Eastern Arizona Counties Organization

Economy - Ecology

Land - People - Future

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By electronic submission: https://cara.ecosystem-management.org/Public/CommentInput?project=48210

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Re: Eastern Arizona Counties Organization ECO Rim Country DEIS comments.

Dear 4FRI Planning Team;

On behalf of the Eastern Arizona Counties Organization (ECO), thank you for the opportunity to submit comments on the Rim Country DEIS.

The Eastern Arizona Counties Organization is made of the six counties of Apache, Navajo, Gila, Greenlee, Graham and Cochise, most of which stand to be directly impact by the Rim Country project.

In collaboration with the Forest Service, ECO has been an integral part of the 4FRI planning effort since 2009. Together with the other 4FRI Stakeholders we successfully developed in 2015 a robust Environmental Impact Statement (EIS) and Record of Decision for the 1st 4FRI analysis area that is now being implemented as part of the largest forest restoration effort in the country. We look forward to duplicating this success with the Rim Country EIS in order to extend restoration treatments along the entire Mogollon Rim, over an area totaling in excess of 2 million acres.

The comments expressed in this letter represent the concerns and recommendations of the Eastern Arizona Counties Organization.

Uncertainties Associated With the Scale of Future Mechanical Thinning

As of the end of Federal Fiscal Year 2019, the Phase 1 contract has resulted in the implementation of 12,701 acres of mechanical thinning treatments.

Summary by Fiscal Year	Acres expected to be treated	Acres awarded	Acres Treated
Fiscal Year 2013 (Oct 1, 2012 to Sept 30, 2013)	30.000	13,444	800
Fiscal Year 2014 (Oct 1, 2013 to Sept 30, 2014)	30.000	12,821	1,547
Fiscal Year 2015 (Oct 1, 2014 to Sept 30, 2015)	30.000	22,827	2,405
Fiscal Year 2016 (Oct 1, 2015 to Sept 30, 2016)	30.000	4,865	3,242
Fiscal Year 2017 (Oct 1, 2016 to Sept 30, 2017)	30.000	0	1,080
Fiscal Year 2018 (Oct 1, 2017 to Sept 30, 2018)	30.000	1,776	1,562
Fiscal Year 2019 (Oct 1, 2018 to Sept 30, 2019)	30.000	7,927	2,065
Total to date	**210,000**	**63,660**	**12,701**

This represents a 6% completion rate of the up-to-date contract objectives.

The underperformance of the Phase 1 contract obviously raises serious contracting issues, but these are not relevant to the NEPA process. What is relevant to the NEPA process is the failure to implement the purpose and need under the selected Alternative.

In the framework of the Rim Country NEPA analysis, two Alternatives offer two different approaches to meeting the Rim Country purpose and need. Alternative 2 emphasizes a large number of acres being treated through mechanical thinning then fire. Alternative 3 emphasizes a significantly smaller number of acres being treated through mechanical thinning then fire, and a much larger number of acres being treated with fire as a first entry. Both alternatives have merit, and quite practically whether Alternative 2 or Alternative 3 is the most apt at accomplishing the purpose and need, will depend largely on the 4FRI industrial capacity.

Current capacity is generally estimated to be around 15,000 acres/year with the White Mountain industry (Show Low, Snowflake, Eagar, Nutrioso), and, based on existing operating infrastructure, less than 3,000 acres/year with the Flagstaff/Williams industry.

The required capacity to implement the stated objective of 4FRI is a minimum of 50,000 acres/year, in addition to the capacity required to continue to implement specific projects outside of the 4FRI NEPA (Escudilla, Black River, CC Cragin, etc.). A total capacity of 55,000 to 65,000 acres/year is therefore desirable.

The Forest Service is currently engaged in an RFP process advertised to seek up to 40,000 acres/year additional capacity (800,000 acres over 20 years). Assuming that the current White Mountain industry continues to implement 15,000 acres/years, the total capacity would reach 55,000 acres/year. This is close enough to generally meet the purposes and needs of both 4FRI First Analysis and Rim Country analysis.

However, public information made available in the last 60 days triggers considerable uncertainties:

1. Industry members have indicated publicly during the November 4FRI Stakeholders meeting that the existing White Mountain industry members who intend to submit proposals in response to the RFP will file proposals that will not result in an increase of existing capacity, but in a displacement of capacity.

2. Notices of Intent to sue filed by Wild Earth Guardians, first at regional level, then more recently specifically with the Coconino, Kaibab and Apache/Sitgreaves forests over the monitoring of the Mexican Spotted Owl population, are likely to create considerable uncertainty with potential investors as to the stability of the 4FRI social license.

As an outcome of these factors, it is distinctly possible that the RFP may not result in the type of capacity increase required to implement Alternative 2.

CONCERN: there are both a spatial and a temporal element to the implementation of the Rim Country NEPA purpose and needs. Should the RFP process fail to deliver over the next 24 to 36 months the expected tripling or quadrupling of mechanical thinning capacity, it may prove impossible to implement timely the Rim Country purpose and need under Alternative 2. Conversely, selecting Alternative 3 prior to the conclusion of the multi-year attempt to increase capacity could constrain negatively the ability to attract industry investments.

> RECOMMENDATION: it appears advisable to envision, possibly under the Flexible Toolbox concept, to potentially re-allocate a significant number of acres from a 'mechanical thinning then fire' approach to a 'fire as first entry' approach, should the attempt to triple or quadruple mechanical thinning capacity fail.

Uncertainties Associated With the Removal of Woody Biomass

As recently verified with the Museum Fire, the removal of substantially most of the woody biomass cut during mechanical thinning is critical to accomplish the reduction of hazardous fuel load and the mitigation of the risks of catastrophic fire outlined in the purpose and need of the Rim Country NEPA analysis.

The Rim Country DEIS appropriately states (DEIS, p. 142): "All cutting simulations assume 15 percent of the cut stems are left on site and 10 percent of the branchwood from the cut and removed stems are left on site. All other biomass resulting from the cutting is assumed to be removed." This implies that 85% of the cut stems are removed from the site and 90% of the branchwood from the cut and removed stems are removed from the site.

While comments on the Rim Country DEIS is not the appropriate place to comment on the RFP language, it is the appropriate place to comment on the implementation of the purpose and need, and the implementation of the actions that are being analyzed and the effects of which are being disclosed.

To this purpose, there appears to be a contradiction between the requirement of the NEPA analysis for 85% of the cut stems 90% of the branchwood removal, and the slash removal/on-site disposal requirements in the RFP (Executive Summary, p. 13):

> "Additionally, each proposal will be evaluated on the ability to meet the slash removal and/ or on-site disposal requirements as follows:
> Removal and/or on-site disposal of slash:
>
> a. 90% or greater: Exceptional
> b. 80% - 89%: Very good
> c. 70% - 79%: Satisfactory
> d. 50% - 69%: Marginal
> e. Less than 50%: Unsatisfactory"

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CONCERN: although it remains to be determined how the combined percentage of removal of cut stems and branchwood correlates with the percentage of removal of slash, the possibility of a contract award to a proposal that would be judged "Marginal" (50% to 69% biomass removal), or even "Satisfactory" (70% to 79% biomass removal) could create legal ground for a litigation and injunction based on a claim that the NEPA requires the removal of a higher percentage.

> RECOMMENDATION: it appears advisable to harmonize the definition and quantification of biomass removal between the NEPA analysis and the RFP selection criteria, and/or to clarify in the NEPA document the role of on-site biomass/slash treatments such as pile & burn, and the possibility for on-site biomass/slash disposal.

Uncertainties associated with the implementation of condition-based management / flexible toolbox approach

The goal of the NEPA process is to analyze and disclose the effects of management actions taken to implement the purposes and needs identified in proposed actions.

For individual and cumulated effects to be accurately analyzed and disclosed, it is necessary to identify very specifically what are the current conditions, what are the desired (future) conditions, and what treatments will be implemented to meet the desired conditions. This is generally comparatively easy to achieve with limited scale projects over comparatively short periods of time.

Landscape scale restorations projects are different, and the Rim Country project illustrates these differences and the challenges they create. While there is a very high level of consensus regarding the Rim Country desired conditions, and there are well defined treatments available to meet the desired conditions, there is a certain level of uncertainty regarding desired conditions. Despite the constant progress of GIS technology, on-the-ground conditions (soil composition, stand characteristics, stand conditions, etc.) occasionally deviate from GIS modeling. The need may therefore exist to implement on the ground different treatments than the ones that were analyzed: this is condition-based management.

Before a national effort was initiated by the Forest Service to codify condition-based management, the concept was integrated in the Rim Country project under the name "flexible toolbox approach" (FTA).

ECO wants to be absolutely clear that we support the concept of condition-based management and the Rim Country flexible toolbox approach.

There are however implementation concerns.

CONCERN #1: because the purpose of the NEPA is to analyze and disclose the effects of the management actions, condition-based management and flexible toolbox field decisions must by definition still fit under the umbrella of analyzed actions. We are concerned that at the DEIS stage the Rim Country NEPA is not providing the mechanisms necessary to insure that potential flexible toolbox decisions will fit inside the NEPA analysis. There is the distinct possibility that the FTA could result in treatments acreage exceeding the analyzed acreage.

> For example: if the ROD includes 250,000 acres of treatment X, and the decision is made that Task Order ABC needs to have 10,000 acres of another treatment changed to treatment X based on existing conditions, how does this work? Are the 250,000 acres analyzed, a hard limit? Is there a +/- xx% margin? Must 10,000 acres of treatment X be removed somewhere so that they can be added to Task Order ABC? If a "swap" is required, what is the tracking mechanism

between Forest? Districts? Alternatively, if a pool of acres is set aside for FTA implementation, how is this pool managed spatially and temporally? How do we ensure that all the flexibility is not used during the first couple year of a 20 year implementation?

To summarize, the concern is to ensure that the implementation of the FTA is flexible enough so that it can accomplish its purpose, but organized enough so that the implementation of the project is not open to litigation for violation of the ROD.

> RECOMMENDATION #1: ECO does not believe that this issue should be postponed to a subsequent Implementation Plan, as it is likely that some of the flexibility of the FTA implementation tool must be incorporated in a level of NEPA flexibility. We recommend that the FTA / condition-based management implementation process be developed in parallel to the NEPA analysis, and we are willing to participate in this work.

CONCERN #2: recent field trips have illustrated how different personnel from different Forests, or even different Districts within the same Forest, can interpret current conditions in drastically different ways. Assigning Draft Mistletoe Ratings (DMR), identifying Stands with Preponderances of Large Young Tress (SPLYTs), or assessing openness are typical examples. Clearly, individual professional education, expertise, experience, etc. with the various concepts of restoration continue to lead to decision-making that is unquestionably in good-faith but occasionally unexpected.

For stakeholders to be comfortable with the FTA, there is a need for a predictable, reliable and repeatable process of FTA implementation. This process does not exist at the current stage of the Rim Country DEIS. Considerable efforts have been invested by the USFS 4FRI Team and the DEIS Workgroup to develop a decision matrix for the selection of treatments, but the operationalization of this matrix has so far not been addressed.

> RECOMMENDATION #2: as part of recommendation #1 (above) that the FTA / condition-based management implementation process be developed in parallel to the NEPA analysis, ECO believe that cross training between the USFS 4FRI Team, the various Districts (implementers) and the stakeholders is absolutely crucial for a consistent interpretation of the 4FRI documents across administrative boundaries and a consistent implementation of the FTA.

Support for, agreement with, and incorporation of the 4FRI collaborative workgroup comments

Through participation and co-Chairing of the work of the DEIS Workgroup, ECO contributed fully to the drafting of the 4FRI Stakeholders collaborative comments by the four co-Chairs of the DEIS Workgroup. The consensus comments provided by the 4FRI Stakeholders incorporate many of ECO's concerns.

In order to simplify the task of the USFS 4FRI Team, rather than paraphrase the 4FRI Stakeholders collaborative comments and create redundant response work, ECO is happy to incorporate in its own comments the 4FRI collaborative workgroup comments as follows.

Flexible Toolboxes

The RC DEIS encompasses a vast planning area of considerable biological complexity, for which existing data can be limited and sometimes inaccurate—stand exams being a prime example. ECO understands

this creates a need for flexibility during implementation, in order to ensure that a particular unit of the landscape receives the appropriate restoration treatment.

To address this need, the RC DEIS includes a Flexible Toolbox Approach with two Flexible Toolboxes—one for mechanical treatments in terrestrial uplands and one for work done to restore watersheds and aquatic systems. Both are examples of "Conditions-based 4FRI Stakeholder Comments Rim Country DEIS Management," an emerging paradigm for Forest Service projects across the western US. ECO understands the intent of Flexible Toolboxes on Rim Country, but has numerous outstanding questions and concerns about the Flexible Toolbox Approach presented in the DEIS. At this point, we are not in a position to present a consensus statement on this approach.

We also note that the Conditions-based Management approach is complex, controversial among 4FRI stakeholders, and, to our knowledge, has yet to be evaluated in a rigorous scientific framework. Under these circumstances, ECO feels that the Forest Service must proceed cautiously, articulating the RC DEIS Flexible Toolboxes as clearly as possible, with inclusion of appropriate sideboards to maintain stakeholder support.

Concerns and Recommendations Applicable to both Flexible Toolboxes

CONCERN #1: Restoration efforts in aquatic systems and terrestrial uplands (through the two Flexible Toolboxes) should be effectively integrated. The RC DEIS treats the two Flexible Toolboxes as discrete entities and decision processes, which may complicate prioritization/implementation of projects, decrease efficiency, and potentially compromise outcomes on the ground. For example, there are situations where needed or planned restoration of an aquatic system will influence treatment selection in the adjacent uplands and vice versa; however, the RC DEIS lacks a mechanism to address this.

> RECOMMENDATION #1: ECO recommends that the Forest Service work with stakeholders to develop an effective bridge between aquatic and terrestrial restoration efforts and their respective Flexible Toolboxes, and include this in the Final EIS.

CONCERN #2: The RC DEIS lacks a robust framework for allocating and tracking treatment application temporally and spatially. The overarching concern is that flexibility provided by the Flexible Toolboxes could inadvertently result in an overall action with individual and/or cumulative effects that are different or in excess of those analyzed and disclosed in the EIS.

ECO is also concerned that treatments be applied across the four-forest footprint in a manner that is predictable, reliable, and repeatable over the lifespan of the EIS. These concerns are most critical for the Mechanical Treatments Flexible Toolbox, but apply to the Watershed and Aquatics Flexible Toolbox as well. Assuming that the Flexible Toolbox cannot result in more acres than analyzed in the NEPA decision for each type or intensity of treatments, the Mechanical Treatments Toolbox poses particular challenges for implementation—one can envision scenarios under which the acreage limit for a particular thinning treatment is reached well before work is completed across the planning area or where the acreage allocated to that treatment is concentrated on a relatively small area.

ECO understands that the Forest Service has processes and reporting in place that collect some of the data needed to track implementation, but these are not standardized across Forests/Districts nor integrated in a manner that can support all four forests.

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RECOMMENDATION #2: ECO recommends that the Forest Service allocate sufficient resources to develop an appropriate tracking system, with coordination at the Region, Forest, and District levels. We request that this tracking system be incorporated in the Final EIS (FEIS) Implementation Plan and: (a) effectively allocate treatments with fixed acreage limits across Forests and Districts; (b) ensure that treatment acreages do not exceed sideboards in the ROD; (c) ensure consistent interpretation of decision criteria and treatment application over shelf-life of the Rim Country ROD with a mind toward the inevitable staff turnover; (d) allow tracking of accomplishments in near-real time, and last but not least (e) provide regular, timely updates to ECO and interested members of the public. Accurate tracking of what treatments are actually implemented will be critical to the validity of the monitoring and adaptive management framework, and will ensure compliance with the ROD.

Concerns and Recommendations Applicable to the Mechanical Treatments (Terrestrial) Flexible Toolbox

CONCERN #1: The treatments' decision process should be clearly interpretable and understandable to stakeholders, the public, and implementers. As presented in the RC DEIS, ECO finds the Flexible Toolbox framework for Mechanical Treatments complex and extremely confusing, thereby potentially leading to inconsistent and unpredictable treatment decisions. We also note that the text narrative (RC DEIS Appendix D, Section F) is sparse on details and does not directly correspond to the decision process illustrated in the graphics and decision matrices. Most importantly, we are concerned that this process appears open to interpretation and may not provide an adequate road map for repeatable application over the expected implementation time period of this EIS.

RECOMMENDATION #1: To address these shortcomings, ECO recommends that the FEIS include a reliable implementation process that includes more complete explanations of the overall approach, filters, and decision criteria. If included, graphic illustrations of the Flexible Toolbox decision flow should be complete and correspond 1:1 with the narrative description presented in the text.

CONCERN #2: The logic framework and science underlying the decision parameters and their quantitative thresholds in the Decision Matrices (DEIS Appendix D, Section F) are not clearly articulated. The Forest Service provided a verbal explanation to the DEIS WG on October 7, 2019.

RECOMMENDATION #2: ECO recommends that this information be added to the FEIS along with appropriate citations from the scientific and professional literature.

CONCERN #3: There is uncertainty whether or not acreages for each treatment type represent fixed ceilings. In meetings with the DEIS WG, the Forest Service has indicated that the acreage allotted to a particular treatment can be decreased, but cannot be increased, as the EIS Effects Analysis is bounded by the upper amount. This suggests a "trade-off" process is relied upon for the implementation of the Flexible Toolbox; any such process needs to be captured more fully in the FEIS. ECO is most concerned about higher-intensity mechanical treatments; however, the RC DEIS does not provide sufficient information for us to comment on the net acreage assigned to them (see Key Issue #2, below).

RECOMMENDATION #3: ECO recommends that operational elements of the Mechanical Treatments Flexible Toolbox be clearly explained in the FEIS and that the Forest Service work with stakeholders to develop collaboratively supported treatment acreage allocations for inclusion in the ROD.

CONCERN #4: There is insufficient clarity on the criteria used to determine changes in treatment intensity, i.e., the degree to which intensity can increase or decrease on a particular area (the former being of greatest concern to stakeholders) and specific circumstances under which such adjustments can occur. This element of the Flexible Toolbox is likewise complex and not easily understood, even for those well-versed in forest management practices. The potential for confusion among the public (and Forest Service implementers at District level) is huge, as is the negative response that could occur. In discussions with the DEIS WG, the Forest Service has explained the difference between "hard" Habitat and Forest Cover Filters and "soft" Decision Modifiers included in the Flexible Toolbox. ECO understands that "hard" Filters can change treatment type, but "soft" Modifiers only allow changes in treatment intensity. We also understand that the assigned treatment intensity can only increase when ground conditions do not match those described in the stand data, but treatment intensity can always be decreased at the implementer's discretion.

> RECOMMENDATION #4: ECO recommends that these operational elements of the Flexible Toolbox be described in greater detail in the FEIS/Implementation Plan, along with specific examples of circumstances under which treatment intensity could be adjusted up or down. These could include, but not be limited to: an area found to have different site index than indicated in the stand data, triggering a more intense treatment, or development of new residential areas or infrastructure resulting in an expansion of the WUI, that would likewise receive more intense treatment.

Concerns and Recommendations Applicable to the Watershed and Aquatic Flexible Toolbox

CONCERN #1: There is an understanding that aquatic ecosystems are integrally linked to upland forest conditions and that restoration treatments in the uplands will improve both aquatic and watershed health; however, there is concern that restoration specifically focused on aquatic systems may take a back seat to work done in the uplands. ECO understand the pressing need to restore forest ecosystems that are outside the natural range of variability and pose significant risks to communities and resource values. However, restoration of degraded aquatic systems is an equally high priority to 4FRI stakeholders. Over the course of RC DEIS preparation, the Arizona Game and Fish Department, Forest Service, Trout Unlimited, and US Fish and Wildlife Service have worked collaboratively to identify and prioritize aquatic habitat restoration needs within the Rim Country footprint.

These recommendations reflect known site-specific conditions as well as long term restoration goals identified in Arizona Game and Fish Department watershed management plans applicable to the planning area. An example plan for the Verde River Watershed can be found at http://arcgis.azgfdportal.com/verdewatershed

> RECOMMENDATION #1: ECO recommends that this list of prioritized restoration projects (Appendix II) be included in the FEIS.

CONCERN #2: The RC EIS and ROD should provide site-specific coverage for priority projects. ECO understands that environmental review is an expensive, time-consuming process and that Forest Service capacity for NEPA is increasingly constrained. Efforts like the Rim Country EIS should preclude or minimize the need for additional NEPA before initiating a project.

> RECOMMENDATION #2: ECO recommends that the FEIS provide site-specific coverage for priority restoration projects listed in Appendix II. The Rim Country final decision should be

sufficiently clear so as to prevent the need for, and confusion about, additional NEPA on these projects. Additionally, we consider it important that the Forest Service maintain flexibility to conduct additional restoration work in any other aquatic system within the Rim Country footprint that is not listed in Appendix II, which may be needed after the ROD is signed (e.g., following damage to aquatic systems from post-wildfire floods).

CONCERN #3: As a CFLRP project, stakeholder engagement is required throughout the planning and implementation of projects associated with the RC DEIS.

RECOMMENDATION #3: ECO recommends establishing a formal coordination process between the Forest Service and stakeholders that occurs when planning watershed/aquatic restoration projects. Early engagement with stakeholders will facilitate accomplishment of priority projects, help leverage additional funds, and facilitate sharing of resources and site specific information.

Degree Of Openness Pre- And Post-Treatment

The degree of forest stand openness following mechanical thinning is a significant concern among stakeholders, which is exacerbated by the ill-defined "interspace" concept used in the RC DEIS.

CONCERN #1: "Interspace" is a spatial concept that does not directly translate into quantitative metrics of forest structure readily understood by stakeholders and the public. This creates considerable uncertainty about conditions following mechanical thinning, which may or may not comport with stakeholder expectations. For example, on field trips to the Chimney Springs Task Order (1st EIS, Coconino NF), stakeholders saw considerably different openness on areas thinned to the same level of interspace. We also saw areas thinned to different levels of interspace that were visually indistinguishable. To address this uncertainty, stakeholders have previously requested that pre- and post-treatment conditions (and the treatments themselves) be described in terms of "canopy cover and openness," removing "groups," "interspaces" and other confusing or redundant terms. Until these canopy cover/openness data are in hand, ECO cannot comment on treatment designs that are potentially controversial, but we want to register our concern with these.

RECOMMENDATION #1: The Forest Service has verbally agreed to develop canopy cover/openness metrics for inclusion in the FEIS, as part of the ongoing collaborative efforts with the stakeholder DEIS Work Group. This work is recommended to incorporate learning from implementation on the 1st EIS area as well as available literature on the natural range of variability for canopy cover, openness, aggregation, and other relevant metrics (literature bibliography attached as Appendix III). If interspace is used in implementation, the FEIS should provide a clearly understood and repeatable method for estimating interspace as well as a crosswalk with canopy cover/openness and other relevant stand descriptors (e.g., basal area, trees per acre).

CONCERN #2: RC DEIS prescriptions include "regeneration openings," which ECO considers scientifically unjustified and a potential impediment to meeting restoration objectives. ECO asserts that regeneration openings are inconsistent with current science for frequent-fire forests as well as fundamental principles of forest restoration—which emphasize the role of natural processes rather than sustained yield from a regulated forest. There is also concern that on some sites, too-intense mechanical thinning will facilitate excess regeneration and undesirable proliferation of ladder fuels.

RECOMMENDATION #2: ECO recommends that the Forest Service remove regeneration openings from treatment designs in the RC DEIS.

CONCERN #3: There is uncertainty about the "Open Reference Condition" modifier included in the Mechanical Treatments Flexible Toolbox. In meetings with the DEIS WG, the Forest Service has explained the process for using this modifier, which we understand applies solely to mollic-intergrade soils where savannah treatments are not proposed. However, the RC DEIS presents minimal information on this treatment, consisting of a brief footnote in the Mechanical Treatments Flexible Toolbox (RC DEIS Appendix D) and definition in the Glossary (RC DEIS Appendix F). We are also concerned that the proposed approach appears subjective and open to various interpretations by implementers. For example, how would suspected mollic-intergrade soils be identified on areas where not previously mapped? Would field personnel be required to conduct standardized soil assessments (e.g., dig soil pits)? This modifier is further complicated by issues of scale, as it can be applied to "portions of a stand."

RECOMMENDATION #3: ECO recommends that the Forest Service provide a clear rationale for this modifier, including supporting science. The FEIS and Implementation Plan should also specify the process for identifying unmapped units of mollic-intergrade soils and the minimum size unit to which the modifier can apply.

CONCERN #4: There is uncertainty about the extent and location of WUI treatments and how they influence net openness across the landscape post-treatment. ECO worked with the Forest Service to develop a WUI definition for use in Rim Country. We understand that these areas will receive the most intense mechanical thinning treatment. In discussions with the Planning Team, the DEIS WG requested a summary of WUI treatment acreages by cover type and maps showing the spatial location of these treatments, also by cover type. Some, but not all of this information is currently included in the online visualization tool.

RECOMMENDATION #4: ECO recommends that the online tool and FEIS present complete information on the extent and location of WUI treatments and how they influence posttreatment conditions.

Old Growth Protection And Large Tree Retention

Since the inception of 4FRI, stakeholders have consistently asserted that cutting old growth is contrary to fundamental principles of forest restoration and unacceptable. Protecting existing old-growth and retaining large trees that represent the next cohort of old growth are central to the social license developed for landscape-scale restoration that includes mechanical thinning.

The Collaborative Forest Landscape Restoration Program (CFLRP), which funded work done under the 1st EIS, and for which a renewal proposal has been submitted (to include implementation on Rim Country), is likewise very clear about the need to conserve old/mature forest structure. During preparation of the 1st EIS, 4FRI stakeholders invested enormous effort developing a consensus "Old Growth Protection and Large Tree Retention Strategy" (OGPLTRS, see Project Record), which the Forest Service then translated into "Old Tree" and "Large Tree" Implementation Plans included in the FEIS. Our expectation has been that the substance and intent of this foundational stakeholder work will be brought forward into the RC DEIS.

CONCERN #1: At a minimum, the Rim Country EIS should incorporate old tree protections included in the 1st EIS. ECO notes that Age Class 3 trees (per Thompson 1940) have been included in the Old Tree

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Implementation Plan (OTIP, RC DEIS Appendix D) per our previous request. However, those age classes are missing from the accompanying illustration (Figure 94).

> RECOMMENDATION #1: ECO recommends that the figure be updated to match the text.

CONCERN #2: There is uncertainty in some of the language regarding old tree protection. The OTIP (RC DEIS Appendix D, p. 617) indicates that "Removal of old trees would be rare. Exceptions would be made for threats to human health and safety, and those rare circumstances where the removal of an old tree is necessary in order to prevent additional habitat degradation." The latter portion of this statement could be interpreted as "habitat degradation" caused by old trees.

> RECOMMENDATION #2: ECO does not believe this is the Forest Service's intent and recommends that the statement be clarified and include examples of habitat degradation situations requiring old tree removal.

CONCERN #3: The RC DEIS contains at least one statement inconsistent with the stakeholder old tree–large tree document and LTIPs included in the 1st EIS and RC DEIS. The "Modeling Assumptions" section of the Draft Silviculture Report (no pagination), states: "Within this project area, the majority of trees that meet the old tree definition are greater than or equal to 18". On the ground cutting prescriptions will follow the Old Tree Implementation Plan (OTIP) and trees larger than 18" that do not meet the OTIP criteria may be cut during implementation."

> RECOMMENDATION #3: This statement should be revised to be consistent with OGPLTRS/OTIP/LTIP and specify how ponderosa pine and other conifer species will be treated.

CONCERN #4: The old tree age criterion included in the 1st 4FRI EIS has not been incorporated in the RC DEIS. Section D (p. 617) of the RC DEIS defines old tree age as: "Established prior to 1870, predating Euro-American settlement."

> RECOMMENDATION #4: ECO recommends that the Forest Service replace this statement with this language from the 1st EIS: "Approximately 150 years and older."

CONCERN #5: The RC DEIS contains unnecessary language concerning application of the OTIP to subsequent NEPA decisions. From the OTIP (RC DEIS Appendix D, p. 617): "This old tree implementation plan will be applied to the Rim Country Environmental Impact Statement Record of Decision and may not apply to subsequent decisions on the same project area or on other areas within Region 3. Subsequent decisions may include an old tree implementation plan that reflects project specific current conditions and the purpose and needs of subsequent projects."

This statement is beyond the scope of the RC DEIS EIS and inconsistent with NEPA guidance provided by the Forest Service (personal communication to DEIS WG from Katherine Sanchez-Meador).

> RECOMMENDATION #5: Given the sensitivities surrounding harvest of old growth, ECO recommends that this statement be removed.

CONCERN #6: The RC DEIS should expressly prohibit harvest of old and large young ponderosa pine trees to "mitigate" dwarf mistletoe infection. This issue was brought to the forefront by a recent timber sale in the 4FRI CFLRP footprint (Little Creek TS, Apache-Sitgreaves NF), where extensive harvest of old and large ponderosa pine trees occurred, ostensibly to address forest health issues from dwarf mistletoe

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infection. As communicated in the April 27, 2017 letter to Forest Supervisor Best (see Project Record), ECO considers such practices inconsistent with the best available science, 4FRI stakeholder expectations, and the social license that has taken more than a decade to develop. We note and appreciate that the RC DEIS Implementation Plan (Section D, p. 617) states that "old trees would not be cut for forest health reasons."

RECOMMENDATION #6: ECO recommends that this language be carried forward into the FEIS.

Management Of Ponderosa Pine Dwarf Mistletoe

Over the past two years, the 4FRI Planning Team and SHG have had ongoing conversations about management of dwarf mistletoe, particularly in ponderosa pine, which the Forest Service has articulated as representing a significant threat to forest health on the RC DEIS footprint. The 4FRI Planning Team had originally proposed extremely aggressive "mitigation" treatments, including even-aged management, on a large portion of the RC DEIS planning area having estimated high levels of dwarf mistletoe. Following several meetings and field trips, ECO submitted a letter to the Forest Service (dated April 4, 2017), which stated that the Forest Service had not presented a compelling case that dwarf mistletoe infections in ponderosa pine on the planning area were significantly outside the natural range of variability and presented a meaningful obstacle to restoration. We asserted that restoration treatments followed by prescribed fire at regular intervals should be sufficient to meet objectives. The mistletoe management approach in the RC DEIS has been refined somewhat; however, it remains a core element of the Mechanical Treatment Flexible Toolbox. ECO feels that this emphasis is misplaced and inappropriate for a project ostensibly focused on ecological restoration rather than sustained-yield timber production. We also note that the RC DEIS does not clearly distinguish between dwarf mistletoe infections and associated treatments in ponderosa pine and mistletoes that occur in other conifer tree species.

CONCERN #1: Dwarf mistletoe is a high-level decision variable in the Mechanical Treatments Flexible Toolbox. This creates a perception that managing this endemic, natural disturbance agent is a restoration priority—an approach that is at odds with the best available science and stakeholder perspectives. Consistent application of this element of the Flexible Toolbox is unlikely, given the apparent subjectivity of rating stand-level mistletoe infection. For example, during collaborative field trips held by ECO and Forest Service, it was evident that perceptions of what constitutes a "severe" infection vary considerably across Forests/Districts.

RECOMMENDATION #1: ECO recommends that the Forest Service remove dwarf mistletoe as a decision variable in the Mechanical Treatments Flexible Toolbox.

CONCERN #2: The RC DEIS should incorporate the best available science applicable to management of ponderosa pine dwarf mistletoe. The RC DEIS cites some, but not all of the current science relevant to this issue.

RECOMMENDATION #2: A list of pertinent references is provided in Appendix III. ECO recommends that this information be incorporated into the FEIS, with a clear explanation of the scientific basis for the proposed treatment approach.

CONCERN #3: The initially proposed 55–70% Interspace dwarf mistletoe treatments are not supported by the best available science and contrary to SHG perspectives. Following a request from ECO, the 4FRI

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Executive Board agreed to remove these treatments from the RC DEIS (letter to SHG dated September 12, 2019, see Project Record).

> RECOMMENDATION #3: ECO appreciates this modification and recommends it be carried forward into the FEIS and ROD.

CONCERN #4: The DEIS does not differentiate between ponderosa pine dwarf mistletoe and other mistletoes. In discussions with the 4FRI Planning Team, ECO has emphasized that ponderosa pine dwarf mistletoe is but one member of that group of parasitic plants present on the RC DEIS planning area, each of which can have differing effects on host trees and cannot be treated alike from a management perspective.

> RECOMMENDATION #4: ECO recommends that the Forest Service clarify differences between the ecology and management of mistletoes in the FEIS.

CONCERN #5: The Mechanical Treatment Flexible Toolbox includes mechanical treatment of ponderosa pine stands with "severe" dwarf mistletoe infection. This approach is not supported by the best available science and contrary to stakeholder expectations. ECO has previously recommended that such stands be deferred from mechanical treatment or designated as "burn only." In discussions with the 4FRI Planning Team, the Forest Service has indicated that both options are covered under the RC DEIS, though not explicitly stated.

> RECOMMENDATION #5: ECO recommends that the FEIS/Implementation Plan clearly identify deferral or burn only as preferred options for ponderosa pine stands with "severe" levels of dwarf mistletoe.

Description Of Pre-Treatment Conditions

In comparison to the 1st EIS area, which was predominately ponderosa pine, the Rim Country planning area has a number of other forest cover types targeted for treatment, including mixed-conifer/frequent fire, mixed-conifer with aspen, and ponderosa pine-evergreen oak. The SHG understands the complexity this adds to the RC DEIS and has recommended that the document more fully address diversity of the planning area.

CONCERN #1: The RC DEIS should be more specific with respect to existing conditions and treatment allocation for target cover types present on the planning area. Stakeholders have emphasized this need in previous discussions with the 4FRI Planning Team, requesting a tabular summary and spatial representation of treatment allocation across cover types. Some of the spatial information is now available in an online visualization tool, which we appreciate.

> RECOMMENDATION #1: ECO recommends that the online tool be completed and a tabular summary made available to stakeholders and then included in the FEIS.

CONCERN #2: The RC DEIS should include spatial representation of WUIs in the planning area, overlaid by cover type and proposed treatments. ECO had previously requested that this information be added to the online visualization tool. We appreciate the Forest Service's attention to this request, but note that only some of this information is currently presented.

RECOMMENDATION #2: ECO recommends that the complete information be made available online, with a tabular summary made available to stakeholders and then included in the FEIS.

CONCERN #3: Protection of stands with a preponderance of large, young trees (SPLYT). Conservation of these stands is a high priority to stakeholders and a critical component of collaborative agreement. At the outset of the RC DEIS process, ECO and Forest Service devoted considerable collaborative effort developing a methodology to identify and map these stands. The selected approach was formally adopted by ECO, communicated to the Forest Service (see SHG Position Statement dated October 13, 2017) and appears in the RC DEIS (Section D, p. 638). However, following personnel changes on the 4FRI Planning Team, the Forest Service informed stakeholders that this approach is not viable for implementers in the field, who must verify stand conditions (including the presence or absence of SPLYT characteristics) prior to treatment assignment via the Flexible Toolbox.

RECOMMENDATION #3: ECO recommends that the Forest Service develop a replacement SPLYT methodology that leverages work already completed (e.g., stand mapping and field assessments by stakeholders and the Forest Service). This second iteration should be done collaboratively and in the field, with participation by Forest Service personnel who will use the final product.

Collaborative Role In Implementation

As a CFLRP project, the Forest Service is mandated to facilitate stakeholder engagement in all phases of 4FRI, from planning through implementation. However, since completion of the 1st 4FRI EIS, stakeholders have had limited engagement in implementation of restoration projects. ECO has a formal Multi-Party Monitoring Board (MPMB); however, that group is largely focused on long-term data collection to assess ecosystem responses to restoration treatments (effects monitoring). In discussions with the 4FRI Planning Team, we have acknowledged mutual interest in formal collaboration during implementation, in order to facilitate shared learning about treatment outcomes, assist the Forest Service with outreach to field personnel, and inform adaptive management.

CONCERN #1: There is uncertainty about the degree to which treatment outcomes will comport with CFLRP requirements and stakeholder expectations. As articulated in these comments, ECO is concerned with various aspects of implementation on Rim Country — e.g., retention of old and large trees, management of dwarf mistletoe in ponderosa pine, conservation of SPLYT stands, and application of the Flexible Toolboxes. Our expectation is that these actions will reflect stakeholder expectations and occur in a manner that is predictable, reliable, and repeatable. ECO feels this need is best addressed by more effective coordination among Forest Service staff on the Planning Team and at Forest/District level, and by creating a formal mechanism for collaborative engagement during implementation.

RECOMMENDATION #1: ECO recommends that the Forest Service work with stakeholders to develop an appropriate framework for this. A recent, informative example is attached in Appendix V (Spruce Beetle Epidemic-Aspen Decline EIS, Grand Mesa, Uncompahgre, and Gunnison National Forest).

CONCERN #2: The framework for stakeholder engagement should to be memorialized in a manner that is binding and ensures follow-through. The DEIS WG and 4FRI Planning Team have discussed and concur on this need.

RECOMMENDATION #2: The Forest Service agreed to research this question and provide appropriate guidance, that ECO recommends be carried forward with appropriate placement in the FEIS.

CONCERN #3: Collaborative implementation should be bolstered by mechanisms outside the RC DEIS. It was suggested that the 4FRI Memorandum of Understanding could be revised to meet this need.

RECOMMENDATION #3: ECO concurs and commits to working with the Forest Service and other partners on a potential revision of the MOU.

Adaptive Management And Monitoring

Science-driven monitoring and adaptive management are key requirements under CFLRP and a high priority for 4FRI stakeholders. ECO has been actively engaged in this process since initiation of the 1st EIS, under auspices of the Multi-Party Monitoring Board (MPMB). The MPMB has worked closely with the 4FRI Monitoring Coordinator to develop a new plan for the RC DEIS planning area and looks forward to continued collaboration refining the questions and approach for Rim Country. We have identified nine key concerns that should be addressed and then included in the FEIS.

CONCERN #1: The Rim Country Monitoring Plan (RC DEIS Appendix E) should be updated to reflect work completed since the 1st EIS and improvements in monitoring design.

RECOMMENDATION #1: ECO recommends the following modifications:

- Monitoring questions, indicators, triggers, and thresholds should be completed and/or updated as needed—a process that can be informed by the living monitoring document maintained by the MPMB.
- Vague wording in this section (e.g., the term “appropriate”) should be clarified with necessary context, sideboards, and direction.
- The Monitoring Plan should incorporate information from 4FRI monitoring reports including, but not limited to Hjerpe and Mottek-Lucas (2018) as well as relevant information from the RC DEIS Specialist Report (“Socioeconomic Environmental Consequences”).
- Monitoring efforts in treated areas (e.g., groundwater assessment (p. 792) should include control and pre-treatment data collection in a BACI (Before-After-Control-Impact) design to support the strongest inference.
- The Monitoring Plan will need to be updated to reflect openness metrics (and associated assessments on the 1st EIS area) being developed in collaboration with the SHG.
- Indicators (e.g., spatial metrics, forest structure, and wildlife variables) should be measured at the same scale whenever possible.

CONCERN #2: The relationship between Monitoring Plans in the 1st EIS and Rim Country needs to be clarified. The FEIS should clearly state that the Rim Country Monitoring Plan does not apply to the 1st EIS area, but rather complements it. It is also important to indicate that some indicators overlap both EIS areas, but others are unique to Rim Country.

RECOMMENDATION #2: ECO recommends that the text in RC DEIS Appendix E (p. 663) be modified accordingly.

CONCERN #3: Forest cover types, tree species, and structural components currently listed in the RC DEIS Monitoring Plan are specific to the 1st 4FRI EIS.

RECOMMENDATION #3: ECO recommends that this section be updated to reflect the Rim Country planning area. This should include additional descriptions and justification in RC DEIS Appendix E (p. 674–675) for mixed-conifer and other forest types, and adjustment of indicators, thresholds, and triggers for mixed-conifer (including monitoring of species proportions, diameter distributions, and spatial distribution of trees).

CONCERN #4: The relationship between implementation, implementation monitoring, and treatment effectiveness needs is not clearly articulated in the RC DEIS Monitoring Plan. These components need to be effectively integrated in the Monitoring Plan.

RECOMMENDATION #4: ECO recommends that RC DEIS Appendix E be expanded to articulate implementation tracking requirements, and indicate how this information will be linked to effectiveness monitoring when developing adaptive management recommendations. This could be presented in a table of similar theme as Table 130, that lists specific tracking metrics for effectiveness monitoring across Districts/Forests, which could then be reviewed with monitoring results to produce adaptive recommendations.

CONCERN #5: The RC DEIS Monitoring Plan should leverage the best available technology and tools. There have been a number of significant advancements since completion of the 1st 4FRI EIS.

RECOMMENDATION #5: ECO recommends that the Monitoring Plan be updated to include the following:

- Fire Hazard Index (FHI), a new modeling approach used in the RC DEIS analysis of fire effects, but only loosely referenced in the Monitoring Plan.
- Various technologies and products that could be used to monitor tree age structure, spatial aggregation, canopy openness, patch size, patch configuration, patch density, and patch evenness, as well as the frequency and scale (e.g., UAV based imagery on a project basis).
- Quantification of snags using LiDAR data.

CONCERN #6: Scale of the RC DEIS monitoring plans does not match the analysis area.

RECOMMENDATION #6: ECO recommends that the scale of the Biophysical and Social and Economic plans be revised as needed throughout the FEIS. This includes inclusion of language in RC DEIS Appendix E indicating that fire analyses are performed at the HUC 6 level.

CONCERN #7: References in the RC DEIS Monitoring Plan should reflect the best available current science.

RECOMMENDATION #7: ECO recommends that references in RC DEIS Appendix E be updated. Examples include, but are not limited to:

- Forest thinning and groundwater recharge (O'Donnell 2018, Moreno et al. 2016)
- Canopy openness, soil moisture, and snowpack accumulation (Broxton et al. 2019)
- Scale and grain considerations (Wasserman et al. 2019).
- Climate science (Seager and Vecch 2010, Barnes and Polvani 2013, Lu et al. 2018, Singh et al. 2018, Espinoza et al. 2018, the 2018 National Climate Assessment)

- Human dimensions and economics (Egan and Nielsen 2014, Brown 2015, Esch and Vosick 2016)

CONCERN #8: Additional detail is needed on the adaptive management process.

RECOMMENDATION #8: ECO recommends that the Monitoring Plan (RC DEIS Appendix E) more clearly articulate specific steps in the monitoring and adaptive management process (as illustrated in Figure 100) and indicate that decisions will be made in collaboration with ECO and MPMB.

CONCERN #9: The RC DEIS should more explicitly acknowledge the role of the MPMB.

RECOMMENDATION #9: ECO recommends that the FEIS emphasize the collaborative approach to monitoring and adaptive management and add language (e.g., in RC DEIS Appendix E, p. 662) indicating that the 4FRI MPMB is well established and will play a significant role going forward to comment.

ECO appreciates the efforts deployed by the Coconino, Tonto and Apache-Sitgreaves national forests and the USFS 4FRI staff and leadership to perform the thoroughly robust Environmental Impact Statement that the Rim Country Project deserves.

We urge the Forest Service Team to complete this task in the timeliest manner.

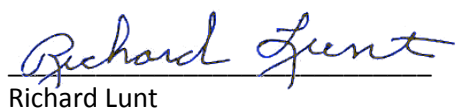
We expect to be actively involved in the development of the Final Environmental Impact Statement for the Rim Country Project; we hereby reserve the right to provide further comments as the process unfolds; and, in the spirit of collaboration, we respectfully request that the Forest Service commit to receiving and considering further comments and emerging ideas provided under the auspices of continuous scoping as the analyses are conducted.

ECO is committed to working with the Forest Service to design, implement and monitor an ecologically, economically, legally and socially robust Environmental Impact Statement.

Thank you for your consideration.

Respectfully submitted,

Jason Whiting
Eastern Arizona Counties Organization Chair
Navajo County Supervisor



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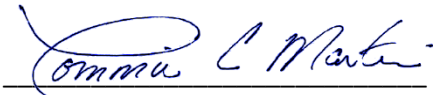

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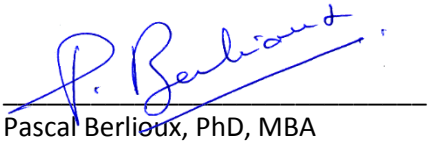

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