 18" in diameter, to avoid or mitigate decreases evident in the modeling results" [PR 686, pp. 303-305]. Design Features [PR 663, p. 305], and the Implementation Plan [PR 663, p. 335] describe to alter prescriptions to allow for MSO habitat desired conditions (i.e., higher canopy cover and numbers of large trees

and snags).

Forest Service activities for the Rim Country Project will be carefully planned and coordinated with the USFWS to minimize adverse effects to owls and owl habitat. Terms and Conditions in the BO state the “Forest Service management activities within PACs and nest/roost replacement recovery habitat shall be coordinated with FWS staff through an IDT and implemented to reduce potential disturbance to Mexican spotted owls” and the “Forest Service shall coordinate timing of management activities (e.g., thinning, burning, comprehensive restoration, etc.) within PACs and nest/roost replacement recovery habitat in order to reduce effects to habitat from multiple entries that result in adverse effects to habitat” [PR 648, pp. 102-103].

Silvicultural prescriptions in all cover types of nest/roost recovery habitat should seek to increase proportions of trees in the 12-18 diameter size class whenever possible, while retaining and recruiting trees larger than 18 inches in diameter, to avoid or mitigate decreases evident in the modeling results [PR 686, p. 303]. Design Features [PR 663, p. 305], and the Implementation Plan [PR 663, p. 335] describe to alter prescriptions to allow for MSO habitat desired conditions (i.e., higher canopy cover and numbers of large trees and snags).

Contention 4d: The Forest Service must increase the post treatment BA percentage of 12”-18” trees BAs to levels that are not so close to the minimums recommended by the Recovery Plan; these are not targets. The percentage of basal area in PACs from trees 12"-18" according to Table 37 of the Terrestrial Wildlife Report (Cover Type for Class Sizes via FSV) will be reduced from an existing BA of 46 (29%) to 36 (28%) in mixed conifer. This is lower than the recommended >30% by the Recovery Plan (Table C.3). [Objection, p. 41]

Response: The proposed action is consistent with the MSO Recovery Plan requirements. See the response to Contention 4c.

Contention 4e: In the 111,539 acres of Foraging/Non-Breeding Habitat more than 100,000 trees (one per acre) 18-24 inches in diameter will be cut, according to Table 42 of the Terrestrial Wildlife Report. This is in spite of the fact that (1) the Recovery Plan (Table C.1) says for "Recovery Foraging/Nonbreeding Habitat... Retain key owl habitat elements (e.g., large trees...) and (2) the Recovery Plan (p. 269) says, "Design and implement management treatments within Forested Recovery Foraging/Non-breeding habitat so that ... trees (>46 cm [18 in] dbh) are retained" proposed cable logging in MSO habitat where, though no cable logging is supposed to occur in PACs (WL016, Appendix F), cable logging is being approved in 5,045 acres of Nest/Roost Recovery Habitat and in 25,941 acres in Recovery Foraging/Non-breeding habitat (Biological Opinion, pp. 66-67). The FEIS and supporting documents do not identify where large trees are located and how many large trees are in these areas. A statement that “Trees greater than 24 inches dbh would not be cut in recovery habitat (including nest/roost replacement habitat), except where necessary for cable corridor locations” (Biological Opinion, pp. 68-69) further highlights these concerns. [Objection, pp. 41-42]

Response: The proposed action is consistent with the MSO Recovery Plan. The MSO Recovery Plan does not require identifying where or how many large trees are in MSO habitat. The FVS modeling analysis does not support the claim that the proposed action will remove 100,000 large trees. The analyses shows that large trees in MSO habitat will be protected, and recovery habitat

will increase [PR 686, pp. 301-318]. Where modeling shows the numbers are near or just below the recommended minimums, land managers are instructed to alter prescriptions to leave more large trees and snags [PR 686, pp. 303-305]. Design Features [PR 663, p. 305], and the Implementation Plan [PR 663, p. 335] describe to alter prescriptions to allow for MSO habitat desired conditions (i.e., higher canopy cover and numbers of large trees and snags).

These treatments are proposed to increase sustainability of forests on steep slopes by reducing the likelihood of high severity wildfire occurrence. The treatments will facilitate restoring or maintenance of desired conditions identified as objectives in the Apache-Sitgreaves, and Coconino National Forest Land Management Plans, and the draft Tonto National Forest Land Management Plan. The areas proposed under alternative 2 to be harvested on steep slopes by cable or tethered harvesting systems are disclosed in the project record. A total of 54,609 acres (all three Forests combined) are proposed as candidate acres for silvicultural treatments on steep slopes (greater than 30%) [PR 686, pp. 291; PR 601, p.1] and locations are displayed on a map [PR 601, p. 2]. No steep slope treatments are proposed for MSO PACs [PR 683, p. 63]. Of the 54,609 acres proposed to be treated on steep slopes, 30,986 acres are in MSO habitat areas, with treatment prescriptions focused on managing to develop or maintain desired conditions described in the 2012 MSO recovery plan. Within nest/roost recovery areas, 5,045 acres are proposed for treatment and within foraging/non-breeding habitat areas, 25,941 acres are proposed for treatment [PR 686, p. 301]. The effects analysis for these treatments are found in each of the resource specialist reports (Soils and Watershed Resource Report [PR 682, p. 131]; Silviculture Report [PR 680, p. 50]; Terrestrial Wildlife Report [PR 683, pp. 91-106]).

For federally threatened and endangered species, the standard of review applied is whether the project analyzed and consulted on effects to listed species with USFWS in compliance with the ESA Section 7(a)(2). The terrestrial wildlife biologist prepared a BA for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. The BA includes treatments proposed in MSO PACs with descriptions and locations shared with USFWS [PR 534, pp. 1-416]. USFWS's BO determined the project's level of anticipated take is not likely to result in jeopardy to the MSO [PR 648, pp. 100-104].

Contention 4f: The Rim Country Project FEIS and supporting documents provide fire modeling; however, they fail to provide maps of and an analysis of the risk to PACs, Nest/Roost Replacement Habitat, and Foraging/Non-Breeding Habitat. [Objection, p. 42]

Response: Fire modeling was done to assess the risk to PACs and recovery habitat and is included in the Analysis of Effects in Alternative 2 and 3 [PR 686, pp. 305-306, 316-318].

The terrestrial wildlife biologist prepared a BA for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. The BA includes proposed treatments in MSO PACs and recovery habitat with descriptions and locations shared with USFWS [PR 534, pp. 1-416]. Wildfire risk was one of the three components considered in the analysis to propose treatment in PACs [PR 541, pp. 175, 232-274]. Maps were not made available to the public because they include sensitive nest and roost locations; however, the Forest Service provided PAC and recovery habitat spatial data to the Center for Biological Diversity as requested during the objection period [PR 724, pp. 1-4].

A summary of the analysis of effects to MSO and its critical habitat by alternatives is included in the FEIS [PR 686, pp. 268-275, 287-324].

Contention 4g: The Rim Country Project FEIS and supporting documents fail to provide for a specific monitoring plan for MSO and treated MSO habitat for any finite post-treatment period of time. This ignores the concerns of the MSO Leadership Forum (pp. 2, 3, 5, 6, 7, 9, 12, 13, 14, 16, 19, 24, 25, and 26). The fact that the Biological Opinion fails to provide such a specific monitoring plan also violates the law and legal precedent. [Objection, p. 42]

Response: For federally threatened and endangered species, the standard of review applied is whether or not the project analyzed and consulted on effects to listed species with USFWS in compliance with the ESA Section 7(a)(2). The terrestrial wildlife biologist prepared a BA for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. USFWS's BO determined the project's level of anticipated take is not likely to result in jeopardy to the MSO [PR 648, pp. 100-104]. A summary of the analysis of effects to MSO and its critical habitat by alternatives is included in the FEIS [PR 686, pp. 265-275, 287-324].

Please see the response regarding monitoring under Contention 4a (3).

These monitoring requirements demonstrate the Forest Service's intent to protect MSO within the Rim Country Project.

Contention 4h: The Forest Service is legally responsible for compliance with the Endangered Species Act. Missing from the FEIS, its accompanying documents and the Biological Opinion are scientific and legal provisions essential to avoid jeopardizing MSO. Essential to avoiding jeopardy are (1) the provision of a regionwide habitat monitoring program, (2) an analysis of the environmental baseline and its inclusion in a jeopardy analysis, and (3) a project specific and regionwide experimental monitoring program documenting the status of MSO comparatively in both treated and untreated areas especially where mechanical thinning is involved and so little is known about its effects on MSO (see MSO Leadership Forum pages 4, 5, 21, 23 and 27). You cite the Forest Service's April 10, 2015, response to your 4FRI 1 objections that stated: "There is mutual recognition of the need to evaluate the impacts of vegetation treatments on Mexican Spotted Owl (MSO) and its habitat at a broad scale.... We have agreed to convene a working group that will design such a study." You state that this has never happened. [Objection, pp. 42-44]

Response: The standard of review applied is whether the project analyzed and consulted on effects to listed species with USFWS in compliance with the ESA Section 7(a)(2). The terrestrial wildlife biologist prepared a BA for consultation on listed species and critical habitat affected by the project, including the federally threatened MSO [PR 541, pp. 161-212, 232-272]. An analysis of the environmental baseline was included in the BA and used by the USFWS to determine in the BO that the project's level of anticipated take is not likely to result in jeopardy to the MSO [PR 648, pp. 100-104]. A summary of the analysis of effects to MSO and its critical habitat by alternatives is included in the FEIS [PR 686, pp. 265-275, 287-324].

To each of your points, the Forest Service has complied with the ESA and developed monitoring for the Rim Country project and regionwide for the MSO, as follows:

1. As part of the Region 3 Mexican Spotted Owl Management Strategy, the Forest Service has developed a “regionwide habitat monitoring program” for MSO in the “Mexican Spotted Owl Map Application” (Living Map). The Living Map estimates MSO habitat trends from approximately the last 35 years and will be updated annually [PR 487, pp. 1-7].
2. See above for compliance with ESA that included the environmental baseline in the USFWS’s jeopardy analysis.
3. Project-specific monitoring for MSO is included in the Rim Country FEIS and supporting documents, in particular that the plan development would be led by USFWS [PR 688, p. 13]. Please see the response regarding monitoring under Contention 4a (3).

By implementing the Region 3 Mexican Spotted Owl Management Strategy (including regionwide habitat monitoring) and monitoring at the project-level for Rim Country, the Forest Service demonstrates its commitment to follow the MSO Recovery Plan.

ISSUE 5: The Rim Country Project’s protections for Inventoried Roadless Areas.

Contention 5a: The proposed mechanical treatments in the Rim Country FEIS treat IRAs as part of the general forest matrix, subject to mechanical treatments for as long as 20 years. They almost all contain listed species or their habitat. All the IRAs display high scenic values. These IRAs should not be treated in the same way more disturbed areas in the Rim Country landscape are. In adopting the Roadless Rule, the Forest Service anticipated that logging in IRAs under this specific exception would only occur following a project-level NEPA analysis that evaluated specific conditions at the stand level. The FEIS and Roadless Area Specialist Report fail to disclose the necessary stand-specific data and analysis required by the Roadless Rule, as described in the Rule’s preamble, as well as required by NEPA. The Forest Service proposes to approve mechanical thinning and other tree removal within specific parts of eight roadless areas. The Forest Service describes “roadless areas” as a whole, apparently across all of the three forests, and without addressing conditions within each area. It is unclear whether the Forest Service data, history, and graphs included in the FEIS relate to IRAs impacted by the project, all IRAs on the three forests, or those specific parts of 8 IRAs that lie the project area. Of the eight IRAs to be “treated” by the project, five IRAs contain acreage outside the project. The Forest Service’s citation to “IRAs” is thus vague. Further, the Forest Service makes clear that the agency does not know which treatments it will apply to which stands, because, as with the rest of the project, the agency uses condition-based management. It is therefore impossible for the Forest Service to comply with the Roadless Rule’s expectation that the agency will analyze and disclose the stand-specific impacts of treatments based on stand specific reviews disclosed in a NEPA document. The analysis of the impacts of treatments on roadless area characteristics contains virtually no analysis specific to individual IRAs, let alone to stands within specific stands within IRAs. [Objection, pp. 45-50]

Response: The 2001 Roadless Area Conservation Rule (Roadless Rule) prohibits the cutting, sale, and removal of timber in inventoried roadless areas (IRAs), with limited exceptions. One such exception is at 36 CFR 294.13(b)(1), which allows the cutting, sale, or removal of generally small diameter timber when the Responsible Official determines it is needed for one of the following purposes and will maintain or improve one or more of the roadless area characteristics:

- (i) To improve threatened, endangered, proposed, or sensitive species habitat; or
- (ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period.

As stated in the preamble to the Roadless Rule, the agency recognized that science-based forest management might require some level of vegetative management in inventoried roadless areas, and this exception was designed to provide for this management (see *56 Federal Register* at 3257). You are correct in stating that the preamble indicated the use of this exception would only occur when a project-level NEPA analysis indicates that the cutting, sale, or removal of trees will contribute to the ecological objectives described in § 294.13(b)(1) (Id.). However, the Rule does not prescribe what the NEPA analysis should look like, or even the scope of the analysis, as long as the analysis supports the Responsible Official's determination that the cutting, sale, or removal of trees is needed for the purposes discussed above and will maintain or improve one or more of the roadless area characteristics.

There is no indication that anybody expressed concerns about the proposed activities in IRAs during scoping for the project, and roadless was not identified as an issue that contributed to alternative and design feature development and/or focused the analysis for the EIS [PR 686, Chapter 1]. One comment regarding the activities proposed in IRAs was received during the comment period on the DEIS for the project [PR 688, pp. 383-384]. In response to this comment, the IDT completed a separate IRA analysis [PR 678] and incorporated into the FEIS, by reference, analysis prepared for a briefing for the Regional Forester on the use of the exception. Much of the information used in these analyses was incorporated from prior resource-related analyses including, but not limited to, those covered in the effects analyses for wildlife, aquatic resources, air, soils, recreation, cultural resources, and hydrology [PR 686, Chapter 3]. The potential effects on any of these resource areas would not be different simply because they are within or outside of IRAs, and the potential effects of the project on these resources were clearly disclosed in the DEIS. Many of these resource areas contribute to the roadless characteristics defined in the Roadless Rule (36 CFR § 294.11), and, based on the analyses discussed above, the project's effects on these characteristics are discussed in the briefing document for the Regional Forester's review of the use of the exception at 36 CFR § 294.13(b)(1) [PR 616, pp. 5-16].

The project record clearly indicates the areas within the IRAs to be treated, along with the types of treatments assigned to each area [PR 598; PR 678]. The Inventoried Roadless Area Specialist Report [PR 678], prepared by a team of interdisciplinary specialists, identifies each roadless area, discusses the roadless characteristics of each area, and has detailed information on the acres within each area to be treated, including different types of treatments. IRAs will not be treated the same as non-roadless areas or as "general forest matrix" during project implementation. When treatments in IRAs are planned for implementation, the "decision tree," or decision-

making process, described in the FEIS will be followed, but with added design features or “modifiers” to ensure resource protection, consistency with the Roadless Rule, and maintenance of roadless area characteristics [PR 686, pp. 39-40; PR 687, pp. 287, 314, and 337; PR 616]. As discussed in the FEIS, there are specific design features associated with IRAs, but treatments in IRAs will also need to follow the standard resource protection design features for the specific activities that are conducted within IRAs.

Stands within and outside IRAs are far outside the natural range of variation in terms of composition, and structure, for the cover types included. Most of these areas have not experienced normal fire regimes in over 100 years, missing many fire intervals (see, for example, PR 678 and PR 616). The Rim Country project activities, including the proposed treatments in IRAs, have been designed to modify fire behavior and allow cover types within IRAs to return to their normal fire regimes. Without action within these areas, they will continue to depart further from the desired condition. As discussed in the FEIS, the IRA specialist report [PR 678], and the Regional Forester briefing and concurrence document [PR 616], the treatments proposed within roadless areas will maintain or improve the roadless area characteristics of the IRAs in the project area. The analyses in the FEIS (including resource-specific analyses) and project record are sufficient to: 1) disclose the potential effects of project activities on the resources within each IRA and 2) inform the Regional Forester’s review and concurrence that the proposed treatments in IRAs are consistent with the Roadless Rule (36 CFR 294.13(b)(1)).

Contention 5b: Many of the IRAs at issue include steep canyons, where logging with mechanized equipment is more likely to damage sensitive soils and threaten other values. The Forest Service makes clear that the project authorizes mechanical treatments on steep slopes, although it prohibits cable logging with IRAs. The Forest Service does not explain how it will undertake mechanical thinning on slopes over 40% within IRAs without using cable logging, and how it will ensure that such treatments will not degrade soils or other values. [Objection, pp. 50-51]

Response: As discussed above, much of the information used in the analyses of the project’s potential effects on IRAs was incorporated from prior resource-related analyses including the effects of the project on soils [PR 686, Chapter 3]. The potential effects would not be different simply because they are within or outside of IRAs.

As summarized in the Inventoried Roadless Area Specialist Report and the FEIS, mechanical thinning within IRAs may cause soil compaction, puddling, displacement, erosion, loss of soil organic matter, short-term changes in soil moisture content or retention, changes in nutrient cycles, changes in soil fauna, and introduction of invasive and noxious weeds. However, thinning of forest cover will improve soil conditions over the long-term by improving soil moisture and allowing greater sunlight penetration to the forest floor. The increased vegetation will reduce soil erosion rates by providing vegetative ground cover that will intercept rain before it can reach soil surfaces and detach and entrain soil particles in runoff. Woody debris from forest thinning (slash) will be lopped and scattered where doing so will not result in excessive fuel loads, further mitigating potential adverse effects to soils and watershed resources. Finer litter and woody debris that is incidental to forest vegetation treatments (such as needles, leaves, twigs, cones, bark, etc.) will also remain on the ground following mechanical treatments to protect soil surfaces from wind and water erosion [PR 678, p. 22].

Some of the specific design features in FEIS Appendix C to protect soils specific to steep slopes were to leave sufficient coarse woody debris to promote reestablishment of vegetation and prevent erosion as discussed in number SI012 [PR 687, p. 289] and spread slash on all skid trails located on steep or erosion prone slopes in number SW036 [PR 687, p. 297]. The slash will provide surface roughness and prevent concentrated runoff which could cause accelerated erosion as discussed in number SW033 [PR 687, p. 296] and can reduce rutting, compaction and soil disturbance from mechanized equipment when placed on travel corridors from discussion in number SW025 [PR 687, p. 295]. Viability and authorization of specialized equipment on slopes greater than 25% in areas with highly erodible soils etc. will be determined during the layout phase by the pre-sale forester and a watershed specialist as discussed in number SW044 [PR 687, p. 298]. The Soils and Watershed Resource Report, Appendix B, further breaks down specific soil map units including those on steep slopes and potential management strategies specific to these units [PR 682, pp. 135-158]. Prior to project contract closure, the authorized Forest Service contract team member or sale administrator in consultation with a watershed specialist or other applicable specialist will verify the contractor has properly implemented the BMPs and that erosion control measures are acceptable with minor deviation from established standards and guidelines providing no major or lasting impact to the soil resource as noted in number SW042 [PR 687, p. 298]. Modern mechanized ground-based equipment use on slopes greater than 40 percent will adhere to Best Management Practices designed to protect soils and water quality and will not result in adverse effects on soil and water resources [PR 687, p. 260].

The mechanical treatments proposed in the IRAs of the project area will be used to move the area towards desired conditions [PR 686, p. 23]. As discussed in the FEIS, advances in technology can allow mechanical treatments on steep slopes without adverse effects on soil resources [PR 687, p. 260]. Treatments will only occur on slopes greater than 40 percent where not otherwise restricted and where the use of mechanized ground-based equipment will not result in adverse effects on soil and water resources. As with all proposed treatments, mechanical restoration treatments on slopes greater than 40 percent will adhere to the Rim Country Project design features and Best Management Practices designed to protect soils and water quality (Id.).

The proposed treatments for IRAs include up to 7,298 acres for thinning and prescribed burning, and up to 9,602 acres for prescribed burning without thinning. All treatments would be consistent with the proposed treatments by forest stratum and MSO habitat components and would not include road construction of permanent or temporary roads. Thinning treatments could only occur where timber could be skidded to adjacent areas outside of IRA locations without road construction or felling small diameter trees without removal will accomplish objectives. "The cutting of timber for removal is expected to be infrequent because operations in the IRAs would be of limited scope and duration over a 20-year or more time span... Though no temporary or permanent roads are a part of the proposed action, multiple entries into IRAs would be necessary to complete restoration activities. For mechanical treatments, a single entry with chainsaw falling crews, feller bunchers, log skidders, trucks and/or similar equipment will be necessary and could last multiple seasons depending on the size of the mechanical operation. Another entry would be necessary for each prescribed fire activity and would require the use of hand crews, ATVs, engines, trucks, and/or similar equipment. Entry for prescribed fire operations would occur separately from mechanical operations. Any subsequent prescribed fire operations would occur seasons after initial entry, depending on fuel accumulation and predicted fire behavior. Re-entry into the IRAs for product removal would not be necessary. In addition to the actions described,

land managers would also have the flexibility of managing naturally ignited wildland fires for the protection and enhancement of Forest values.” Additionally, the following constraints are placed on treatments in IRAs: 1) Temporary roads shall not be built in Inventoried Roadless Areas. 2) No road realignment or reconstruction is allowed in Inventoried Roadless Areas; 3) Strive to make stump heights 8 inches above ground (uphill side) or lower, with 12-inch heights the exception and rarely occurring; 4) Slash must be treated or removed; 5) Use existing barriers (roads) and natural barriers as control lines whenever possible; and 6) Cable operations shall not be conducted in Inventoried Roadless Areas [PR 678].

Please see instruction related to this Contention in the Conclusion section below.

ISSUE 6: The Rim Country Project and the impacts of livestock grazing.

Contention 6a: A careful evaluation of livestock grazing’s impacts as it relates to the proposed action is necessary because status quo grazing will likely undermine the project’s restoration goals; each goal could be achieved in part by reducing livestock grazing numbers and distribution. The Forest Service should consider both the synergistic and cumulative impacts of continued livestock grazing together with the tree removal and burning the project proposes. Continued livestock grazing will interfere with, or undercut the efficacy of, restoration projects, and reducing livestock grazing numbers and distribution could make other mitigation measures less necessary or more effective. Livestock grazing concurrent with the proposed action may adversely impact forest resilience. Continued livestock grazing also threatens the success of efforts to restore diverse wildlife habitats and improve watershed conditions and will undermine efforts to achieve the Rim Country Project’s purpose and need. The Forest Service, however, fails to take the required hard look at the impacts of livestock grazing, the interaction of livestock grazing with those caused by the Rim Country Project. The Forest Service will fail to restore the Rim Country landscape if livestock management is not part of a comprehensive restoration package. Failing to acknowledge the baseline causes of the issues that the proposed action seeks to address turns a blind eye to not only the source of environmental degradation, but to potential solutions to respond to those causes. The FEIS fails to address the issue of overgrazing of upland and riparian ecosystems, despite admitting that “[c]onifer tree removal, restoration of fire, and appropriate livestock numbers are all necessary to restore structure and function of native grasslands.” (p. 321) This failure to acknowledge the root causes of the current degraded environmental condition violates NEPA. [Objection, pp. 52-68, 77-78]

Response: The project describes its purpose and need, which does not include a focus on livestock management. However, implementation of the project’s restoration purpose does account for the potential need to address grazing concerns. Further, the project analyses take into consideration how various resources have and could be cumulatively affected by grazing and the action alternatives.

The purpose of the 4FRI Rim Country Project is to restore and maintain the structure, pattern, health, function, and composition and diversity in forests and grasslands across the landscape, thus moving the project area toward the desired conditions in the respective land management plans [PR 686, pp. viii, 21]. Both existing and desired conditions that drove the purpose and need also are described [PR 686, pp. 11-19]. Grazing effects to springs are mentioned in the existing conditions discussion [PR 687]. As indicated in the response to comments, livestock

management actions are not specifically addressed in this project and are covered under other NEPA decisions [PR 688, p. 292].

Grazing contributions to the affected environment or cumulative effects of the project were described for multiple resources including aspen decline and springs [PR 686, pp. 15, 16, respectively]. Prior and existing grazing and allotment decisions were indicated in the table of past, present, and reasonably foreseeable projects supporting the cumulative effects analyses for various resources [PR 686, pp. 95-106]. Consideration for grazing impacts also was included in the comprehensive restoration treatments to restore and improve habitat for aquatic and terrestrial wildlife and rare plants via construction of barriers to protect sensitive areas and species from grazing [PR 686, pp. 48, 50]. Potential effects of over-grazing were a primary factor in why the alternative to eliminate prescribed fire and use grazing for fuel reduction was not carried forward for further analysis [PR 686, p. 67].

The FEIS [PR 686, pp. 110, 148, 212, 254, 405, 406] and the Range Specialist Report [PR 676, pp. 8-10] discusses historical livestock management and how this may have resulted in current conditions. The Response to Comments [PR 688, p. 297] discusses that this project will allow for more herbaceous understory as canopy cover is reduced and current livestock utilization levels remain the same and not result in the conditions brought on by historical livestock grazing.

More specifically, the *Water and Riparian* section describes legacy effects from past land management – such as overgrazing – to streams springs and wetlands within the project area [PR 686, pp. 109-110, 123, 137]. These findings are consistent with the *Soils and Watershed* section that included consideration of livestock grazing and concluded that cumulative effects from livestock grazing to soils or watershed condition when added to effects from restoration treatments would be minor and localized with negligible effect on soils or watershed condition [PR 686, p. 142]. The *Silviculture* section further described grazing contributions to the undesirable current forest structure [PR 686, pp. 144, 148]. The *Fire Ecology* section indicated historic grazing was one contributor to landscape homogenization [PR 686, pp. 198, 212]. Past effects of grazing were also considered in the descriptions of cumulative effects for *Noxious and Invasive Weeds* (p. 264), *Wildlife* (pp. 344, 346, 348, 351), and *Aquatic Habitats and Species* (pp. 366, 384, 386, 397, 406) [PR 686]. Impacts from grazing to aquatic species and riparian areas were not expected to result in a net cumulative effect of disturbance to aquatic species or habitats [PR 686, pp. 405-406]. Cumulative effects from proposed actions and grazing to various species of rare plants were considered and were not likely to result in a trend toward federal listing or loss of viability [PR 686, pp. 424-434]. The *Range* section summarized past and ongoing effects to and from grazing, including existing and affected environment [PR 687, pp. 85-89].

Cumulative effects were sufficiently analyzed and addressed through the mitigation measure (design features) developed in the FEIS. While there is potential for negative impacts to the project area due to the cumulative effects of livestock grazing, mitigation measures (design features), including current livestock management, allows for deferment of pastures, reduction in livestock numbers on an annual basis, and construction of fences to protect impacted areas if necessary.

Cumulative effects of livestock grazing are discussed in the FEIS for various resource sections: pages 123 (water quality), 142 (livestock grazing), 264 (noxious and invasive species), 344 (wildlife), 346 (wildlife), 348 (wildlife), 351 (wildlife), 353 (wildlife), 405 (aquatics); FEIS Vol 2 pp. 85 (range), 89 (range) [PR 686]. The Range Specialist Report also discusses cumulative effects [PR 676, p. 71].

Besides accounting for the project's cumulative effects from grazing and the action alternatives, the project provided protections from these potential effects. Fencing to protect spring outflows from ungulates is indicated in table 72 [PR 686, p. 386]. The project also includes design features to protect herbaceous regrowth post-treatment from livestock grazing if necessary (RM004, SW012) [PR 686, p. 401; PR 687, p. 166]. Mitigation adjustments to reduce effects on forage species were considered, such as rest or deferment and would be managed adaptively based on site conditions. These mitigations have shown to maintain static understory conditions in grazed areas [PR 687, pp. 87-89].

Mitigation measures are discussed in the FEIS Volume II on pages 85 and 87 (range), 166 (recreation), 168 -169 (recreation), and Appendix C (design features) on pages 281 (FE001, RM004), 288 (SI003), 289 (SI011), 293 (SW012), 294 (SW014, SW018).

Appendix C demonstrates multiple measures that would protect restoration efforts from future negative grazing effects, including SI002 which considers delays in burning and retaining felled trees in place or using them as grazing barriers; and SW012 deferring grazing within an Aquatic Management Zone (AMZ) affected by prescribed fire treatment in order to: reestablish groundcover, promote recovery and establishment of riparian species, protect floodplain function, and provide for resilient stream systems [PR 687, pp. 288, 293, respectively]. Several aquatic design features also allude specifically to fencing in riparian areas and to protect forage and treatments from grazing [PR 687, pp. 264-265, 272, 282, 288, 296]. Furthermore, descriptions preceding ecological objectives for seeps and springs, wet meadows, grasslands, and Gambel oak in Appendix D *Implementation Plan for Alternatives 2 and 3* described how conditions pertaining to effects from grazing would be considered as part of the decision modifiers during treatment implementation [PR 687, pp. 318, 320, 321, 323-324]. As part of CBM for aquatics and watershed restoration treatments, grazing actions and aquatic and springs conditions are special management considerations and decision modifiers [PR 687, pp. 338, 339, 340, and table D-4 p. 350].

Further details were provided in the *Range Specialist Report*: Livestock grazing is authorized through term grazing permits. Allotment Management Plans (AMPs) are developed through a separate NEPA process that analyzes stocking rates, season of use, and management for allotments. The FEIS discusses that increased forage resulting from the implementation of this project will allow for more flexible livestock management and distribution and does not indicate an increase in livestock numbers [PR 687, p. 87]. An increase in permitted numbers would require a grazing authorization analysis which would have to occur separate from this project. The purpose and need for this project are not directly related to the permits or AMPs. Although no permanent changes to the stocking, season of use, or management will occur with this decision, annual changes could occur, if deemed necessary. These changes may include rest or deferment of pasture, and would be discussed as needed, such as during the Annual Operating Instruction meetings [PR 676, p. 1]. The *Monitoring and Adaptive Management Plan* in

Appendix E also includes consideration of future grazing effects on restoration goals, including ensuring pasture readiness prior to grazing, and adaptive management based on invasive species surveys [PR 688, pp. 18, 33, 47 respectively].

Many of these assertions were raised previously, and the response to comments in Appendix H partially addressed these issues. Generally, responses indicate that as part of implementation adaptive management is applied to livestock management, such as stocking and season of use which are specified within an annual operating instruction developed with and issued to the grazing permittee. The analysis of current livestock grazing management impacts on the project area as a driver for the need for this project, and the analysis of livestock management on upland and riparian vegetation is not part of the purpose and need of the Rim Country EIS. This annual operating instruction will specify levels of use for the allotment, generally 25 to 40 percent use [PR 688, pp. 293-301].

Cumulative effects were sufficiently analyzed and addressed through the mitigation measures (design features) developed in the FEIS.

Contention 6b: Continued livestock grazing risks post-treatment invasion of exotic plants. Exotic plant spread is a potentially significant cumulative impact of the proposed action. [Objection, pp. 66-68]

Response: The project appropriately considered invasive species risks as part of existing conditions and the cumulative effects analyses. However, the project is not proposing decisions regarding livestock grazing, which are covered under different NEPA decisions.

CEQ Regulation 40 C.F.R. §1508.7 defines cumulative impacts, and both Forest Service Regulation 36 C.F.R. §220.4(f) and Forest Service Handbook FSH 1909.15 (15.3) describe the cumulative effects analysis method. Furthermore, Executive Orders 13112 and 13751 direct considerations for addressing invasive species issues.

The *Noxious and Invasive Weeds* section of the FEIS contains an analysis of the project's affected environment and potential effects of the action alternative regarding this resource concern. Ongoing grazing is considered in the discussion of cumulative effects [PR 686, pp. 259-265]. Applicable laws, regulations, policies, and relevant Forest Service Manuals addressing noxious and invasive weeds were included in *Appendix I – Law Regulation and Policy* [PR 688, p. 407].

The project addresses risk of invasive plant spread with the inclusion of multiple design features and best management practices and monitoring indicated in Appendix C [PR 688, pp. 279-280]. Prior invasive plant monitoring results and invasive species monitoring from the 4FRI 5-, 10-, and 15-year monitoring reports will also help inform anticipated project effectiveness monitoring and adaptive management [PR 688, pp. 2 and 12, respectively]. *Implementation monitoring questions and metrics* indicated in table E-1 include tracking whether treatments to reduce or manage noxious weeds occurred [PR 688, p. 17]. Invasive species monitoring also is described under *Biophysical Monitoring for Composition* in terrestrial and aquatic ecosystems and is a suggested indicator for multiparty monitoring in Table E-3 [PR 688, pp. 30-33, 46].

Clarifying comment responses regarding mitigations proposed to reduce the threat of invasive species spread also were provided. Responses further clarified that this restoration decision was not about livestock management though that is a factor considered during implementation [PR 688, pp. 171, 293]. The response to comments pertaining to weeds also has a robust explanation for how noxious weed detection, spread, and mitigation were considered [PR 688, pp. 379-382].

Contention 6c: The FEIS fails to include important information to understanding grazing's historic impacts. The Range Specialist Report contains stocking rates over time, and up to 2020, for the Coconino National Forest, it contains no such information for either the Apache-Sitgreaves or the Tonto National Forest. The agency neither addressed nor explained this omission. The failure to include or explain the omitted data is arbitrary and capricious and demonstrates a failure to take the hard look NEPA requires. The FEIS fails to disclose the cumulative impacts of the Rim Country project together with livestock grazing. [Objection, pp. 72-73]

Response: The project analysis takes into consideration how various resources have and could be cumulatively affected by grazing and the proposed actions. The project did include range data from 2020 in response to the commenter's prior request.

See also response to Contention 6a regarding cumulative effects analyses. CEQ Regulation 40 C.F.R. §1502.15 states that an EIS should be succinct and include data and analyses commensurate with the importance of the impact. Additionally, Forest Service Regulation 36 C.F.R. §220.4(e)(3) addresses consideration of past actions in cumulative effects analysis. It states the agency must determine what information regarding past actions is useful and relevant to the required analysis of cumulative effects but does not require agencies to catalogue or exhaustively list and analyze all individual past actions - even if that information may be available or obtained with reasonable effort.

Stocking rates are addressed in the response to comments, which indicated they were referenced in the Range Specialist Report. Comment responses also indicated that rates were simply to compare past and current livestock management and contributions to current conditions, but livestock management would be analyzed through Allotment Management Plans rather than this decision PR 688, p. 295]. Further, the response to comments indicated that data for the 2020 grazing year had been added to the Range Specialist Report [PR 688, p. 295]. Table 1 *Allotment Review* in the *Range Specialist Report* indicated it is reflective of current stocking numbers [PR 676, p. 4]. However, while a table of more detailed historic stocking levels is provided for the Coconino, there is a narrative discussion of historic data and summary numbers for the A-S and Tonto in lieu of an additional table [PR 676, p. 4]. The project information provided in these documents appears to address the prior comment and request to consider how past grazing and stocking levels affected the current existing conditions in the project area.

As noted in the response to Contention 6a, cumulative effects from past and ongoing grazing and action alternatives were adequately considered in the pertinent resource sections. Also as previously indicated, the project purpose is not about livestock management, though those uses were considered in the project implementation plan.

Contention 6d: The FEIS fails to disclose that continued livestock grazing will undercut project efforts to restore ecosystems and restore riparian areas. The FEIS, disclosing the deteriorated condition of riparian stream miles and springs, shows that whatever management standards are in place for AMPs are failing to protect those resources. Rather than disclose that livestock grazing will hamper recovery of riparian areas, the FEIS asserts that restoring riparian areas will make possible heavier grazing use of those areas. This assertion is arbitrary and ignores that riparian restoration depends on livestock removal. The Rim Country Project's purpose is not to restore riparian areas for cattle; it is to restore riparian areas' hydrologic and ecologic function, which decades of data demonstrate that, in the arid West and the project area, such restoration is generally not compatible with livestock grazing. [Objection, pp. 73-74]

Response: The project describes its purpose and need, which does not focus on livestock management but does include a need to improve the condition and function of streams and springs and restore woody riparian vegetation [PR 686, p. 21]. Further, the project analyses, implementation plan, and adaptive management approach take into consideration the potential effectiveness of proposed aquatic restoration actions and how treatments may be adjusted based on several potential thresholds and ongoing or future project conditions, including continued grazing.

CEQ Regulation 40 C.F.R. §1502.13, Purpose and Need, requires the agency to state the purpose and need of the project specifying to what the agency is responding in proposing the alternatives including the proposed action. The purpose of the 4FRI Rim Country Project is to restore and maintain the structure, pattern, health, function, and composition and diversity in forests and grasslands across the landscape, thus moving the project area toward the desired conditions in the respective land management plans PR 686, pp. viii, 21]. Both existing and desired conditions that drove the purpose and need also are described [PR 686, pp. 11-19]. Grazing effects to springs are mentioned in the existing conditions discussion. It also includes a need to improve the condition and function of streams and springs and restore woody riparian vegetation [PR 686, p. 21]. As indicated in the response to comments, livestock management actions are not specifically addressed in this project and are covered under other NEPA decisions PR 688, p. 292].

See the response to Contention 6a for details about how the project considered grazing in its cumulative effects analysis of past, present, and reasonably foreseeable actions.

The FEIS provides restoration methods for springs and riparian resources [PR 687, pp. 355-358, Tables D10, D11, D12, D13, D14]. Design features, best management practices, mitigation, and conservation measures for springs and riparian areas are required to minimize or avoid negative impacts from project activities [PR 687, Appendix C, p. 265-AQ012, p. 288-SI002, p. 289-SI011, p. 293-SW012, p. 301-SW060]. Additional design features, BMPs, mitigations, and conservation measures include but are not limited to: SW-12 grazing deferment (p. 293), SW-14, and SW-18 aquatic congregation avoidance (p. 294), SW19 appropriate siting of spring developments (p. 295); SI003 include enclosure fencing or rest/deferment after treatment (p. 288) [PR 688]. The effects of treatments are analyzed and disclosed throughout Chapter 3 of the FEIS, including impacts to springs and riparian resources [PR 686, pp. 107-142]. An Aquatic Restoration Review Team [PR 686, pp. 341-360] will be established to guide restoration priorities and review all site-specific aquatic and restoration proposals submitted. This team will

utilize appropriate restoration methods based on existing conditions, resource issues, and concerns.

Furthermore, Forest Service Regulation 36 C.F.R. §220.3 defines Adaptive Management and describes how intended outcomes would be monitored under this approach to determine whether adjustments or re-evaluation are necessary as the project is implemented under potentially uncertain natural resource systems knowledge. 36 C.F.R. §220.5(e)(2) further indicates that adjustments and monitoring during implementation must be disclosed and described.

Appendix D Implementation Plan: Section D Integration of Aquatic and Upland Management Activities and Condition-based Management Approach for Aquatic and Watershed Restoration Treatments – lay out how aquatic restoration would proceed as part of special management consideration during project implementation [PR 688, pp. 328-329, 338-360]. The project then details an adaptive management approach towards aquatic restoration in the FEIS Vol 3 *Appendix E Monitoring and Adaptive Management Plan*, including *Aquatics* starting with a description of monitoring types: biophysical - to demonstrate movement towards desired conditions: effectiveness - to see the extent management is moving towards restoration goals; implementation - to see if selected actions were carried out as planned; and validation - to see if assumptions were supported or undermined [PR 688, pp. 4, 11]. Table E-1 indicates implementation monitoring metrics for channel and aquatic restoration (p. 17); priority monitoring tiers and biophysical monitoring desired conditions for aquatic resources are described on pp. 19-21; with specific aquatic habitat suitability, thresholds, and adaptive management actions described on pp. 22-24, 28, 30-31, 35, 38, 40, 41 43-44; and in Table E-3, *Suggested Indicators: Forest Service and multiparty monitoring needed for adaptive management* (pp. 51, 56, 57-60) [PR 688].

As noted in prior responses, this project does not focus on livestock management, but it does take into consideration how adaptive management and CBM can address current undesirable aquatic conditions and any uncertainties in the landscape response to aquatic restoration actions.

Finally, responses in Appendix H specifically address several comments and objections related to livestock grazing on pp. 293, 296-298, 299, 300 and watershed section #4 on page 358 [PR 688]. Cumulative effects analysis as discussed in Contention 6a also apply here. The mitigation measures (design features) associated with current livestock management will continue after the implementation of this FEIS, so livestock numbers, pasture rotation, and areas fenced out from grazing will continue to be analyzed while livestock grazing is permitted and authorized.

The FEIS provides restoration methods for springs and riparian resources [PR 687, pp. 355-358, Tables D10, D11, D12, D13, D14]. Design features, best management practices, mitigation, and conservation measures for springs and riparian areas are required to minimize or avoid negative impacts from project activities [PR 687, Appendix C, p. 265-AQ012, p. 288-SI002, p. 289-SI011, p. 293-SW012, p. 301-SW060].

The effects of treatments are analyzed and disclosed throughout Chapter 3 of the FEIS, including impacts to springs and riparian resources [PR 686, pp. 107-142].

Action alternatives include, among other actions, construction of protective barriers and replumbing spring improvements to reduce impacts from livestock grazing [PR 686, p. 49]. Exclosures would not be available for livestock grazing, would not be large enough to reduce pasture stocking rates, and spring projects would not have a measurable impact on the capacity of allotment or grazing management [PR 687, p. 88].

The FEIS discusses that an increase in permitted numbers is not addressed in this project but would be addressed during the allotment management planning process; there is no discussion of increasing grazing in riparian stream miles and springs. Response to Contention 6h further discusses mitigations and spring restoration [PR 688, pp. 294-295].

Please see instruction related to this Contention in the Conclusion section below.

Contention 6e: The FEIS alleges that the project's logging will increase the restoration of understory vegetation, which will in turn allow for increased grazing. Thus, rather than protecting understory plants that can carry low-intensity fire, one of the project's goals, the Forest Service proposes to increase such plant production to benefit the livestock industry, again ignoring the damaging impacts livestock have on the understory. The FEIS also asserts that high-intensity logging will be beneficial in part because it will increase forage for livestock. The EIS fails to address that livestock grazing helped cause the conditions that the Forest Service asserts high-intensity logging is needed to address, and that increased grazing pressure will likely lead to a repeat of those conditions. The Forest Service has designed a process to benefit livestock while failing to consider how reducing livestock numbers and/or distribution could achieve project goals, an arbitrary and capricious approach, and one that ignores the cumulative effects of livestock grazing on the project's goals. The Forest Service admits that while livestock grazing played a key role in creating overstocked forests, the agency asserts, without basis, that the problem can be solved without doing anything about livestock grazing. This arbitrarily ignores that livestock will worsen conditions if not carefully managed, and that the Forest Service cannot address the problem of overstocked forests without addressing livestock grazing, one of its root causes. [Objection, pp. 73-74]

Response: The project describes its purpose and need, which does not include a focus on livestock management or the purpose of forage increase. However, the analyses do indicate there could be increased forage production, and the implementation of the project's restoration purpose does account for the potential effects to forage and the need to address grazing concerns during and after restoration treatments. Further, the project analyses take into consideration how silviculture and range resources have and could be cumulatively affected by grazing and the action alternatives. See also response to Contentions 6a and 6d regarding the project's purpose and need and how grazing was addressed in existing conditions and cumulative effects from the action alternatives.

The *Silviculture* section and report further described grazing contributions to the undesirable current forest structure [PR 686, pp. 144, 148]; as do both the *Silviculture Report* (especially pp. 60-104) and *Range Specialist Report* [PR 680, 676, respectively]. Historic livestock grazing was addressed in multiple locations in the FEIS. The FEIS [PR 686, pp. 110, 148, 212, 254, 405, 406], *Silviculture Report* [PR 680, p. 70] and the *Range Specialist Report* [PR 676, pp. 8-10] discusses historical livestock management and how this action may have resulted in current

conditions.

As part of comment responses, it was also indicated that livestock grazing is one of many multiple uses of National Forest System lands, and that a potential effect of actions would be an increase of forage production. However, as in other responses it was reiterated that no changes to permitted numbers were analyzed within this but instead during the allotment management planning processes [PR 688, pp. 293-300]. As noted in the response to Contention 6d, there also was consideration for grazing effects during project implementation and with adaptive management thresholds accounting for potential post-treatment adjustments related to grazing and forage.

The FEIS [PR 688, pp. 293-300] clarifies that an increase in permitted numbers is not being analyzed in this project. This action, and any action specific to livestock management would be analyzed during the allotment management planning process.

Contention 6f: The FEIS fails to address the impacts of redistributing livestock grazing via “adaptive management.” The FEIS fails to explain whether the allotment management plans use bona fide adaptive management to achieve the goals as set out in policy and regulations, and to consider as either part of an alternative or as a mitigation measure eliminating livestock grazing. Decades of study demonstrate that removing livestock from significant portions of the Rim Country project area would help to: (1) increase forest resilience and sustainability; (2) improve terrestrial and aquatic species habitat; (3) improve the condition and function of streams, springs, and other aquatic and hydrological resources; and (4) restore riparian vegetation. The FEIS, in responding to comments incorrectly asserts that grazing management is outside the scope of the proposed action. This is false because grazing management to a great extent caused the problems the project seeks to address, and because improved grazing management would help correct those problems and meet the needs the project was designed to address. Simply taking livestock management off the table was arbitrary and capricious. Even if the Forest Service concludes it need not address grazing management as part of an alternative, the Forest Service should have analyzed as a mitigation measure reducing or eliminating livestock from much of the project area, or from key landscapes (such as riparian areas). Failing to address such a mitigation measure deprived the public and the decision-maker of valuable information about the efficacy, costs, benefits, and tradeoffs of a key tool to achieve the project’s purpose and needs. The measures the Forest Service proposes to adopt demonstrate that the agency considers fostering grazing management to benefit livestock as within the scope of the Rim Country Project. It is only limiting livestock to meet the project’s purpose and need of forest and riparian restoration that the agency (arbitrarily) considers outside the project’s scope. [Objection, pp. 72-78]

Response: During the comment period you mentioned removing livestock from riparian areas but did not propose the elimination of livestock as an alternative or as a mitigation measure.

The purpose and need are clearly stated and the effects from and to grazing are articulated in several resource sections. While overall management analyses and capacity decisions may be made in separate allotment management decisions, condition-based decisions about grazing exclusion and resting pastures after treatments are also ways of managing livestock mentioned in this proposal.

NEPA does not require the consideration of every conceivable alternative. Instead, the range of alternatives considered is determined by the purpose and need for action. Reasonable alternatives to the proposed action should fulfill the Purpose and Need and address unresolved conflicts related to the proposed action (see also CEQ regulations at 40 CFR 1500.2; 1501.2(C); 1502.14; and Forest Service Regulations at 36 CFR 220.5 (e)). The FEIS described the purpose and need (see response to Contentions 6a and 6d) and further described the approach to considering alternatives, and how alternatives were dismissed from detailed analysis [PR 686, pp. 34-35, 64-70]. Furthermore, while grazing was analyzed in multiple resource sections (see prior responses for detailed page numbers), grazing was not identified as a significant issue [PR 686, pp. 27-30]. CEQ regulation 40 C.F.R. §1501.7(a)(3), requires the Forest to identify and eliminate from detailed study issues which are not significant or which have been covered by prior environmental review (§1506.3)...” In responses to comments, it was indicated that decisions and analyses pertaining to livestock management were made in other NEPA decision documents including the allotment management plans, and that consideration had been given to grazing as part of cumulative effects [PR 688, pp. 293-302]. However, as indicated in other responses, besides consideration in the cumulative effects, there also were project design criteria, mitigation measures, and monitoring indicators and adaptive management implementation considerations related to grazing (see responses for Contentions 6a-6e).

Contention 6g: The FEIS fails to disclose the environmental baseline by failing to address livestock grazing’s role as a key driver in the current fire regime and the role of livestock grazing in the current degraded upland and riparian conditions within the project area. Livestock are one of the key drivers of ecosystem dysfunction in fire-adapted ecosystems and riparian/aquatic ecosystems. Logging, livestock grazing, and fire exclusion created the conditions that now require ecological restoration. The FEIS fails to adequately describe livestock grazing as a significant cause of impaired ecological function or departed structure in grasslands and savannas. Livestock grazing directly contributes to fire hazard in the project area by impairing soil productivity and altering vegetation communities, which indirectly contribute to delayed fire rotations, increased forest density, and reduced forage opportunities for herbivorous species and predators. It will be difficult to impossible to restore fire to the landscape, the primary objective of restoration, if grazing inhibits or makes impossible prescribed burning, as it has inhibited a low-intensity fire regime in the past. [Objection, pp. 70-72]

Response: The project disclosed the effects of grazing, including cumulative effects and the impacts on fire regimes and the ability to implement the project.

CEQ Regulation 40 C.F.R. §1508.7 defines cumulative impacts, and both Forest Service Regulation 36 C.F.R. §220.4(f) and Forest Service Handbook FSH 1909.15 (15.3) describe the cumulative effects analysis method. Grazing contributions to the affected environment or cumulative effects of the project were described for multiple resources [PR 686]. Prior and existing grazing and allotment decisions were indicated in the table of past, present, and reasonably foreseeable projects supporting the cumulative effects analyses for various resources [PR 686, pp. 95-106]. Potential effects of over-grazing were a primary factor in why the alternative to eliminate prescribed fire and use grazing for fuel reduction was not carried forward for further analysis [PR 686, p. 67].

See also response to Contention 6a as to how grazing was considered in the affected environment and cumulative effects for various resources. The *Fire Ecology* section in the FEIS indicated historic grazing was one contributor to landscape homogenization [PR 686, pp. 198, 212]. This also coincides with discussion in the *Fire Ecology Specialist Report* which described the impacts of grazing to the affected environment fire regimes, mixed conifer vegetation types [PR 674, pp. 31-32, 47, 103].

In the comment responses, further explanation was provided about the effects of grazing and the implementation of burning.

Burn plans would consider the fuel loads and types needed to carry fire, and coordination would occur between range and fire managers, along with the best management practices and design features indicated in Appendix C of the FEIS. The response also concluded that with the remaining herbaceous biomass, the needle cast, and other fuels, it is not expected that when combined with the herbaceous response associated with implementation livestock grazing would alter the desired fire return intervals or change the fire regimes. If more herbaceous matter is needed for prescribed burning, design feature RM007 includes coordination between range and fire managers to determine if rest or deferment would be needed [PR 688, pp. 294-295 numbers 1,4].

Prior and existing grazing and allotment decisions were indicated in the table of past, present, and reasonably foreseeable projects supporting the cumulative effects analyses for various resources [PR 686, pp. 95-106]. Potential effects of over-grazing were a primary factor in why the alternative to eliminate prescribed fire and use grazing for fuel reduction was not carried forward for further analysis [PR 686, p. 67].

The *Silviculture* section further described grazing contributions to the undesirable current forest structure [PR 686, pp. 144, 148]. The *Fire Ecology* section indicated historic grazing was one contributor to landscape homogenization [PR 686, pp. 198, 212]. Past effects of grazing were also considered in the descriptions of cumulative effects for *Noxious and Invasive Weeds* [PR 686, p. 264], *Wildlife* [PR 686, pp. 344, 346, 348, 351], and *Aquatic Habitats and Species* [PR 686, pp. 366, 384, 386, 397, 406]. The *Range* section summarized past and ongoing effects to and from grazing, including existing and affected environment [PR 687, pp. 85-89].

Appendix C demonstrates multiple measures that would protect restoration purposes from future negative grazing effects, including SI002 which considers delays in burning and retaining felled trees in place or using them as grazing barriers; and SW012 deferring grazing within an AMZ affected by prescribed fire treatment in order to: reestablish groundcover, promote recovery and establishment of riparian species, protect floodplain function, and provide for resilient stream systems [PR 687, pp. 288, 293].

The Monitoring and Adaptive Management Plan in Appendix E also includes consideration of future grazing effects on restoration goals, including ensuring pasture readiness prior to grazing, adaptive management based on invasive species surveys [PR 688, pp. 18, 33, 47].

Condition-based management would be important as the project is implemented, and livestock management would be adapted to allow different livestock rotations in pastures before or after

mechanical and prescribed fires treatments in alignment with project goals.

Contention 6h: The FEIS admits that more than half the springs in the project area “exhibit declining or degraded conditions where restoration treatments may be applied,” (p. 16) but it does not specifically address excluding livestock as a way to restore these critical areas. The FEIS fails to disclose that achieving desired conditions for streams and aquatic habitats will be unlikely if livestock grazing continues along stream corridors. [Objection, pp. 71-72]

Response: See also the responses to Contentions 6d and 6f. The project describes its purpose and need, which does not focus on livestock management but does include a need to improve the condition and function of streams and springs and restore woody riparian vegetation [PR 686, p. 21]. It also describes alternatives considered, and those dismissed from further consideration. Finally, the project proposal, analyses, implementation plan, and adaptive management approach take into consideration the potential effectiveness of proposed aquatic restoration actions and how treatments may be adjusted based on several potential thresholds and ongoing or future project conditions, including continued grazing.

The FEIS provides restoration methods for springs and riparian resources [PR 687, pp. 355-358, Tables D10, D11, D12, D13, D14]. Design features, best management practices, mitigation, and conservation measures for springs and riparian areas are required to minimize or avoid negative impacts from project activities [PR 687, p. 265-AQ012, p. 288-SI002, p. 289-SI011, p. 293-SW012, p. 301-SW060].

The effects of treatments are analyzed and disclosed throughout Chapter 3 of the FEIS, including impacts to springs and riparian resources [PR 686, pp. 107-142].

An Aquatic Restoration Review Team [PR 686, pp. 341-360] will be established to guide restoration priorities and review all site-specific aquatic and restoration proposals submitted. This team will utilize appropriate restoration methods based on existing conditions, resource issues, and concerns.

Design features, best management practices, mitigation, and conservation measures for springs and riparian areas are required to minimize or avoid negative impacts from project activities. Specifically for mitigating livestock access to these areas it states to install fence to reduce ungulate grazing and excessive soil disturbance (D10). Also, in table D-13 it states removing instream stock tanks and replacing with guzzlers, drinkers, etc. in the uplands using mechanical equipment to restore channel width, sediment flow and water source. In FEIS Appendix C [PR 687, Appendix C, p. 265-AQ012, p. 288-SI002, p. 289-SI011, p. 293-SW012, p. 301-SW060] the following design features are listed:

Install fencing as necessary to prevent access to revegetated sites by grazing ungulates or unauthorized persons (page 265).

Minimize removal of desirable vegetation around springs, streams and wetlands (page 265).

Exclosure fencing to prevent utilization of plantings by deer, elk, and livestock is permitted (page 288). See also RM006 on page 282.

Felled trees may be left in place, lower limbs may be cut and scattered, or all or part of trees may be used for streambank or wetland restoration in order to provide surface roughness and bank stabilization or as necessary to protect riparian or wetland shrubs from grazing by livestock or wildlife (for example, jackstraw barriers) (page 289).

Domestic livestock grazing within an AMZ affected by prescribed fire may be deferred until ground cover is adequately re-established as per guidance outlined in RM004 (page 293).

Protect site with slash spread across the disturbed area to create microclimates and protect from grazing ungulates (page 301).

The mitigation measures (design features) listed above will be effective at excluding livestock from areas where it is deemed necessary.

The effects of treatments are analyzed and disclosed throughout Chapter 3 of the FEIS, including impacts to springs and riparian resources [PR 686, pp. 107-142].

An Aquatic Restoration Review Team [PR 686, pp. 341-360] will be established to guide restoration priorities and review all site-specific aquatic and restoration proposals submitted. This team will utilize appropriate restoration methods based on existing conditions, resource issues, and concerns.

Conclusion

I have reviewed the project in light of the issues presented in the objection letters. My review finds that the project is fully compliant with all applicable laws and the Apache-Sitgreaves, Coconino, and Tonto National LMPs. However, based on my review and discussion with the Forests and the review team members, and you during our objection resolution meeting, I am asking the Forest Supervisors to clarify or expand on the project record in the following areas:

- **Contention 1g:** Clarify in FEIS Appendix D, Implementation Plan, Aquatics and Watershed Restoration Condition-based Management Section, that decommissioning of NFS roads during project implementation will focus on recommendations already identified in Forest-level TARs and Travel Management decisions and that all unauthorized roads within the project boundary will be considered for decommissioning as part of the 800 miles considered. State that the Forest Service recognizes that some activities impacting existing NFS roads (including decommissioning) may require additional site-specific NEPA decisions. Describe considerations and applicable design features for the use of unauthorized roads as temporary roads for implementing treatments.
- **Contention 1g:** Add explicit roads considerations to the description of the tracking process in FEIS Appendix D, Implementation Plan. Tracking should ensure mileages of road actions do not exceed those allowed by the selected alternative as well as application of Appendix C design features to roads actions.

- **Contention 3a:** Add a description of how vegetation treatments would be prioritized to FEIS Appendix D, Implementation Plan Section D, Condition-Based Management Approach for Vegetation-focused Restoration Treatments.
- **Contention 4a:** Change a statement in FEIS Appendix D, Implementation Plan, Recovery Nesting/Roosting Habitat Mechanical Thin and Burn Treatment Design from “Retain all trees greater than 24 inches d.b.h.” to “Retain all trees greater than 18 inches d.b.h.”
- **Contention 4a:** Add the following text to FEIS Appendix D, Implementation Plan, Implementation Plan Checklist: “Has the Pre-implementation Compliance Review for the Regional Mexican Spotted Owl Recovery Strategy been completed (see appendix K) and made publicly available as applicable?”
- **Contention 5b:** Review the mechanical treatments in Inventoried Roadless Areas and adjust the acres of mechanical treatments based on this review. In evaluating the treatments consider stand density, feasibility based on steep slopes, and accessibility to roads. In the FEIS, clearly state in Chapter 2 and Appendix D that mechanical treatments in IRAs will only occur in the identified areas and will be spatially fixed. Add detailed maps that outline these areas to the Inventoried Roadless Area Specialist Report and reference in Chapter 2 and Appendix D.
- **Contention 6d:** Remove or clarify the following statement in the FEIS Chapter 3, Range analysis, page 88: Stream and riparian area restoration would have a long-term benefit to livestock grazing management by increasing forage and by improving bank stability.

Once these instructions are addressed, the Forest Supervisors may sign the final Record of Decision. My review constitutes the final administrative determination of the Department of Agriculture; no further review from any other Forest Service or Department of Agriculture official of my written response to your objection is available [36 CFR 218.11(b)(2)].

Thank you again for your participation in this project and the objections process.

Sincerely,

ELAINE KOHRMAN
Deputy Regional Forester

cc: Laura Jo West; Neil Bosworth; Judith Palmer; Kara Kirkpatrick-Kreitinger; Roxanne Turley