



July 8, 2017

Regional Forester, Objection Review Officer
USDA Forest Service, Southwest Region
333 Broadway Blvd., SE
Albuquerque, NM 87102
Via Email: objections-southwestern-regional-office@fs.fed.us

**Re: OBJECTIONS Pursuant to 36 C.F.R. § 218.8 on Luna Restoration Project,
Quemado Ranger District, Gila National Forest**

Dear Reviewing Office:

The Center for Biological Diversity (“the Center”) hereby submits these objections to the Gila National Forest’s draft Record of Decision (ROD) and final environmental impact statement (FEIS) for the Luna Restoration Project.

Project Objected To

Pursuant to 36 C.F.R. § 218.8(d)(4), the Center objects to the following project:

Project: Luna Restoration Project, Catron County, New Mexico, Gila National Forest

Responsible Official and Forest/Ranger District: Adam Mendonca, Forest Supervisor,
Gila National Forest, Quemado Ranger District

Timeliness

These objections are timely filed. Notice of the draft ROD was published in the Silver City Daily Press on May 22, 2019.¹

Lead Objector

As required by 36 C.F.R. § 218.8(d)(3), the Center designate the “Lead Objector” as follows:

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¹ See Legal Notice, Silver City Daily Press and Independent (May 22, 2019), reproduced at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd632595.pdf (last viewed July 6, 2019). The 45th day after the date of the May 22 notice falls on Saturday, July 6, and so the objection period expires at 11:59 PM Mountain time on the next business day, Monday July 8. See 36 C.F.R. § 218.6(a).

Interests and Participation of the Objectors

The Center for Biological Diversity is a non-profit environmental organization with over 61,000 members, and 1.6 million activist-supporters nationwide who value wilderness, biodiversity, old growth forests, and the threatened and endangered species which occur on America's spectacular public lands and waters. Many of the Center's members and supporters frequently use and enjoy the spectacular landscapes of the Gila National Forest landscape for recreation, sustenance, nature study, and spiritual renewal.

At the Center for Biological Diversity, we believe that the welfare of human beings is deeply linked to nature — to the existence in our world of a vast diversity of wild animals and plants. Because diversity has intrinsic value, and because its loss impoverishes society, we work to secure a future for all species, great and small, hovering on the brink of extinction. We do so through science, law and creative media, with a focus on protecting the lands, forests, waters and climate that species need to survive. The Center has and continues to actively advocate for increased protections for species and their habitats in New Mexico and across the American Southwest.

INTRODUCTION

The Center considers the proposed Record of Decision (ROD) to contain some beneficial project elements insofar as restoration and fuels treatments in forests, grasslands, shrublands, woodlands, and riparian areas are informed by the best available science and are coordinated within a cohesive and unified strategic, process-oriented approach.

We are pleased that proposed decision includes the following action items:

- Thinning in MSO PACs is restricted to felling of trees under 9" DBH outside of breeding season (March 1 to August 31) (Draft ROD at 13)
- Prescribed fire is planned for use of mixed severities, and as the only treatment on 36,022 acres
- Prescribed fire is planned in conjunction with thinning on up to 100,000 acres (Draft ROD at 5)
- Vegetation and fire treatments will be restricted from willow flycatcher and gartersnake critical habitat
- Approximately 113 miles of road decommissioning with portions remaining open to non-motorized use
- New temporary roads are minimized at 3-5 miles
- Stream and riparian treatments to address a range of issues, as listed in table 18 of the FEIS (FEIS at 32; see also Draft ROD at 14-15)

These are all positive management actions that should lead towards improved habitat, watershed function, and forest visitor experience. The FEIS seems to imply that a major focus of the project is to allow the use of fire, both planned and unplanned ignitions, to achieve restoration objectives. We strongly support this approach and are eager to continue work with the Gila National Forest to develop a project that can harness the restorative benefits of fire in a way that compliments a variety of forest management goals and protects communities and other values at risk while not compromising habitats for threatened, endangered and sensitive wildlife species.

Despite these constructive components, the Final EIS fails to comply with NEPA, and fails to address a number of issues we raised in past comments. We are therefore objecting on the following grounds:

- 1) The Luna FEIS failed to consider a reasonable alternative proposed by the Center and instead analysis a very narrow range of nearly identical alternatives.
- 2) The Luna FEIS fails to take a hard look at the impacts of livestock-related water and fencing developments, restricting analysis to a narrow and identical range of alternatives, and precluding the installation of permanent livestock-excluding riparian fencing.
- 3) The Luna FEIS fails to sufficient protect old and large trees despite the documented dearth of such trees on the landscape, the numerous times the Center argued for adequate protections in line with broadly agreed-upon positions, and contrary to scientific information which calls for their protection.
- 4) The Luna FEIS approves the use of herbicides on nearly 30,000 acres without taking a hard look at the effects of herbicides on the environment, and without considering the scientific information we presented that disputed the underlying need for herbicide treatment of rabbitbrush.

I. NEPA Mandates That Agencies Analyze All Reasonable Alternatives.

When federal agencies prepare an EIS, NEPA requires that they must take a “*hard look*” at the project’s environmental impacts and the information relevant to its decision.² In taking the required “*hard look*,” an EIS must “*study, develop, and describe*” reasonable alternatives to the proposed action.³ This alternatives analysis “*is the heart of the environmental impact statement.*”⁴

As a result, agencies must “[r]igorously explore and objectively evaluate all reasonable alternatives.”⁵ “*To comply with the National Environmental Policy Act and its implementing*

² *Wyoming v. U.S. Dep’t of Agriculture*, 661 F.3d 1209, 1237 (10th Cir. 2011).

³ 42 U.S.C. §§ 4332(2)(E); 4332(2)(C)(iii).

⁴ 40 C.F.R. § 1502.14; *see also All Indian Pueblo Council v. United States*, 975 F.2d 1437, 1444 (10th Cir. 1992).

⁵ 40 C.F.R. § 1502.14.

regulations, [agencies] are required to rigorously explore all reasonable alternatives ... and give each alternative substantial treatment in the environmental impact statement.”⁶ “Without substantive, comparative environmental impact information regarding other possible courses of action, the ability of an EIS to inform agency deliberation and facilitate public involvement would be greatly degraded.”⁷

When a federal agency prepares an EIS, it must consider “*all reasonable alternatives*” which are consistent with its stated purpose and need.⁸ An agency may dismiss a reasonable alternative if it is not “*significantly distinguishable from the alternatives already considered.*”⁹

Federal courts have struck down Forest Service EISs where the agency evaluated several alternatives, but where those alternatives were all fairly similar. *See, e.g., California v. Block*, 690 F.2d 753, 767-69 (9th Cir. 1982) (setting aside Forest Service EIS that evaluated eight alternatives because all of the alternatives considered protecting less than 34% of eligible lands as potential wilderness).

In addition, NEPA “*does not permit the agency to eliminate from discussion or consideration a whole range of alternatives, merely because they would achieve only some of the purposes of a multipurpose project.*”¹⁰ If a different action alternative “*would only partly meet the goals of the project, this may allow the decision maker to conclude that meeting part of the goal with less environmental impact may be worth the tradeoff with a preferred alternative that has greater environmental impact.*”¹¹

A. The Luna Project.

The Luna project’s purpose is exceedingly broad. It is “*to create and maintain a healthy resilient landscape and watersheds capable of delivering benefits to the public including reduced threat*

⁶ *Custer County Action Ass’n v. Garvey*, 256 F.3d 1024, 1039 (10th Cir. 2001) (emphasis added). *See also New Mexico ex rel. Richardson v. Bureau of Land Management*, 565 F.3d 683, 703 (10th Cir. 2009) (“[A]n EIS must rigorously explore and objectively evaluate all reasonable alternatives to a proposed action, in order to compare the environmental impacts of all available courses of action.”); *Colo. Envtl. Coalition v. Dombeck*, 185 F.3d 1162, 1174 (10th Cir. 1999) (explaining reasonable alternatives).

⁷ *New Mexico ex rel. Richardson*, 565 F.3d at 708.

⁸ 40 C.F.R. § 1502.14(a). *See also Colorado Environmental Coal. v. Salazar*, 875 F. Supp. 2d 1233, 1245 (D. Colo. 2012) (stating that the agency’s objectives dictate the range of reasonable alternatives).

⁹ *Colorado Environmental Coal. v. Salazar*, 875 F. Supp. 2d at 1245 (quoting *New Mexico ex rel. Richardson*, 565 F.3d 683, 708-09 (10th Cir. 2009)).

¹⁰ *Town of Matthews v. U.S. Dep’t. of Transp.*, 527 F. Supp. 1055, 1057 (W.D. N.C. 1981).

¹¹ *North Buckhead Civic Assoc v. Skinner*, 903 F.2d 1533, 1542 (11th Cir. 1990). *See also Natural Resources Defense Council v. Callaway*, 524 F.2d 79, 93 (2d Cir. 1975) (“the EIS must nevertheless consider such alternatives to the proposed action as may partially or completely meet the proposal’s goal and it must evaluate their comparative merits”); *Natural Resources Defense Council v. Morton*, 458 F.2d 827, 836 (D.C. Cir. 1972) (“(it is not) appropriate, as Government counsel argues, to disregard alternatives merely because they do not offer a complete solution to the problem.”).

*of high-intensity fire, clean air and water, habitat for native fish and wildlife, forest products, and outdoor recreation opportunities.”*¹² The FEIS states that there “*is a need to:*

- *reduce the impacts of high-severity fire on natural and cultural resources, private inholdings, communities, infrastructure, and livelihoods within the planning area;*
- *implement vegetative treatments to restore departed landscapes that are, overstocked, encroached, and at risk to fire, disease, insects, and climate stressors;*
- *implement treatments in watersheds that are not properly functioning;*
- *improve water quality by hardening stream crossings and performing road maintenance;*
- *continue to provide the wide range of forest products that are important to the culture, tradition and livelihoods of local communities;*
- *protect and restore threatened and endangered species and habitats;*
- *provide opportunities for off-highway vehicle use, enjoyment, and access from the community of Luna;*
- *provide permanent water supplies to support wildlife and livestock; and*
- *improve rangeland, wildlife, aquatic and riparian habitat.”*¹³

B. The FEIS considers only a very narrow range of alternatives.

The FEIS analyzes three action alternatives, all of which are nearly identical, and which have only minor differences a narrow range of action alternatives.

The meat of each of the action alternatives is the same. Alternatives B, C, and D all contain the following identical components and/or impacts:

- They each would undertake precisely the same acreage of vegetation treatments – 73,856 acres of mechanical and/or hand treatments in forested and woodlands areas, and 23,125 acres of grassland treatments – using identical treatments in each area.¹⁴
- They each would use prescribed fire on precisely the same area (36,022 acres) within precisely the same forest types, and would use prescribed fire together with mechanical treatments on precisely the same 70,000 – 100,000 acres.¹⁵

¹² Luna FEIS at 13.

¹³ Luna FEIS at 13-14.

¹⁴ Luna FEIS at 20, Table 11. *See also id.* at 19 (“[V]egetation treatments are the same for alternatives B, C, and D”).

- They each would construct precisely the same number and type of rangeland improvements – the same wells, storage tanks, drinkers, trick tanks, pipelines and miles of fence – at precisely the same locations in the same pastures.¹⁶
- They each would undertake precisely the same number and type of stream and riparian treatments – the same crossings, diversions, exclosures, barriers, erosion control structures, etc. – at precisely the same locations.¹⁷
- They would each have precisely the same impacts on “fire and fuels resources.”¹⁸
- They would each have the same impacts on the federally listed Mexican gray wolf, Mexican spotted owl, southwestern willow flycatcher, narrow-headed gartersnake, New Mexico meadow jumping mouse, spokedace, loach minnow, as well as Region 3 sensitive species, and migratory bird species.¹⁹
- They would each have precisely the same impacts to “social and economic resources.”²⁰

There are only two appreciable differences between the alternatives. First, Alternative C differs from Alternatives B and D in how it would treat rabbitbrush and alligator juniper, although an identical acreage would be treated under all three alternatives.²¹ Second, while the bulk of transportation management decisions are the same under each of the three alternatives, Alternative D would decommission 130 miles of road, while Alternatives B and C would identically decommission 116 miles of road.²²

1. The Center Proposed a Reasonable Alternative.

We proposed a reasonable alternative that would meet the purpose and need and is distinguishable from the other alternatives. In a scoping letter on the Luna project the Center requested that the analysis “*includes detailed study and development of action alternatives that*

¹⁵ Luna FEIS at 25, Table 13. *See also id.* at 25 (“There are no differences in the location, amount or types of [prescribed fire] treatments between alternatives.”).

¹⁶ Luna FEIS at 28, Tables 14 and 15. *See also id.* at 27 (“There are no differences in the location, amount or types of [livestock grazing] improvements between alternatives.”).

¹⁷ Luna FEIS at 32, Table 18. *See also id.* at 32 (“There are no differences in the type, number or location of [stream and riparian] treatments between alternatives.”).

¹⁸ Luna FEIS at 43-44, Table 20.

¹⁹ Luna FEIS at 45-51, Table 21.

²⁰ Luna FEIS at 59-60, Table 29.

²¹ *See* Luna FEIS at 22-24. Alternative B and D would use mowing in an attempt to reduce rabbitbrush across 20,283 acres; Alternative C would use herbicides on up to the same acreage. Alternative C would also use herbicides to eliminate alligator juniper on up to 8,000 acres.

²² *See* Luna FEIS at 30-31.

propose different treatment locations and intensities to compare project effects on potential fire behavior.”²³

That letter also requested that the Forest Service “*study, develop and describe action alternatives in detail that generally retain existing large trees*” and “*study, develop and describe in detail a stand-alone action alternative based on the entire [4FRI Old and Large Tree Retention] Strategy.*”

Finally, that letter stated that the Luna EIS “*should study, develop and describe an action alternative that:*

- *Implements existing forest plan standards and guidelines without amendment.*
- *Avoids road construction in Protected Activity Centers.*
- *Incorporates fuel treatment concepts outlined above, including large tree retention, management of surface fuels and sub-canopy forest structure, and spatial orientation.*
- *Applies fuel treatment modeling in spotted owl habitat, as proposed by Northern Arizona University Forest Ecosystem Restoration Analysis (Prather et al. 2008).’*

In our comments on the Draft EIS²⁴, we further requested that contained a “*detailed study of an action alternative that foregoes road building on steep slopes and sensitive, erodible soils where it may increase erosion or impair ecosystem productivity.*”

2. The Forest Service’s failure to analyze in detail our proposed alternative violates NEPA.

In scoping comments the Center identified old and large tree retention as an issue for analysis. We commend the Forest Service for crafting prescriptions that *emphasize* retention of old and large trees, but the FEIS provides language results in broad flexibility and room for interpretation. We have asked that the Forest Service include an unambiguous restriction on any form of cutting of any old growth tree (150 years or older) of any species for any reason. This is the basis of our proposed alternative which meets the project purpose stated in section I.A of this objection and pages 13-14 of the FEIS.

Retention of large trees is fundamentally important to fire resistance of treated stands.²⁵ Mature conifers have a high capacity to survive and recover from crown scorch.²⁶ Large tree structure enhances forest resilience to severe fire effects^{27,28,29} whereas removing them may undermine fire

²³ See Letter from Joe Trudeau (Center for Biological Diversity) to Emily Irwin, October 17, 2017, referencing letter from Jay Lininger (Center for Biological Diversity) to Emily Irwin, July 1, 2016.

²⁴ Letter from Joe Trudeau (Center for Biological Diversity) to Adam Mendonca, June 22, 2018.

²⁵ DellaSala, D.A., J.E. Williams, C.D. Williams and J.F. Franklin. 2004. Beyond smoke and mirrors: a synthesis of fire policy and science. *Conservation Biology* 18: 976-86.

²⁶ McCune, Bruce. "Ecological diversity in North American pines." *American Journal of Botany* (1988): 353-368.

²⁷ Arno, S.F. 2000. Fire in western ecosystems. Pp. 97-120 in: J.K. Brown and J.K. Smith (eds.). *Wildland Fire in Ecosystems, Vol. 2: Effects of Fire on Flora*. USDA For. Serv. Gen. Tech. Rep. RMRS-42-vol.2. Ogden, UT.

resilience.^{30,31} Research demonstrates no advantage in fire hazard mitigation resulting from mechanical forest treatments that remove large trees compared to treatments that retain them. Modeled treatments that removed only trees smaller than 16-inches diameter were marginally more effective at reducing long-term fire hazard than so-called “comprehensive” treatments that removed trees in all size classes.³²

Thinning small trees and pruning branches of large trees to increase canopy base height significantly decreases the likelihood of crown fire initiation,^{33,34,35,36} which is a precondition to active crown fire behavior.^{37,38} Therefore, low thinning and underburning to reduce surface fuels and increase canopy base height at strategic locations effectively reduces fire hazard at a landscape scale and meets the purpose and need.

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- ²⁸ Omi, P.N., and E.J. Martinson. 2002. *Effect of Fuels Treatment on Wildfire Severity*. Unpubl. report to Joint Fire Science Program. Fort Collins: Colorado State Univ. Western Forest Fire Research Ctr. March 25. 36 pp.
- ²⁹ Pollett, J. and P.N. Omi. 2002. Effect of thinning and prescribed burning on crown fire severity in ponderosa pine forests. *International Journal of Wildland Fire* 11: 1-10.
- ³⁰ Brown, R.T., J.K. Agee, and J.F. Franklin. 2004. Forest restoration and fire: principles in the context of place. *Conservation Biology* 18: 903-12.
- ³¹ Naficy, C., A. Sala, E.G. Keeling, J. Graham and T.H. DeLuca. 2010. Interactive effects of historical logging and fire exclusion on ponderosa pine forest structure in the northern Rockies. *Ecological Applications* 20: 1851-64.
- ³² Fiedler, C.E., and C.E. Keegan. 2003. Reducing crown fire hazard in fire-adapted forests of New Mexico. Pp. 29-38 in: P.N. Omi and L.A. Joyce (tech. eds.). *Fire, Fuel Treatments, and Ecological Restoration: Conference Proceedings*. 2002 April 16-18: Fort Collins, CO. USDA For. Serv. Rocky Mtn. Res. Sta. Proc. RMRS-P-29. Fort Collins, CO.
- ³³ Graham, R.T., S. McCaffrey, and T.B. Jain (Tech. Eds.). 2004. *Science Basis for Changing Forest Structure to Modify Wildfire Behavior and Severity*. USDA For. Serv. Rocky Mtn. Res. Sta. Gen. Tech. Rep. RMRS-120. Ft. Collins, CO.
- ³⁴ Keyes, C.R. and K.L. O'Hara. 2002. Quantifying stand targets for silvicultural prevention of crown fires. *Western Journal of Applied Forestry* 17: 101-09.
- ³⁵ Perry, D.A., H. Jing, A. Youngblood, and D.R. Oetter. 2004. Forest structure and fire susceptibility in volcanic landscapes of the eastern high Cascades, Oregon. *Conservation Biology* 18: 913-26.
- ³⁶ Omi and Martinson 2002, Pollett and Omi 2002
- ³⁷ Agee, J.K. 1996. The influence of forest structure on fire behavior. Pp. 52-68 in: J.W. Sherlock (chair). *Proc. 17th Forest Vegetation Management Conference*. 1996 Jan. 16-18: Redding, CA. Calif. Dept. Forestry and Fire Protection: Sacramento.
- ³⁸ Van Wagner, C.E. 1977. Conditions for the start and spread of crown fire. *Canadian Journal of Forest Research* 7: 23-24.

Large trees are not abundant at any scale in Southwestern forests and they are the most difficult of all elements of forest structure to replace once removed.³⁹ The ecological significance of old growth forest habitat and large trees comprising it is widely recognized.^{40,41} There is no agreed-upon scientific basis for removing large trees to promote fire resistance in southwestern forests.^{42,43} In addition to their rarity, a variety of factors other than logging threatens the persistence of the remaining large trees in Southwestern conifer forests. Recruitment of large trees, snags and large woody debris will become more limiting over time as climate change imposes chronic drought, reduced tree growth rates, and more widespread tree mortality.^{44,45,46,47,48} A large tree retention alternative would maintain trees that are most likely to survive fire injury and supply recruitment structure that will support the recovery of old growth forest habitat in the future.

In forests with a variety of species and disturbance regimes, large tree removal reduces forest canopy and diminishes recruitment of large snags and downed logs, which in turn affects long-

³⁹ Agee, J.K. and C.N. Skinner. 2005. Basic principles of forest fuel reduction treatments. *Forest Ecology and Management* 211: 83-96.

⁴⁰ Friederici, P. (Ed.). 2003. *Ecological Restoration of Southwestern Ponderosa Pine Forests*. Island Press: Washington, DC.

⁴¹ Kaufmann, M.R., W.H. Moir, and W.W. Covington. 1992. Old-growth forests: what do we know about their ecology and management in the Southwest and Rocky Mountain regions? Pp. 1-10 in: M.R. Kaufmann, W.H. Moir, and R.L. Bassett (eds.). *Old-Growth Forests in the Southwest and Rocky Mountain Regions: Proceedings from a Workshop* (1992). Portal, AZ. USDA For. Serv. Gen. Tech. Rep. RM-213. Fort Collins, CO.

⁴² Allen, C.D. M.A. Savage, D.A. Falk, K.F. Suckling, T.W. Swetnam, T. Schulke, P.B. Stacey, P. Morgan, M. Hoffman, and J.T. Klinge. 2002. Ecological restoration of southwestern ponderosa pine ecosystems: A broad perspective. *Ecological Applications* 12: 1418-33.

⁴³ Brown et al. 2004, Dellasala et al. 2004

⁴⁴ Diggins, C., P.Z. Fulé, J.P. Kaye and W.W. Covington. 2010. Future climate affects management strategies for maintaining forest restoration treatments. *International Journal of Wildland Fire* 19: 903-13.

⁴⁵ Savage, M. P.M. Brown, and J. Feddema. 1996. The role of climate in a pine forest regeneration pulse in the southwestern United States. *Ecoscience* 3: 310-18.

⁴⁶ Seager, R., M. Ting, Y. Kushnir, J. Lu, G. Vecchi, H. Huang, N. Harnik, A. Leetmaa, N. Lau, C. Li, J. Velez and N. Naik. 2007. Model projections of an imminent transition to a more arid climate in southwestern North America. *Science* 316: 1181-84.

⁴⁷ van Mantgem, P.J., N.L. Stephenson, J.C. Byrne, L.D. Daniels, J.F. Franklin, P.Z. Fulé, M.E. Harmon, A.J. Larson, J.M. Smith, A.H. Taylor and T.T. Veblen. 2009. Widespread increase of tree mortality rates in the western United States. *Science* 323: 521-24.

⁴⁸ Williams, A.P., C.D. Allen, C.I. Millar, T.W. Swetnam, J. Michaelsen, C.J. Still and S.W. Leavitt. 2010. Forest responses to increasing aridity and warmth in the southwestern United States. *PNAS* 107: 21289-94.

term forest dynamics, stand development and wildlife habitat suitability.^{49,50,51} If significant reductions of crown bulk density are deemed necessary to meet the purpose and need then it is highly unlikely that the project will maintain habitat for threatened and sensitive wildlife species associated with closed-canopy forest.^{52,53} An unambiguous commitment to old and large tree retention would maintain wildlife habitat in the short-term and mitigate adverse effects of the proposed treatments.

The key elements of our alternative that distinguish it from the other action alternatives, which are all almost identical anyway, are that it would:

- Retain all old trees over 150 years old, except in cases of imminent personal safety.
- Avoids road construction in Protected Activity Centers.
- Incorporates fuel treatment concepts including large tree retention, management of surface fuels and sub-canopy forest structure, and spatial orientation.
- Treat a different amount of the landscape with mechanical thinning as a comparison of effects to the other alternatives which are all identical in thinning acres.

The FEIS appears to dismiss our alternative without explanation. The only alternative Considered but Eliminated from Detailed Study in the FEIS is the “Use of Mechanical Treatments only within Defined Wildland-Urban Interfaces in the Planning Area.”⁵⁴ The Center did not suggest this as an alternative. Our comments on the Draft EIS stated:

“Mechanical thinning treatments should be prioritized for protection of the WUI and critical infrastructure, and otherwise utilized in a strategic and optimized manner in order to facilitate restoration of landscape scale wildland fire for resource benefit. Such an approach is consistent with the National Cohesive Wildfire Management Strategy and the best available science.”

This statement in our comments did not propose using mechanical treatments only in the WUI; instead, it said that mechanical treatments should be *prioritized* for the WUI and used elsewhere

⁴⁹ Quigley, T.M., R.W. Haynes and R.T. Graham. 1996. *Disturbance and Forest Health in Oregon and Washington*. USDA For. Serv. Pac. Nor. Res. Sta. Gen. Tech. Rep. PNW-GTR-382. Portland, OR.

⁵⁰ Spies, T.A. 2004. Ecological concepts and diversity of old-growth forests. *Journal of Forestry* 102: 14-20.

⁵¹ van Mantgem, P.J., N.L. Stephenson, J.C. Byrne, L.D. Daniels, J.F. Franklin, P.Z. Fulé, M.E. Harmon, A.J. Larson, J.M. Smith, A.H. Taylor and T.T. Veblen. 2009. Widespread increase of tree mortality rates in the western United States. *Science* 323: 521-24.

⁵² Beier, P., and J. Maschinski. 2003. Threatened, endangered, and sensitive species. Pp. 206-327 in: P. Friederici (ed.). *Ecological Restoration of Southwestern Ponderosa Pine Forests*. Island Press: Washington, D.C.

⁵³ Keyes, C.R. and K.L. O’Hara. 2002. Quantifying stand targets for silvicultural prevention of crown fires. *Western Journal of Applied Forestry* 17: 101-09.

⁵⁴ Luna FEIS at 39.

outside of the WUI in a strategic and optimized manner. The FEIS fails to address our proposed alternative described above, constituting a violation of NEPA.

II. The Final EIS Fails To Take A Hard Look At The Impacts Of Livestock-Related Water And Fencing Developments.

“An examination of Table 7 in the proposed action compared to Table 15 in the DEIS yields a shocking increase in proposed range improvements that directly benefit the ranching industry. Comparing these tables shows there is a doubling of the number of trick tanks and a near-doubling of the number of drinkers, a 50% increase in drilling of new wells and storage tanks, and a near-doubling in the miles of new pipeline in the DEIS.” (DEIS comments at 11).

The Forest Service states that the purpose and need for the project includes “*provid[ing] permanent water to support wildlife and livestock,*” and “*improv[ing] rangeland, wildlife, aquatic and riparian habitat.*”⁵⁵ The purpose of “[d]eveloping waters” is not simply to construct new developments, but “*to improve livestock and water distribution.*”⁵⁶

To achieve these ends, the Forest Service proposes to significantly alter the landscape by building and putting in place 50 new water developments, including 11 new wells, 14 new storage tanks (each with a 10,000 gallon capacity), 24 new drinkers, and 2 new trick tanks.⁵⁷ The Forest Service also proposes to approve 16 miles of new pipeline, and 2.25 miles of new fence.⁵⁸ Each action alternative “*propose[s] the same range improvements.*”⁵⁹ While proposing this significant level of development, the Forest Service asserts that “[t]his proposal would not alter the management (livestock kind, class, number or season of use) or desired conditions outlined in each allotment’s corresponding grazing analysis.”⁶⁰ The proposal identifies the specific location and allotment for each structure.⁶¹

As discussed below, the Forest Service violated NEPA by failing to disclose the impacts of, or reasonable alternatives to, the proposal to construct these livestock management developments.

⁵⁵ FEIS at 14.

⁵⁶ FEIS at 15. *See also* FEIS at 27 (proposed action would add new improvements “*to increase livestock and wildlife distribution to benefit rangeland conditions, including watershed, soils, and stream resources.*”); Draft ROD at 14 (“*to increase livestock and wildlife distribution that would benefit rangeland conditions, including watershed, soils, and stream resources.... The improvements would enhance livestock distribution, forage utilization and management flexibility.*”).

⁵⁷ FEIS at 28, 29.

⁵⁸ FEIS at 28.

⁵⁹ FEIS at 27.

⁶⁰ FEIS at 27. *See also* Draft ROD at 14 (same).

⁶¹ FEIS at 28; FEIS Map 7.

A. The Forest Service Must Disclose Baseline Conditions, by Allotment, that Individual Water Developments and Fences Are Meant to Address.

The Center’s comments on the DEIS urged the Forest Service to disclose baseline conditions related to livestock grazing and the project area’s ecological condition.⁶²

*“In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions.”*⁶³ Specifically, NEPA requires agencies to *“succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration.”*⁶⁴ The Council on Environmental Quality, the agency charged with interpreting NEPA, has explained that *“[t]he concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process.”*⁶⁵ Federal courts hold that *“[w]ithout establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA.”*⁶⁶

Because the Forest Service designed the proposed range developments *“to improve livestock and water distribution,”*⁶⁷ this presupposes that livestock and water distribution currently require improvement, meaning that each of the identified allotments has areas where livestock are, presumably, causing damage to soil, water quality, water quantity, native vegetation, etc., or, at a minimum, that livestock impacts to those and other values could be reduced or mitigated. However, the Forest Service failed to disclose, on an allotment by allotment basis, the conditions that require or would benefit from these developments, including, for example, the *“rangeland conditions, including watershed, soils, and stream resources”* that the Forest Service intends that the range developments will benefit.⁶⁸ This failure violates NEPA. Without such information, neither the public nor the decisionmaker can understand why the Forest Service proposes the particular number of developments at the identified locations on any particular allotment.

Without baseline information on an allotment by allotment basis, the public also cannot understand what the difference between the proposed action and the no action alternative might be. Which riparian areas, if any, will allegedly be more lightly grazed because new development will “lure” livestock away from those areas? What values of those riparian areas may benefit?

⁶² See Center Comment Letter (June 22, 2018) at 9-10.

⁶³ *Western Watersheds Project v. BLM*, 552 F.Supp.2d 1113, 1126 (D. Nev. 2008)

⁶⁴ 40 C.F.R. § 1502.15.

⁶⁵ Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act* 41 (1997), https://ceq.doe.gov/publications/cumulative_effects.html (last visited July 5, 2019).

⁶⁶ *Half Moon Bay Fishermans’ Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988); see also *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1084–85 (9th Cir. 2011) (holding that agency did not take a sufficiently “hard look” at environmental impacts because it did not collect baseline data).

⁶⁷ Luna FEIS at 15 (emphasis added).

⁶⁸ Luna FEIS at 27.

Further, the Forest Service states that one of the purposes of the range developments is to “increase ... *wildlife distribution*.”⁶⁹ But the EIS fails to disclose the current distribution of wildlife, and where and why that distribution needs to be “improved.”

Because the Forest Service fails to supply the required baseline information, the FEIS cannot make the required comparison, in violation of NEPA.

Suggested Remedy: The Forest Service must either: (1) prepare new or supplemental NEPA analysis that discloses the baseline conditions of each allotment, by allotment; or (2) remove the fence, pipeline, and water development proposals from the final Record of Decision.

B. The Forest Service Must Disclose the Impacts of Water Developments for Livestock.

The Center’s comments on the DEIS urged the Forest Service to disclose the impacts of each and every proposed range development.⁷⁰ The FEIS fails to do so.

NEPA requires federal agencies to take a “*hard look*” at the environmental impacts of proposed actions.⁷¹ To do so, federal agencies must prepare an environmental impact statement (EIS) for all “*major Federal actions significantly affecting the quality of the human environment*.”⁷² An EIS must “*provide [a] full and fair discussion of significant environmental impacts*” associated with a federal decision and “*inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment*.”⁷³ Taking the required “*hard look*” requires agencies to “*utiliz[e] ... the best available scientific information*.”⁷⁴

The FEIS contains only vague and contradictory language concerning the impacts of the proposed range developments, and the Forest Service fails to respond to scientific and expert literature contradicting the Forest Service’s assumptions.

The FEIS asserts, without support or site-specific analysis, that the proposed range developments will have beneficial impacts. For example, the FEIS alleges that other project components combined with new range waters and fences will result in more resilient rangeland vegetation.⁷⁵

⁶⁹ Luna FEIS at 27 (emphasis added).

⁷⁰ See Center Comment Letter (June 22, 2018) at 9-10.

⁷¹ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

⁷² 42 U.S.C. § 4332(2)(C); see also 40 C.F.R. § 1501.4.

⁷³ 40 C.F.R. § 1502.1.

⁷⁴ *Colo. Env'tl. Coal. v. Dombeck*, 185 F.3d 1162, 1171 (10th Cir. 1999).

⁷⁵ Luna FEIS at 146 (“*This, along with the proposed water developments and pasture division, would lead to the improvement of livestock distribution and use across the landscape, allowing for improved livestock management and resilience of the rangeland vegetation during times of drought and unforeseen climate conditions*”).

The agency asserts that “*several areas*” will benefit because water development will “*provid[e] relief from grazing pressure ... and decrease dependence on riparian habitat as a water source.*”⁷⁶ The FEIS fails to disclose the location or extent of these “*several areas*,” and the degree of benefit is nowhere described.

We find it concerning that the Draft ROD asserts that “*range improvements [among other things] will improve the watershed conditions and move streams toward meeting New Mexico State water quality standards*”⁷⁷ But the FEIS does not itself make such an assertion concerning range improvements, nor does the FEIS disclose how range improvements will improve the conditions in which watershed.

On the other hand, the FEIS appears to admit that water developments are likely to have negligible or harmful impacts to the environment, but again without the site-specific detail NEPA requires. For example, the Forest Service describes the potentially significant impacts from ground disturbance, trenching, and the use of motorized vehicles involved in range development construction.⁷⁸ The FEIS further admits that livestock grazing in upland areas, where developments will be built, can cause sedimentation and impair water quality.⁷⁹ The FEIS also appears to state that the potential benefits of rangeland improvements to soil conditions are “*minimal.*” In analyzing the “no action” alternative, the Forest Service states:

*Currently, isolated areas around existing water points receive heavier use from livestock and wildlife, resulting in less herbaceous vegetation and soil compaction. These areas would remain the same, as there would be no improvement in distribution of livestock and wildlife. However, the acres associated with these areas are minimal across the project area.*⁸⁰

Again, the FEIS does not appear to reveal the location of these “*isolated*” areas. The analysis of the proposed action alternatives also predicts little improvement in soil conditions at existing sites, and environmental damage at construction sites:

Additional watering sites in selected grazing allotments within the project area are anticipated to improve livestock and wildlife distribution. Improvements would not completely eliminate concentrated use at existing watering locations.

⁷⁶ Luna FEIS at 199.

⁷⁷ Luna Draft ROD at 5.

⁷⁸ Luna FEIS at 29.

⁷⁹ Luna FEIS at 115 (“*Water quality impairments have been identified by the State as a result of rangeland grazing with some of the probable causes of impairment notes as sedimentation or siltation and temperature. These causes can be both a direct and indirect result of inadequate woody and herbaceous vegetation, both in uplands and on streambanks.*”) (emphasis added).

⁸⁰ Luna FEIS at 118 (emphasis added).

*At new sites, some soil compaction and loss of herbaceous vegetation is likely to occur.*⁸¹

Similarly, the FEIS also downplays the benefit, if any, to water quality and quantity from the range developments:

*In watering locations where the water source is spring fed, less [livestock grazing] pressure on these springs may occur. The proposed treatments, however, do not provide fencing any of these areas, but rather provide alternate water sources to reduce pressure. This may relieve some water quality and quantity impacts; however, they may not be measurable. Effects to water quality and quantity are expected to improve slightly or not at all under all action alternatives.*⁸²

The FEIS thus concludes that the new water developments may provide little or no benefit to existing springs, at least in part because the Forest Service has declined to protect those springs with permanent fencing.

As a whole, the FEIS contains vague, unsubstantiated claims concerning the alleged benefits of livestock distribution that the developments may or may not promote, and does so without any site-specific, or allotment specific, analysis. This violates NEPA, particularly when the record before the agency rebuts claims of environmental benefit.

The FEIS's claims concerning the alleged benefits are also contradicted by the best available science, which shows little benefit, and some harm, is likely to occur from additional range developments. Riparian areas do more than provide water. They also provide food, shade, and cooler temperatures to livestock. A number of studies conclude that providing artificial water in uplands does little to lure livestock away from riparian areas.⁸³ To comply with NEPA, the

⁸¹ Luna FEIS at 120 (emphasis added).

⁸² Luna FEIS at 135 (emphasis added).

⁸³ See L.D. Bryant, *Response of Livestock to Riparian Zone Exclusion*, Journal of Range Management, Vol. 35, No. 6 (Nov. 1982), pp. 780-785 (concluding that "Neither salt placement nor alternate water location away from the riparian zone influenced livestock distribution appreciably."); See also J. Carter et al. *Upland Water and Deferred Rotation Effects on Cattle Use in Riparian and Upland Areas*, Rangelands, Vol. 39 (2017), 112, 117 (concluding, based on a four year study of an allotment in Utah that "Upland water developments and supplements do not overcome the propensity of cattle to linger in riparian areas, resulting in overgrazing and stream damage, and therefore do not lead to recovery of these damaged systems."); R.L. Gillen, *Cattle Distribution on Mountain Rangeland in Northeastern Oregon*, Journal Of Range Management 37(6), November 1964, pp. 549-53 ("Water distribution was not correlated with grazing patterns in uplan[d] plant communities.").

Failure to address this scientific literature would constitute a separate NEPA violation. See 40 C.F.R. § 1502.9(b) (requiring that each final EIS respond to "any responsible opposing view which was not adequately discussed in the draft statement."); *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1168 (9th Cir. 2003) (finding Forest Service's failure to disclose and respond to evidence and opinions challenging EIS's scientific assumptions violated NEPA); *Seattle Audubon Soc'y v. Moseley*, 798 F. Supp. 1473, 1482 (W.D. Wash. 1992) ("The agency's explanation is insufficient under NEPA – not because experts disagree, but because the FEIS lacks reasoned discussion of major scientific objections."), *aff'd sub nom. Seattle Audubon Soc'y v. Espy*, 998 F.2d 699, 704 (9th

Forest Service must address this science, and disclose what science the agency relies on to conclude that water developments will actually impact livestock utilization of currently ungrazed areas.

But even if the proposed action will achieve the purpose and need of increasing the distribution of livestock, because cattle will leave currently grazed areas to move onto now-lightly grazed lands with new water developments, that action will have environmental consequences that the FEIS fails to disclose. A wealth of scientific literature confirms that livestock grazing (and the roads, fences, water developments, and predator eradication that come with it) harms riparian areas, consumes vegetation used by native wildlife, fouls water, causes erosion, and significantly damages natural resource values in a plethora of ways.⁸⁴ All of these impacts are likely to occur on the lands adjacent to new water developments should those developments result in attracting more livestock presence there.⁸⁵ In a landscape where livestock are nearly ubiquitous, upland sites where grazing is currently precluded or limited by water scarcity are often the only places where relatively undisturbed, native vegetation can be found. Historically, the provision of livestock water to such sites has caused livestock to degrade upland soils, vegetation, wildlife habitat, scenery, and aesthetic qualities.⁸⁶ These impacts have led many to call the lands near water developments “sacrifice areas.”

Many the of water developments may require altering hydrology, and water flow and volume on some parts of the forest by either requiring water to be piped from areas where it may already be providing habitat to wildlife and plants, or altering the hydrology by creating structures that will limit the down-gradient flow of water. The 11 new wells will lower the water table, which may impact springs that are recharged via groundwater. For the other structures – storage tanks, drinkers, trick tanks, and pipelines, we could locate no information in the FEIS disclosing the source of the water serving those facilities. Removing water from its natural source will have impacts.

While the FEIS states that each water structure will require application to the State of New Mexico for a water right that fails to address in any way environmental damage. In response to a comment submitted by the Center, the FEIS states:

Cir. 1993) (“[i]t would not further NEPA’s aims for environmental protection to allow the Forest Service to ignore reputable scientific criticisms that have surfaced”).

⁸⁴ See, e.g., Lynn B. Jacobs, *Waste of the West: Public Lands Ranching* (1991); Thomas Fleischner, *Ecological Costs of Livestock Grazing in Western North America*, Conservation Biology, Volume 8, No. 3 (Sep. 1994), pp. 629-644; Joseph M. Feller, *What Is Wrong with the BLM’s Management of Livestock Grazing on the Public Lands?*, 30 Idaho L. Rev. 556, 560-563 (1993).

⁸⁵ The U.S. Fish & Wildlife Service has identified the development of livestock waters in previously ungrazed areas as a major factor contributing to the decline to the decline of the desert tortoise, which is now listed as a threatened species. See 55 Fed. Reg. 12,178, 12,181, 12,185 (1990).

⁸⁶ See, e.g., Laurence A. Stoddart, et al., *Range Management*, Third Edition (1975) (concentration of livestock at water sources on arid rangelands causes severely denuded areas); Joan E. Scott, *Do Livestock Waters Help Wildlife?*, in Environmental, Economic, and Legal Issues Related to Rangeland Water Developments, Proceedings of a Symposium (1997), pp. 493-507.

*All water developments within the Gila/San Francisco River and Little Colorado River basins must be approved by the New Mexico Office of the State Engineer who ensures the development is without detriment to existing surface water rights or impairment to existing ground water rights.*⁸⁷

But ensuring a senior water right is about protecting a more senior, down-stream water right holder's access to water. It says nothing about whether reducing flows in the watershed will damage other values besides water rights. Removing water from riparian areas to pipe to new water developments, drilling for groundwater that may feed seeps elsewhere, or altering hydrology upstream clearly has the potential to alter local hydrological processes, and thus harm the flora and fauna that rely on them. The FEIS fails to take the hard look at these impacts, violating NEPA.

The FEIS contains no analysis of impacts to recreation or scenic values (caused by copious feces and urine and flies caused by congregating livestock; creation of de facto sacrifice zones; creation of obviously altered landscapes with fences, pipelines, etc.).

The FEIS also fails to address the financial or other costs to taxpayers (if any) of constructing the range developments. Because the developments are likely to have little if any ecological value, the added potential cost to the taxpayer may demonstrate to the public and/or the decisionmaker that the costs of these developments far outweighs the benefit. The Forest Service's failure to include the potential financial costs of the more than 50 developments violates NEPA's hard look mandate. Further, the Forest Service does not state whether the Forest Service or the livestock permit-holder will hold water rights to the water provided by the new facilities.

Suggested Remedy: The Forest Service must either: (1) prepare new or supplemental NEPA analysis that takes the required hard look at the environmental, recreational, and financial impacts of range developments; or (2) remove the fence, pipeline, and water development proposals from the final Record of Decision.

C. The Forest Service Must Analyze a Range of Reasonable Alternatives re: Range Developments.

The Center's comments on the DEIS urged the Forest Service to analyze reasonable alternatives to building each and every one of the 50+ proposed livestock developments.⁸⁸ The FEIS fails to do so.

As noted elsewhere, NEPA requires the Forest Service to analyze a range of reasonable alternatives in every EIS.⁸⁹

⁸⁷ Luna FEIS at 199.

⁸⁸ See Letter from Joe Trudeau (Center for Biological Diversity) to Emily Irwin, October 17, 2017 at 11-12.

As noted above, the purpose of “[d]eveloping waters” is not simply to construct new developments, but “*to improve livestock and water distribution.*”⁹⁰ Therefore, an alternative that improves livestock distribution and protects existing waters would meet this part of the project’s purpose and need.

The FEIS itself suggests alternative means to limit the degradation caused by livestock on riparian areas and to ensure broader livestock distribution. In analyzing the potential for synergistic impacts of logging and livestock grazing on wildlife habitat, the FEIS states: “*Adaptive management actions that may occur to mitigate [such] effects include adjustments in pasture rotation schedules, herding, salting and reduced numbers.*”⁹¹ If pasture rotation, herding, and salting can be used to mitigate the impacts of logging treatments on range resources, surely these techniques can be used to improve livestock distribution and better protect areas around existing waters. There are many other ways to improve livestock distribution and to limit the damage to riparian areas, including:

- Reducing the number of livestock.
- Permanently fencing livestock out of riparian areas.
- Closing allotments.
- Resting allotments.

The FEIS fails to address any of these alternatives. Nor does the FEIS explain why it could not limit the damage of these developments by constructing half as many developments, or building them only on the allotments with the most severe impacts from poor livestock distribution but not on other allotments. These would be reasonable alternatives as well. However, here the Forest Service took an “all or nothing” approach, with all three actions alternatives proposing to construct all 50+ developments, while the no action alternative looked at building none. Federal courts routinely find that agency that fail to consider reasonable middle-ground alternatives violate NEPA.⁹² It would be odd indeed if the precise 50+ developments at the precise locations in the precise same allotments was *only* reasonable way for the Forest Service to improve livestock distribution.

The Forest Service may assert that it cannot consider such alternatives because the agency pledged not to engage in allotment management planning for this decision. The FEIS states that

⁹⁰ Luna FEIS at 15. See also FEIS at 27 (proposed action would add new improvements “*to increase livestock and wildlife distribution to benefit rangeland conditions, including watershed, soils, and stream resources.*”); Draft ROD at 14 (“*to increase livestock and wildlife distribution that would benefit rangeland conditions, including watershed, soils, and stream resources.... The improvements would enhance livestock distribution, forage utilization and management flexibility.*”).

⁹¹ Luna FEIS at 146 (emphasis added).

⁹² See, e.g., *Wilderness Soc’y v. Wisely*, 524 F. Supp. 2d 1285, 1312 (D. Colo. 2007) (striking down BLM NEPA analysis where agency failed to analyze in detail “*a potentially appealing middle-ground compromise between the absolutism of the outright leasing and no action alternatives.*”)

“[t]his proposal would not alter the management (livestock kind, class, number or season of use) or desired conditions outlined in each allotment’s corresponding grazing analysis.”⁹³ But the Forest Service cannot have it both ways. It cannot say that it will not “alter the management” of grazing allotments and then propose a series of actions designed to change the way grazing is managed. If it chooses to propose changing livestock grazing distribution by allowing a massive increase in range developments to improve grazing management, it must analyze alternatives that could provide similar results without such construction. The agency’s failure to do so here violated NEPA.

Suggested Remedy: The Forest Service must either: (1) prepare new or supplemental NEPA document analyzing a range of alternatives to address increased distribution of livestock; or (2) remove the fence, pipeline, and water development proposals from the final Record of Decision.

D. The Forest Service should expand and make permanent riparian exclosures.

In the Center’s comments on the DEIS we reviewed the benefits of livestock removal to upland grassland, shrub and woodland vegetation, including

- An example of where cattle from rangelands for 35 years led to the disappearance of rabbitbrush from previously shrub-dominated communities - and native grasses regained dominance;⁹⁴
- An example of where Forest Service scientists at the Intermountain Forest and Range Experiment Station found that protection of an Idaho range from grazing increased grass and forb production by 30% and decreased shrub production by 20%.⁹⁵
- An example of where University of Idaho range scientists documented a 20-fold increase in perennial grass cover after 25 years of grazing exclusion while shrub cover only increased by 1.5-fold, attributing the grass response to “the availability of seeds as formerly depleted populations increase in size.”⁹⁶

⁹³ Luna FEIS at 27.

⁹⁴ Austin, D.D., and P.J. Urness. 1998. Vegetal change on a northern Utah foothill range in the absence of livestock grazing between 1948 and 1982. *Great Basin Naturalist* 58(2): 188-191.

⁹⁵ Laycock, W.A. 1967. How heavy grazing and protection affect sagebrush-grass ranges. *Journal of Range Management* 20: 206-213.

⁹⁶ Anderson, J.E., and K.E. Holte. 1981. Vegetation development over 25 years without grazing on sagebrush-dominated rangeland in southeastern Idaho. *Journal of Range Management* 34:25-29.

- An example of where in a southeastern Arizona rangeland excluded from cattle grazing for 14 years, grass cover was 45% higher, the grass community was more heterogeneous, herb cover was higher, and rodent and bird numbers were higher than grazed comparison areas.⁹⁷

In violation of NEPA, the FEIS does not address any of this scientific information.

As with upland habitats, the scientific literature documenting the impacts of livestock grazing on aquatic and riparian habitats in the Southwest is extensive and universally shows severe and lasting negative impacts such that near complete exclusion of cattle is widely accepted as the only means of preserving stream health.⁹⁸

The FEIS concurs with this notion in the assertion that riparian exclosures will have benefits to water, wildlife, and vegetation. “By alleviated grazing pressure within these areas, it will provide a needed period of rest and recovery for riparian woody and herbaceous vegetation to grow, upland vegetation to recover, and stream banks to stabilize. These restoration efforts, combined, will aid in reversing erosion, lack of ground cover, and destabilized channels. Riparian areas, wetlands, and wet meadows will benefit over the long term. It will likely take several years for these improvements to be realized.”⁹⁹

Livestock grazing has both direct and indirect effects on streams. Livestock directly affect riparian habitats through removal of riparian vegetation¹⁰⁰ which in turn raises water temperatures, reduces bank stability and eliminates an important structural component of the stream environment that contributes to the formation of pools,¹⁰¹ and by physically altering

⁹⁷ Bock, C.E., J.H. Bock, W.R. Kenney, and V.M. Hawthorne. 1984. Responses of birds, rodents, and vegetation to livestock exclosure in a semidesert grassland site. *Journal of Range Management* 37(3): 239-242.

⁹⁸ See Fleischner, T. L. 1994. Ecological costs of livestock grazing in western North America.

Conservation Biology 8(3): 629-644; Ohmart, R. D. 1996. Historical and present impacts of livestock grazing on fish and wildlife resources in western riparian habitats. Rangeland Wildlife. P. R. Krausman. Denver, CO, Society for Range Management; and Belsky, A. J., A. Matzke, and S. Uselman. 1999. Survey of livestock influences on stream and riparian ecosystems in the western United States. *Journal of Soil and Water Conservation* 54(1):419-431.

⁹⁹ Luna FEIS at 126.

¹⁰⁰ See Clary, W. P., B. F. Webster. 1989. Managing grazing of riparian areas in the Intermountain Region. USDA Forest Service; Clary, W. P., D. E. Medin. 1990. Differences in vegetation biomass and structure due to cattle grazing in a northern Nevada riparian ecosystem. USDA Forest Service; Schulz, T. T., and W.C. Leininger. 1990. Differences in riparian vegetation structure between grazed areas and exclosures. *Journal of Range Management* 43(4): 295-299; and Armour, C. L., D. A. Duff, and W. Elmore. 1991. The effects of livestock grazing on riparian and stream ecosystems. *Fisheries* 16(1):7-11.

¹⁰¹ See Meehan, W. R., F.J. Swanson, and J.R. Sedell. 1977. Influences of riparian vegetation on aquatic ecosystems with particular reference to salmonid fishes and their food supply. USDA Forest Service; Kauffman, J. B., W. C. Krueger. 1984. Livestock impacts on riparian plant communities and streamside management implications. A review. *Journal of Range Management* 37(5): 430-438; Minckley, W.L., and J.N. Rinne. 1985. Large woody debris in hot-desert streams: an historical review. *Desert Plants* 7(3):142-153; and Platts, W. S. 1990. Managing fisheries and wildlife on rangelands grazed by livestock: A guidance and reference document for biologists, unpublished document, Nevada Department of Wildlife.

streambanks through trampling and shearing, leading to bank erosion.¹⁰² Livestock also indirectly impact aquatic and riparian habitats by compacting soils, altering soil chemistry and reducing vegetation cover in upland areas, leading to increased severity of floods and sediment loading, lower water tables and altered channel morphology.¹⁰³ These processes are all on full display in the riparian areas on the Luna landscape that are currently grazed by livestock.

Clearly, livestock negatively impact riparian and aquatic ecosystems. The projects inclusion of riparian exclosure fence could in effect accomplish the purpose “*to create and maintain a healthy resilient landscape and watersheds capable of delivering benefits to the public, including clean air and water, habitat for native fish and wildlife, forest products, and outdoor recreation opportunities*,”¹⁰⁴ however, the Forest Service does not intend for the exclosure fencing to be permanent,¹⁰⁵ stating frankly that “[T]hese are temporary exclosures and are not meant to permanently exclude livestock and wildlife from riparian areas”¹⁰⁶ calling into question the ability of the project to “*protect and restore threatened and endangered species and habitats*” and “*improve rangeland, wildlife, aquatic and riparian habitat*”¹⁰⁷ in the long term.

Does the Forest Service have any evidence to prove that temporary exclosures are effective at restoring aquatic and riparian ecosystems for the life of the project, at a minimum?

The FEIS provides no evidence or studies, and we are aware of none, that riparian areas will somehow be protected from livestock grazing impacts once exclosures are removed. When cattle

¹⁰² See Armour, C.L. 1977. Effects of deteriorated range streams on trout. U.S. Bureau of Land Management, Boise, ID. 7 pp; Platts, W.S., and R.L. Nelson. 1985. Stream habitat and fisheries response to livestock grazing and instream improvement structures, Big Creek, Utah. *Journal of Soil and Water Conservation* 40(4):374-379; and Trimble, S.W., and A.C. Mendel. 1995. The cow as a geomorphic agent - a critical review. *Geomorphology* 13(1995):233-253.

¹⁰³ See Cooperrider, C. K. and B. A. Hendricks. 1937. Soil erosion and streamflow on range and forest lands of the upper Rio Grande watershed in relation to land resources and human welfare, USDA Technical Bulletin 567; Sartz, R. S., and D.N. Tolsted. 1974. Effect of grazing on runoff from two small watersheds in southwestern Wisconsin. *Water Resources Research* 10(2): 354-356; Gifford, G. F., R. H. Hawkins. 1978. Hydrologic impact of grazing on infiltration: a critical review. *Water Resources Research* 14: 305-313; Blackburn, W. H., R. W. Knight, M.K. Wood. 1982. Impacts of grazing on watersheds: a state of knowledge. College Station, Texas, Texas Agricultural Experiment Station, Texas A&M University; Orodho, A.B., M.J. Trlica, and C.D. Bonham. 1990. Long-term heavy-grazing effects on soil and vegetation in the four corners region. *The Southwestern Naturalist* 35(1):9-15; Schlesinger, W.H., J.R. Reynolds, G.L. Cunningham, L.F. Huenneke, W.M. Jarrell, R.A. Virginia, and W.G. Whitford. 1990. Biological feedbacks in global desertification. *Science* 246:1043-1048; and Elmore, W., and B. Kauffman. 1994. Riparian and watershed systems: degradation and restoration. Pp 212-231 in M. Vavra, W. A. Laycock, and R. D. Pieper, editors. *Ecological implications of livestock herbivory in the west*. Society for Range Management, Denver, CO.

¹⁰⁴ Luna FEIS at i.

¹⁰⁵ See Luna FEIS at 33 (“exclosure[s] could be relocated”); Luna FEIS at 38 (exclosure “[m]odifications include such things as expanding, moving, reducing, or removal”);

¹⁰⁶ FEIS at 200 and 201.

¹⁰⁷ Luna FEIS at 14.

can again access riparian areas, they will again consume, trample, and defecate and urinate, and cause erosion and sedimentation in that habitat. The FEIS's conclusions are thus arbitrary and capricious and violate NEPA because they are not supported by, and in fact contradict, the best available science.

Because of the severity and broad array of these impacts, livestock grazing is one of the most prevalent causes of species being federally listed in this region, and has documented negative impacts on the species discussed in this section, all of which are specifically dependent on aquatic and riparian habitat:

Southwestern willow flycatcher: Listed as endangered February 27, 1995 (60 Fed. Reg. 10695); final critical habitat January 3, 2013 (78 Fed. Reg. 343);¹⁰⁸

Loach minnow and spikedace: Uplisted to endangered February 23, 2012 (77 Fed. Reg. 10810); final critical habitat February 23, 2012 (77 Fed. Reg. 10810);¹⁰⁹

Northern Mexican garter snake and narrow-headed garter snake: Listed as threatened July 8, 2014 (79 Fed. Reg. 38677); proposed critical habitat July 10, 2013 (78 Fed. Reg. 41549).¹¹⁰

The Forest Service has already proven that it struggles with ensuring livestock remain excluded from sensitive riparian areas, especially those which contain habitat for federally listed species. In a past settlement, the Forest Service was tasked with excluding livestock from 99% of riparian areas on 57 allotments in Arizona and New Mexico, including the Luna Allotment, yet a recent survey concluded that there are still livestock damaging the riparian areas therein at severe levels.¹¹¹ Comments on the Luna DEIS submitted by the New Mexico Department of Game and Fish stated that “*during the field visit, Department and Quemado Ranger District staff observed multiple impaired riparian and aquatic habitats across the planning area,*” and specifically identified the need to exclude livestock from sensitive riparian areas such as Adair Springs.¹¹²

¹⁰⁸ See 60 Fed. Reg. at 10707 (“Overuse by livestock has been a major factor in the degradation and modification of riparian habitats in the United States ... Livestock grazing in riparian habitats typically results in reduction of plant species diversity and density, especially of palatable plants like willow and cottonwood saplings.”)

¹⁰⁹ See 77 Fed. Reg. at 10,818 (“Impacts associated with roads and bridges, changes in water quality, improper livestock grazing, and recreation have altered or destroyed many of the rivers, streams, and watershed functions in the ranges of the spikedace and loach minnow.”).

¹¹⁰ See 79 Fed. Reg. at 38718 (“We found numerous effects of livestock grazing that have resulted in the historical degradation of riparian and aquatic communities that have likely affected northern Mexican and narrow-headed gartersnakes.”)

¹¹¹ See “Rapid Assessment of Cattle Impacts in Riparian Enclosures on the Gila National Forest” submitted to the Gila National Forest, March 2018.

¹¹² Luna FEIS at 216.

Of much concern is that the FEIS incorrectly addresses our comments on enclosure fencing. In the Response to Comments section of the FEIS, the Forest Service claims that the Center was “Concern[ed] that riparian exclosures may affect southwestern willow flycatcher, loach minnow, narrow-headed garter snake, northern Mexican gartersnake (CBD-27), and beaver. (WEG-14).¹¹³

The Forest Service response states that the Center was concerned with how exclosures would affect the species listed. This misrepresents our concern. Our full comments on the DEIS, specific to this issue, were:

“Bank full width is a primary indicator of channel function, and directly related to fish habitat quality, water quality, and channel stability.¹¹⁴ Livestock grazing degrades water quality in several ways, including by widening channels due to bank damage from trampling and sedimentation, leading to elevated water temperature via the loss and suppression of riparian vegetation that provides stream shade.^{115/116} Trampling impacts are often substantial even in the absence of shade loss.¹¹⁷ This is a serious impact because elevated water temperature adversely affects numerous aquatic species, including those which occur in this project area such as southwestern willow flycatcher, loach minnow, narrow-headed garter snake, and northern Mexican gartersnake. Stream restoration actions taken under the Luna project will not be successful if these issues are not comprehensively addressed in the EIS. How do the proposed exclosures address these issues?”¹¹⁸

We specifically asked the FS how proposed *temporary* exclosures addressed the impacts of grazing on riparian and aquatic systems, including bank full width, water quality, channel stability, trampling, sedimentation, and water temperature. We did not express any concern that exclosures would negatively affect native, imperiled species.

To reiterate, we specifically stated that “... elevated water temperature adversely affects numerous aquatic species, including those which occur in this project area such as southwestern

¹¹³ Luna FEIS at 201.

¹¹⁴ Dalldorf, K.N., S.R. Swanson, D.F. Kozlowski, K.M. Schmidt, R.S. Shane, and G. Fernandez. 2013. Influence of livestock grazing strategies on riparian response to wildfire in northern Nevada. *Rangeland Ecology and Management* 66: 34-42.

¹¹⁵ Kondolf, G. Mathias, Richard Kattelman, Michael Embury, and Don C. Erman. 1996. Status of riparian habitat. Sierra Nevada Ecosystem Project: Final report to Congress, Volume 2

¹¹⁶ Beschta, R.L., D.L. Donahue, D.A. DellaSala, J.J. Rhodes, J.R. Karr, M.H. O'Brien, T.L. Fleischner and C.D. Williams. 2013. Adapting to climate change on western public lands: addressing the ecological effects of domestic, wild, and feral ungulates. *Environmental Management* 51: 474-91.

¹¹⁷ Rhodes, J.J., D.A. McCullough, and F.A. Espinosa, Jr. 1994. A coarse screening process of the effects of land management on salmon spawning and rearing habitat in ESA consultations. Technical Report 94-4. Columbia River Inter-Tribal Fish Commission. Portland, Oregon. Report prepared for National Marine Fisheries Service.

¹¹⁸ Center Comments on the DEIS at 23.

willow flycatcher, loach minnow, narrow-headed garter snake, and northern Mexican gartersnake.” That the Forest Service response was that “[e]xclosures are not proposed in loach minnow, narrow-headed gartersnake, nor northern Mexican gartersnake habitat”¹¹⁹ proves that the project design will have little benefit to these species which are impacted by livestock grazing in their critical habitats. Further, the Forest Service’s failure to respond to the comment actually submitted violates NEPA.¹²⁰

Suggested Remedy: The Forest Service must either: (1) prepare new or supplemental NEPA analysis that takes the required hard look at the effectiveness of temporary riparian exclosures on restoring riparian habitats used by listed species occurring in the project area, including but not limited to southwestern willow flycatcher, loach minnow, spikedeace, narrow-headed garter snake, and northern Mexican gartersnake; or (2) increase the extent of exclosures such that they encompass habitats for all listed species occurring in the project area, and make the exclosures permanent in their exclusion of domestic livestock.

III. The Draft EIS Fails to Take a Hard Look at the Impacts of Herbicides

We oppose the use of herbicides in this project in all areas except for the treating of juniper stumps within a ¼ mile buffer around private property as part of Wildland Urban Interface treatments. In our comments on the Draft EIS we extensively reviewed the literature on herbicides, rabbitbrush, and the effects of livestock grazing on rabbitbrush persistence in rangelands. The FEIS fails to address the numerous questions we asked about this issue, and it fails to address the vast scientific evidence that without reducing grazing, rabbitbrush will continue to proliferate. Despite the Center providing a compelling critique of the Forest Service’s proposal in the Draft EIS, the FEIS has not reduced the extent of the herbicide use area by a single acre.

In the Luna FEIS, the Forest Service provides no real answer to our concern that “*there is no evidence linking chemical treatment of rabbitbrush & juniper to improve biodiversity, grassland health, or improvement in watershed condition.*”¹²¹ The Forest Service response fails to address the scientific literature demonstrating that livestock overgrazing is directly responsible for the rabbitbrush density on the landscape. As we note elsewhere in this Objection, the failure to address this scientific literature is an independent NEPA violation.¹²²

¹¹⁹ Luna FEIS at 201.

¹²⁰ See 40 C.F.R. 1503.4(a) (“An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond ... stating its response in the final statement.”).

¹²¹ See FEIS at 205.

¹²² See 40 C.F.R. § 1502.9(b) (requiring that each final EIS respond to “any responsible opposing view which was not adequately discussed in the draft statement.”); *Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157, 1168 (9th Cir. 2003) (finding Forest Service’s failure to disclose and respond to evidence and opinions challenging EIS’s scientific assumptions violated NEPA); *Seattle Audubon Soc’y v. Moseley*, 798 F. Supp. 1473, 1482 (W.D. Wash. 1992) (“The agency’s explanation is insufficient under NEPA – not because experts disagree, but because the

The benefits of the herbicide use described by the EIS are greatly outweighed by the harms. As a threshold matter, the Draft EIS fails to take a hard look at the actual impacts of herbicide use in the Luna project. The FEIS fails to take a hard look at the impacts of herbicide use on ESA listed animals, relying on statements that herbicide use will not take places on sites where these species are present. While the Forest Service may have staff that can identify the habitats which are to be buffered and avoided, it is entirely possible, and perhaps even likely, that the third parties who actually do the herbicide application would not be able to identify these habitats, despite being licensed applicators.

An example of a key issue area that was overlooked is the impact of herbicide use on non-target species. Starting with pollinators, the FEIS fails to give any consideration to the impacts of herbicide use on pollinators. New Mexico boasts over 500 native bee species, yet this FEIS fails to consider the impacts of herbicide use on native bees or even mention them at all. The vast majority of native bee species are cavity or ground nesting, thus the preferred alternative would result in these remarkable, and in many cases imperiled species, creating nests and leaving their eggs to hatch in sites where herbicides have been used. Herbicide use in these sites could lead to the failure of brooding sites for years to come. In addition, many native bees and pollinators are incredibly specialized and do not travel more than a couple hundred yards, thus the killing or even disturbance of a small patch of plants via herbicide could have significant impacts on an important population.¹²³ Herbicide use is a leading cause of the decline of butterflies, and other pollinator species, because of its impacts to the floral resources they rely on.¹²⁴ Many species of native bees and pollinators remain understudied and rely on federal public lands, but the use of herbicides proposed in the selected alternative could have significant impacts on these populations.

In addition to native pollinators, the FEIS fails to consider impacts to honeybees, which are of vital importance to agriculture. Recent peer reviewed and scientific studies have shown that herbicides interfere with the microbiomes, and subsequently the survival, of honeybees,¹²⁵ and presumably native bees, although this is not yet confirmed. However, this new and emerging body of research clearly indicates that herbicide use, once considered relatively benign for honey bees outside of the impacts to floral resources, has a more significant impact than previously considered.

The FEIS also fails to adequately consider the impacts of herbicide use on avian species, especially cavity nesting species that may use sites where herbicides would be used under the

FEIS lacks reasoned discussion of major scientific objections.”), *aff’d sub nom. Seattle Audubon Soc’y v. Espy*, 998 F.2d 699, 704 (9th Cir. 1993) (“[i]t would not further NEPA’s aims for environmental protection to allow the Forest Service to ignore reputable scientific criticisms that have surfaced”).

¹²³ Kearns, C.A., D.W. Inouye, and N.M. Waser. 1998. Endangered mutualisms: The Conservation of Plant-Pollinator Interactions. *Annual Review of Ecology and Systematics* 29(1): 83-112.

¹²⁴ See e.g., Petition to List Monarch Butterfly, Center for Biological Diversity et al, 2014. https://www.biologicaldiversity.org/species/invertebrates/pdfs/Monarch_ESA_Petition.pdf

¹²⁵ Dai, P., Z. Yan, S. Ma, Y.Y. Qiang Wang, C. Hou, Y. Wu, Y. Liu, and Q. Diao. 2018. The Herbicide Glyphosate Negatively Affects Midgut Bacterial Communities and Survival of Honey Bee during Larvae Reared in Vitro. *Journal of Agricultural and Food Chemistry* 66(29):7786-7793. DOI: 10.1021/acs.jafc.8b02212

Draft Record of Decision. The analysis of impacts to the Mexican spotted owl relies on a series of expected future conditions to justify the impact that are uncertain and do not adequately justify the anticipated impacts. The same goes with the New Mexico meadow jumping mouse and other listed species.

The FEIS fails to take the required hard look at the impacts of herbicide use within municipal watersheds or near areas of human habitation. While the draft mentions that herbicide use will occur adjacent to private property, it summarily dismisses any potential impacts without addressing threshold issues such as the current USGS survey data on herbicide residues in area waterways and considering whether and how adding an additional herbicide burden to these waterways will affect plants, animals or human health.

The FEIS fails to take a hard look at the specific impacts of specific herbicides. One herbicide, aminocyclopyrachlor, was essentially banned in the state of Oregon because of its astoundingly severe impacts on native trees, specifically ponderosa pines on May 9, 2019.¹²⁶ This herbicide traveled further than anyone anticipated it could to kill 2000 ponderosa pines on Forest Service land in Central Oregon, including old growth trees.¹²⁷ The FEIS does not identify the herbicides which would be used, so we cannot be sure if the Forest Service is considering using a herbicide in restoration that has such severe environmental impacts the state of Oregon has had to ban it. This alone is the strongest possible indication that this FEIS fails to adequately consider the impacts of herbicide use.

All herbicides have a significant risk of non-target impacts, all of them behave differently and create different risks, they have different half-lives and modes of action and drift risks, and yet the FEIS just lists them without taking a hard look at any of them. An EIS simply cannot consider the impacts of herbicide use when it does not even include all the herbicides by name. Referring to a nearly 20 year old analysis of noxious weed herbicides does not satisfy this requirement to take a “*hard look*,” as abundant new information has been published since the environmental assessment for noxious weed management on the Gila National Forest (USDA Forest Service 2000a). Furthermore, it must be noted that the EPA has never completed ESA consultation on any of these herbicides and thus their impacts to non-target listed species cannot be described with any certainty. The EPA’s systematic failure to engage in ESA consultation on herbicides is the subject matter of numerous lawsuits by the Center and others.

Herbicides can be ineffective and have substantial adverse effects. For example, herbicides often do not kill whole plants but do cause leaves to wither, giving the appearance of an invasive species treatment being effective for a couple weeks, until the crew has left the area, the plant recovers and starts putting on leaves once more.

¹²⁶ [Oregon Rule](https://www.oregon.gov/ODA/programs/Herbicides/RegulatoryIssues/Documents/Documents/2019/ACPPermanentRule.pdf) 603-057-0392, available at <https://www.oregon.gov/ODA/programs/Herbicides/RegulatoryIssues/Documents/Documents/2019/ACPPermanentRule.pdf> (last viewed May 13, 2019).

¹²⁷ Emily Cureton, Oregon Becomes 1st State To Sharply Restrict Herbicide Linked To Tree Deaths, Oregon Public Broadcasting (May 10, 2019), available at <https://www.opb.org/news/article/oregon-herbicide-restriction-aminocyclopyrachlor-perspective-acp-sisters/> (last viewed May 13, 2019).

Of extreme concern is the apparent discretionary nature of the Design Features Specific to Herbicide Treatments wherein the FEIS states that “*The following design features and best management practices would be considered,*” and then lists nearly twenty design features.¹²⁸

Does that mean the FS will “*consider*” providing adequate notification and posting appropriate signage when applying near private lands?

Does that mean the FS will “*consider*” avoiding applying chemicals before forecasted severe storm events to limit runoff and ensure the chemical reaches intended targets?

Does that mean the FS will “*consider*” identifying resource concerns and mitigations specific to the individual treatment area prior to herbicide application?

Sadly, the FEIS fails to ensure that any of the Design Features Specific to Herbicide Treatments are mandatory. The Forest Service, therefore, cannot conclude that any of these measures will mitigate the impacts of herbicide use.

Interestingly, the FEIS indicates that at least some of the monitoring plans would be created at the site-specific level after the NEPA process is complete, during project implementation, stating that:

*“Prior to implementation, an interdisciplinary team will develop a forestwide Vegetation Management Plan for herbicide treatments on rabbitbrush and alligator juniper. The plan would include such things as objectives, techniques, and monitoring elements as well as the design features identified in the environmental impact statement and appropriate best management practices, permitting, and handling of materials.”*¹²⁹

Does that mean the Forest Service will “*consider*” preparing a forest-wide plan? Or that the Forest Service will “*consider*” what the forest-wide plan has to say in implementing the project? And how can the Forest Service rely on a design feature to mitigate impacts when that feature hasn’t been adopted yet in the forest-wide plan? Under the law, it cannot. A forest-wide plan for herbicide use on alligator juniper and rabbitbrush will require its own NEPA analysis, and any approval of herbicides for these uses prior to the creation of such a plan is not a valid approval.

Suggested Remedy: The Forest Service should (1) issue a revised or supplemental EIS for public comment that (a) includes a thorough analysis of herbicides proposed for use, fully answering the questions raised by the Center in this section; and (b) analyzes an alternative for comparison that reduces livestock stocking in order to achieve the desired restoration of plant communities; or (2) issue a final record of decision that eliminates the use of all herbicides in the Luna project except for treating juniper stumps within ¼ mile of private property.

¹²⁸ Luna FEIS at 23.

¹²⁹ Luna FEIS at 23.

IV. The Luna Project Fails to Sufficiently Protect Old Growth and Large Young Trees.

In 2006, a team of dedicated professionals representing industry, conservation organizations, land management agencies, and independent scientists collaboratively developed a framework document called the New Mexico Forest Restoration Principles¹³⁰. Among those authors was staff from the Center for Biological Diversity. We stand by the agreements established in this document when we signed our names alongside those in the US Forest Service, Bureau of Land Management, and other partners in restoration.

These principles for restoration should be used as guidelines for project development and they represent the “zone of agreement” where controversy, delays, appeals, and litigation are significantly reduced. They are appropriate for application to specific restoration projects in the southwestern United States, and especially the Gila National Forest. Projects using these principles should be driven primarily by ecological objectives while promoting economic and social benefits.

Slowly, forest restoration treatments have shifted from an almost exclusive focus on hand thinning of small diameter ladder fuels to what we see now in the Luna Restoration Project: a return of widespread commercial logging of trees of nearly any size to move towards agency-established desired conditions.

Some of the eighteen Principles are being adhered to in the Luna Restoration Project. Notably, some significant Principles are not, especially regarding retention of old and large trees. The New Mexico Forest Restoration Principles clearly state that restoration projects should “*preserve old or large trees while maintaining structural diversity and resilience.*”

We believe that forest restoration projects in the southwest are now generally moving in the wrong direction, with excessive emphasis on structural manipulation and insufficient attention to fire-driven ecological processes. So-called “restoration projects” such as Luna even cunningly devise ways to justify cutting old growth and trees up to 24” (and even larger).

Until the Forest Service created GTR-310, large and old tree retention has been a fundamental of Southwestern forest restoration. Past timber management destroyed nearly all ponderosa pine and mixed conifer old growth forest in Arizona and New Mexico, including on much of the Gila National Forest. Even-aged or simplified forest has replaced the complex forests of the pre-settlement southwestern landscape.^{131,132}

As described in detail below, the FEIS has not committed to preserve old or large trees. Vague and ambiguous statements leave too much room for abuse and backsliding on good intentions.

¹³⁰ Attached via email.

¹³¹ Covington, W.W., and M.M. Moore. 1994. Southwestern ponderosa forest structure: Changes since Euro-American settlement. *Journal of Forestry* 92: 39-47.

¹³² Sesnie, S. and J. Bailey. 2003. Using history to plan the future of old-growth ponderosa pine. *Journal of Forestry* 99(7) (Oct/Nov): 40-47.

An absolute restriction on old and large tree removal is consistent with decades of forest restoration literature, and is a simple way to avoid delays and litigation.

A. The Center Requested That the Luna Project Protect Old and Large Trees.

In a letter to the Forest Service, the Center asked that the Luna Project adopt “*agreements developed in the 4FRI stakeholders group that govern the protection of old and large trees, mature and old growth structure, treatments in stands infected with mistletoe, and monitoring of treatments in MSO habitats.*”¹³³

In a later letter providing comments on the Draft EIS, the Center “*again request[ed] that those project design features are incorporated into the Luna Restoration Project from the onset [including] management direction for “SPLYT” stands, mistletoe treatments, treatments within Mexican spotted owl goshawk habitat, the old and large tree retention strategy, and other 4FRI elements which we have submitted.*”¹³⁴

Elsewhere in that same letter the Center states that it was “*discouraging to not see any protections for old and large trees or a clearly listed section on best management practices for logging operations, because as we established in our scoping letter, the retention of large trees will best meet the project purpose and need as it pertains to old growth, goshawk and MSO habitat, fire resiliency, and other aspects of forest restoration.*”¹³⁵

The FEIS acknowledges that the Center did request that the Luna project “*incorporate the collaboratively developed products and design features from 4FRI,*” and responds by pointing to a “*Vegetation (Silviculture) Report ... appendix 3 Luna Restoration Project Old and Large Tree Implementation Strategy.*”¹³⁶ This report is not attached to FEIS, nor does it appear available online. Only nine hours before the objection deadline did the Forest Service provide to us this document, making it difficult to determine if and how the Luna Project will protect old and large trees. Thank you for getting these requested documents to us for review, albeit very late in the process.

The Forest Service’s Old Tree Implementation Plan and FEIS show that the agency violated NEPA by:

- Failing to consider an alternative that fully protected old and large trees;
- Failing to provide a rational basis for not protecting old and large trees consistent with 4FRI and West Escudilla Restoration Project design criteria;

¹³³ Letter from Joe Trudeau (Center for Biological Diversity) to Emily Irwin, October 17, 2017.

¹³⁴ Letter from Joe Trudeau (Center for Biological Diversity) to Adam Mendonca, June 22, 2018.

¹³⁵ Ibid.

¹³⁶ FEIS at 201.

- Failing to make available to the public and the decisionmaker data required to understand the impacts of the project; and
- Failing to respond to expert reports provided in comments.

B. The FEIS Indicates That Old and Large Trees Will Not Be Protected

The Luna FEIS does not provide sufficient protections for old and large trees and old growth stands. The FEIS states that

*“treatments would be designed to retain old and young large trees whenever possible unless they must be cut for threats to human health, safety, and property, and where the removal of an old tree is necessary for forest health concerns (high populations of insect or severe disease), or where removal is needed to reduce tree density to achieve project desired conditions.”*¹³⁷

Allow us to interpret this statement into more clear realities:

This guidance makes it clear that old and large young trees will be retained “*whenever possible unless*”...

- They need to be removed to protect human property, which in the case of the Luna Project may mean any priority private lands covered under the Community Wildfire Protection Plan and considered as Wildland Urban Interface areas. This could also mean protection of powerlines which cross the project area;
- If they have high populations of insect or severe disease which likely includes bark beetles or mistletoe, both of which are naturally occurring disturbance agents. The neighboring West Escudilla Restoration Project has made the news¹³⁸ for intensive cutting of old growth trees because they had dwarf mistletoe.¹³⁹ The Luna FEIS does not provide any assurances that this approach to mistletoe sanitation will not occur on the Luna landscape.
- They stand in the way of achieving desired conditions like regeneration openings¹⁴⁰, interspaces, and other density reductions. Essentially, this flexibility means that no old or large young tree is safe from being removed if it is determined to prevent the silviculturalists from achieving desired density or spatial arrangement.

¹³⁷ FEIS at 9, emphasis added.

¹³⁸ https://azdailysun.com/news/old-growth-trees-cut-in-violation-of-fri-mission/article_2628fe18-672d-5cf3-bbbf-8d1a1134fa36.html#tracking-source=home-top-story

¹³⁹ See exhibit titled “Field Report - Little Timber Sale Old Growth Logging - CBD - 10.15.2018”

¹⁴⁰ For example see FEIS at 20.

The FEIS does again affirm that old and large trees will be logged in the statement that “*Additional old and large trees **may** be retained when not in conflict with meeting the desired conditions for this project.*”¹⁴¹

The FEIS directs the public to some form of old and large tree implementation plan which “*is located in the appendix 3 Luna Restoration Project Old and Large Tree Implementation Strategy of the vegetation report.*”¹⁴² When we discovered that the project website did not contain this appendix, we attempted to acquire it, and other appendices, via emails to Lisa Mizuno, Environmental Coordinator and Emily Irwin, District Ranger¹⁴³. Both individuals replied that the request had been forwarded to the FOIA Coordinator for processing.

As stated by the Center in one of those emails, “*The FEIS and Decision refer the reader to specialist reports numerous times, and these are not posted on the project website which many forests often do. This makes it difficult if not impossible for the public to understand the project and decision.*” Only nine hours before the objection deadline did the Forest Service provide to us this document, making it difficult to determine if and how the Luna Project will protect old and large trees.

The FEIS directs the public to specialists’ reports approximately twenty times, but these are not easily made available to the public for review. Of key interest to the Center is the vegetation (silviculture) report and appendices, as those contain important project elements such as the Luna Restoration Project Old and Large Tree Implementation Strategy. Requests for these essential documents have only been fulfilled nine hours prior to the deadline for this objection.

The Forest Service’s reliance upon material omitted from the EIS to support the agency’s failure to protect all large and old trees violates NEPA, its “*hard look*” standard, and the law’s requirement that agencies provide for meaningful public participation. Federal courts have ruled that key data to support the agency’s conclusion cannot be concealed from the public by placing it in the administrative record.¹⁴⁴

Suggested Remedy: The Forest Service should issue a revised EIS for public comment that includes at least a summary of the information contained in the silvicultural reports, and should post the appendices online for public review, rather than requiring the public to submit a FOIA request.

C. Best Science Recommends against Mistletoe-Infected Old Tree Removal

¹⁴¹ FEIS at 20, emphasis added.

¹⁴² FEIS at 9.

¹⁴³ Email correspondence from Ted Zukoski (Center for Biological Diversity) to Emily Irwin and Lisa Mizuno, July 2, 2019, and email correspondence from Joe Trudeau (Center for Biological Diversity) to Emily Irwin, July 3, 2019.

¹⁴⁴ See *Blue Mountains Biodiversity Project v. Blackwood*, 161 F.3d 1208, 1214 (9th Cir. 1998) (“We do not find adequate support for the Forest Service’s decision in its argument that the 3,000 page administrative record contains supporting data. The EA contains virtually no references to any material in support of or in opposition to its conclusions. That is where the Forest Service’s defense of its position must be found.”).

The FEIS states that even aged management will be used in areas of high insect or disease infestation.¹⁴⁵ This is the only place where “mistletoe” is mentioned in the entire FEIS. As stated above, the FEIS also states that old trees will be cut when necessary for forest health concerns such as high populations of insect or severe disease.¹⁴⁶ The FEIS states that “*Group selection of excess size classes and diseased patches would be used to regenerate 20 percent of the area.*”¹⁴⁷

In our scoping comments of October 16, 2017, we requested that Luna Project adopt “*agreements developed in the 4FRI stakeholders group that govern the protection of old and large trees, mature and old growth structure, treatments in stands infected with mistletoe, and monitoring of treatments in MSO habitats.*”¹⁴⁸

We included as an attachment the Centers objection letter to the West Escudilla Restoration Project wherein we requested that the project incorporate 4FRI stakeholder-developed treatment approaches for stands with occurrence of southwestern dwarf mistletoe. We also attached a 4FRI stakeholder’s letter addressing the unanimous rejection of the Forest Service’s proposals to utilize aggressive overstory removal and even-aged management approaches in treating stands infected with mistletoe. We then included these same attachments in our comments on the DEIS, submitted on June 20, 2018.¹⁴⁹

The aforementioned 4FRI Stakeholders (SHG) letter of April 27, 2017, rejecting the Forest Service’s dwarf mistletoe proposal for 4FRI stated:

- “*Dwarf mistletoe is a natural disturbance agent and component of coniferous forests within the planning area. The plant provides food and cover for wildlife; large-tree mortality caused by mistletoe is an important factor in recruiting snags that provide habitat for cavity-nesting birds and other species.*”
- “*The historical and recent data presented by USFS did not make a compelling case that mistletoe infections within the planning area are significantly outside the natural range of variability and pose a meaningful obstacle to meeting restoration objectives.*”
- “*The SHG feels that restoration treatments consisting of mechanical or hand thinning, followed by application of prescribed/managed fire at regular intervals, meet the intent of the Forest Plans and are the preferred approach for stands with high levels of mistletoe infection. Where needed, those stands could also be buffered to reduce mistletoe spread.*”

¹⁴⁵ FEIS at 5.

¹⁴⁶ FEIS at 9.

¹⁴⁷ FEIS at 20.

¹⁴⁸ Letter from Joe Trudeau (Center for Biological Diversity) to Emily Irwin, October 17, 2017.

¹⁴⁹ These attachments are again included as an exhibit.

- *“The SHG also feels that traditional silvicultural approaches to managing dwarf mistletoe (e.g. overstory removal, even-aged management) are inconsistent with an ecological restoration approach and are not supported by the best available science.”*

These four points are particularly relevant to the Luna landscape given its geographic proximity to the 4FRI landscape; however the FEIS failed to address or respond to these comments. The agency’s failure to respond to these comments violates NEPA.¹⁵⁰ The FEIS does not provide baseline conditions of existing mistletoe (ponderosa pine or Douglas-fir) infection levels, therefore cannot have identified where even-aged sanitation cutting would occur, and as such cannot have analyzed the effects of treatments on the environment.

The FEIS’s failure to address mistletoe treatments also violates NEPA’s mandate that the action agency to set an appropriate baseline detailing the nature and extent of the resources in the area. CEQ regulations implementing NEPA state that agencies must, in an EIS, *“succinctly describe the environment of the area(s) to be affected or created by the alternative under consideration.”*¹⁵¹ *“The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process.”*¹⁵² *“Without establishing ... baseline conditions ... there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA.”*¹⁵³

The FEIS also does not provide an alternative which treats mistletoe using restoration prescriptions focused on small diameter thinning for comparison to the current direction of even aged sanitation style logging. Failure to consider a reasonable alternative also violates NEPA.

In addition to not meeting the requirements of NEPA, the current direction of logging old growth if it has disease infection is contrary to restoration principles and does not follow the best available science.

One of the most often cited scientific articles on southwestern ponderosa pine restoration stated that a core ecological restoration principle is:

“Retain trees of significant size or age.—Large and old trees, especially those established before ecosystem disruption by Euro-American settlement, are rare, important, and difficult to replace. Their size and structural complexity provide critical wildlife habitat by contributing crown cover, influencing understory vegetation patterns, and providing future snags. Ecological restoration should protect the largest and oldest trees from cutting and crown fires, focusing treatments on excess numbers of small young trees. Given widespread agreement on this point, it is generally advisable to retain ponderosa trees larger than 41 cm (16 inches) dbh and all trees

¹⁵⁰ See 40 C.F.R. 1503.4(a) (“An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond ... stating its response in the final statement.”).

¹⁵¹ 40 C.F.R. § 1502.15.

¹⁵² See Council on Environmental Quality, *Considering Cumulative Effects under the National Environmental Policy Act* at 41 (January 1997).

¹⁵³ *Half Moon Bay Fishermans’ Mktg. Ass’n v. Carlucci*, 857 F.2d 505, 510 (9th Cir. 1988).

with old-growth morphology regardless of size (i.e., yellow bark, large drooping limbs, twisted trunks, flattened tops).”¹⁵⁴

A recent scientific review paper¹⁵⁵ stated that

“Today’s forests are deficient in large, old trees, which have unique structural characteristics and represent centuries of genetic diversity” ... and that “Some old presettlement trees with mistletoe infestation are often targeted in traditional silvicultural techniques for the management of mistletoe. However, some of these trees should be retained for ecological value and because infection growth is slower in these larger old trees.”¹⁵⁶

This ERI working paper provides a table (below) of recommended silvicultural prescriptions for three levels of dwarf mistletoe infection. It recommends that old trees are retained, and if the infection is severe, to defer mechanical thinning and use fire only. The Luna FEIS does not make clear that this best available science has been used in developing the projects approach to dwarf mistletoe.

Compatible Silvicultural Prescription	
Light to Moderate DM infestation: <ul style="list-style-type: none"> • Uneven-aged prescriptions that are relatively open, maintaining groups of presettlement trees (old trees) with interspaces and openings (40-80 ft between groups). • Group selection with thinning in the matrix; Retain all presettlement trees and use interspaces and openings with intergroup spacing of 40-80 ft. • Be flexible and take advantage of opportunities to leave size/age class diversity. • Repeated entries with prescribed fire are necessary to maintain openings. 	Moderate to Severe DM infestation: <ul style="list-style-type: none"> • Even-aged management maintaining groups of presettlement trees and openings (40-80 ft between groups). • Group selection with thinning between groups. Retain all presettlement trees and remove all blackjacks. Maintain openings and interspaces (40-80 ft between groups). • Be flexible. If DM infestation is patchy, may need to divide up stand at treat accordingly. Take advantage of opportunities to leave size/age class diversity. • Repeated entries with prescribed fire are necessary to maintain openings.
	Severe DM infestation: <ul style="list-style-type: none"> • Use of fire only. Severely infested stands may be deferred and allowed to burn or left as wildfire habitat.

Suggested Remedy: The Forest Service should prepare a revised EIS for public comment that: (1) includes data concerning the baseline condition of mistletoe in the forest in the project area; (2) responds to and incorporates the best available science concerning mistletoe as described in the 4FRI stakeholders letter and the ERI working paper; and (3) analyze in detail an alternative that treats mistletoe using restoration prescriptions

¹⁵⁴ Page 1425 in Allen, C.D. M.A. Savage, D.A. Falk, K.F. Suckling, T.W. Swetnam, T. Schulke, P.B. Stacey, P. Morgan, M. Hoffman, and J.T. Klinge. 2002. Ecological restoration of southwestern ponderosa pine ecosystems: A broad perspective. *Ecological Applications* 12(5): 1418-1433.

¹⁵⁵ Wasserman, T., and A.E.M. Waltz. 2018. Restoration as a Mechanism to Manage Southwestern Dwarf Mistletoe in Ponderosa Pine Forests. ERI Working Paper No. 39. Ecological Restoration Institute, Northern Arizona University. 11 pp.

¹⁵⁶ Ibid at 4.

focused on small diameter thinning for comparison to the proposed action of even aged sanitation style logging.

D. The FEIS Shows That Existing Conditions are Deficient in Old and Large Trees

The FEIS provides several forms of data which indicate that old and large trees are deficient on the Luna landscape, including tables containing data showing Stand Density Index, Vegetation Structural Stage, and Old Growth Management Areas. These data all confirm that there is a lack of old and large trees on the landscape within the project area and that current amounts are below desired conditions.

1. Stand Density Index Indicates Relative Deficiency of Mature Stands

Table 2¹⁵⁷ in the FEIS shows existing and desired stand density index for the Luna project area. While the FEIS is correct in stating that forested stands in zones 1, 3, and 4 are within the desired range and forested stands in zone 2 are slightly above the desired range, it does not consider what existing landscape percentages are in relation to desired landscape percentages. Looking closer, the data indicate a relative overabundance of generally open, regenerating, and low density forest compared to denser, mature forest. Table 2 illustrates that:

- Comprising 19% of the existing landscape, Zone 1 areas (most open, least inter-tree competition, maximum growth, minimum stand volume) nearly exceed the desired percentage of the landscape of 10-20%.
- Comprising 33% of the existing landscape, Zone 2 areas (moderately open, some inter-tree competition, and intermediate tree growth and stand volume) actually exceed the desired percentage of the landscape of 20-30%.
- Comprising 38% of the existing landscape, Zone 3 areas (mature, dense, maximum stand volume, slowing growth, and active inter-tree competition) is in the lower half of the range of desired percentage of the landscape of 30-50%.
- Comprising 10% of the existing landscape, Zone 4 areas (very dense, stagnated growth, high inter-tree competition, and mortality-related volume decline) is barely meets the desired percentage of the landscape of 10-20%, with ample room for expansion on the landscape.
- Zones 1 and 2 can be considered generally open stands, and currently occupy 52% of the landscape. This percentage of the landscape currently exceeds the desired range of 30-50% of the landscape.
- Zones 3 and 4 can be considered generally dense stands, and currently occupy 48% of the landscape. This percentage of the landscape is in the lower third of the desired range of 40-70% of the landscape.

¹⁵⁷ FEIS at 7.

Based on desired conditions listed in Table 2, the relative deficiency of generally dense stands compared to the overabundance of generally open stands supports a need to manage more areas *“for wildlife requiring higher tree densities and canopy cover, and promote development of old growth characteristics in areas designated as old growth.”*¹⁵⁸ This condition is substantiated in the data shown in Table 4¹⁵⁹ where the existing portion of the landscape that is in Canopy Density Class C (“Closed”) is just 60% of what is the desired condition for the landscape. Additionally, according to Table 6¹⁶⁰ the proportion of the landscape that is managed for old growth features lacks desired canopy cover in 66% of ponderosa pine areas and 57% of mixed-species areas.

2. Vegetation Structural Stage Proportions Indicate Relative Deficiency of Mature Stands

Table 3¹⁶¹ shows convincingly that there is a dramatic deficit of stands of large, old trees, and a surplus of stands of small, young trees. Below, we have copied Table 3 and added a basic “takeaway message”

Vegetation Structural Stage (VSS)	Existing Condition (percent acres)	Desired Condition (percent acres)	Takeaway Message
VSS 1 (0.0–0.9’)	22%	10%	Vast excess of areas of regeneration and areas in openings
VSS 2 (1.0–4.9’)	Less than 1%	10%	Deficiency of stands of young trees
VSS 3 (5.0–11.9’)	30%	20%	Excess of stands of small to medium trees
VSS 4 (12.0–17.9’)	25%	20%	Excess of stands of medium trees
VSS 5 (18.0–23.9’)	16%	20%	Lack of stands of large trees
VSS 6 (24’ +)	8%	20%	Dramatic lack of stands of very large trees.

The “takeaway message” from current VSS class distributions shown in Table 3 is that there are enough openings of regeneration to grow in to fill the void in young stands, and that there are far too many dense stands of small to medium trees and in turn a complete lack of stands of large, old trees. Mature and old growth features and ecological processes develop in stands in the upper half of VSS 4 and VSS 5 and 6 classes. These maturing and old growth stands are deficient on the landscape, even in areas currently managed for old growth features. To support this

¹⁵⁸ FEIS at 7.

¹⁵⁹ FEIS at 8.

¹⁶⁰ FEIS at 10.

¹⁶¹ FEIS at 8.

conclusion, see to Table 6¹⁶² which shows that the proportion of the landscape that is managed for old growth features is deficient in large trees in 32% of ponderosa pine areas and 55% of mixed-species areas.

3. Data in the FEIS Indicate Deficiency in Large, Old Trees and Old Growth Stands

Based on current data presented in the FEIS in several tables, and evaluated here, the Luna landscape has:

- A deficit of large trees and overabundance of small trees (Table 3).
- A deficit of dense, closed-canopy stands and relative overabundance of open stands (Tables 2, 4 and 6).
- A deficit of VSS 5 and VSS 6 stands (trees over 18” DBH) (Table 3).
- A deficit of large trees, large snags, and closed canopy conditions in areas managed for old growth features (Table 6).

All of this information demonstrates that large and old trees are below target levels for the project area. This demonstrates that an alternative that protects large and old trees is reasonable, and indeed may be necessary to achieve desired future conditions.

Suggested Remedy: The Forest Service should prepare a revised EIS for public comment that includes an alternative (or mitigation measure) that contains an unambiguous restriction on cutting any and all old growth trees (per the 4FRI Stakeholders group Old and Large Tree Retention Strategy), regardless of species, except in cases of direct physical threat to human life. This restriction should apply to Wildland Urban Interface thinning, severe insect infestation and disease infection, MSO and northern goshawk habitat, and the general landscape. The alternative or mitigation measure should include prescriptive guidance for Stands with a Preponderance of Large Young Trees (SPLYT) as well as the large tree retention strategy components developed and vetted by 4FRI stakeholders, and adopted by the Forest Service as the 4FRI Old Tree and Large Tree Implementation Plans. This information should be included in the revised EIS and not be segregated into an appendix. The commitment to not cutting old trees should be reiterated throughout the revised EIS to ensure clarity and unambiguity. The phrase *“the removal of an old tree is necessary for forest health concerns (high populations of insect or severe disease), or where removal is needed to reduce tree density to achieve project desired conditions,”* and any related form of this language, should be removed from the revised EIS. Failure to accommodate this remedy, and to adopt an alternative that contains such measures, would ensure that the Center cannot support this project as it will not be a true “Restoration” project.

¹⁶² FEIS at 10.

4. The Luna FEIS Considers Old Tree Age Inconsistent with Regional Age Delineations.

Appendix 3 to the Silvicultural Report to the FEIS states that old trees in the ponderosa pine vegetation cover type are those over 180 years old¹⁶³ and that old trees will be retained based on this age.¹⁶⁴ This is inconsistent with restoration practice in the southwest, where old trees are generally considered those 150 years or older, including 4FRI, which we requested the incorporation of the 4FRI old tree retention strategy. Elsewhere in the southwest, old trees are considered those 150 years and older, including in the neighboring West Escudilla Project, where *“Old pre-European settlement trees (>150 years old) will be retained, with few exceptions, regardless of their diameter, within the West Escudilla project area. Removal of old trees will be rare. Exceptions will be made for threats to human safety, and severe disease.”*¹⁶⁵ In addition, the West Escudilla Old Tree Implementation Plan states that old trees will be determined by the following characteristics described in Figure 1 of Appendix C¹⁶⁶.

- Age –150 years and older.
- DBH. – Site dependent.
- Bark – ranging from reddish brown, shading to black in the top with moderately large plates between the fissures to reddish brown to yellow, with very wide, long, and smooth plates.
- Tops – ranging from pyramidal or rounded (occasionally pointed) to flat (making no further height growth).
- Branching – ranging from upturned in upper third of the crown, horizontal in the middle third, and drooping in the lower third of the crown to mostly large, drooping, gnarled, or crooked. Branch whorls range from incomplete and indistinct except at the top to completely indistinct and incomplete.

The FEIS neither acknowledges nor explains the conflict between the definition it chooses and other Forest Service definitions.

Suggested Remedy: The Forest Service should prepare a revised EIS for public comment that includes an amendment to the Forest Plan that would classify old trees as those over 150 years, as well as replace the current Luna Old Tree Implementation Plan with the

¹⁶³ Appendix 3 to the Vegetation and Silviculture Report at 1.

¹⁶⁴ The Center did not comment on this issue because the definition of old growth as 180 years old was not included in either the DEIS or the FEIS. It was included in Appendix 3 to the Vegetation and Silviculture Report, which was only made available to the Center today for the first time. See 36 C.F.R. § 218.8(c) (Objector may raise issue for the first time in the objection if “the issue is based on new information that arose after the opportunities for comment.”).

¹⁶⁵ Appendix C to the West Escudilla Environmental Assessment at 77.

¹⁶⁶ Appendix C is included as an attachment to this objection.

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4FRI Old Tree Implementation Plan. Addressing this inconsistency with a plan amendment is in line with the numerous amendments already being sought by the Forest Service.

CONCLUSION.

We appreciate your consideration of the information and concerns addressed in this objection, as well as the information included in the attachments which have been emailed to the project email address. Pursuant to 36 C.F.R. § 218.11, we respectfully request to meet with the reviewing officer to discuss these concerns and suggested resolutions. Should you have any questions, please do not hesitate to contact Mr. Trudeau at the number provided below.

Respectfully,

A handwritten signature in black ink, appearing to read "Joe Trudeau", followed by a long horizontal line.

Joe Trudeau, Southwest Advocate
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