
File Code: 1570
Date: July 18, 2022

Dorothy Holasek


Dear Ms. Holasek:

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

The legal notice for the objection filing period was published on March 18, 2022. Your timely objections (22-03-00-0002-O218, 22-03-00-0003-O218, 22-03-00-0004-O218) were received on April 19 and April 26, 2022 and were considered pursuant to the regulations at 36 CFR 218. With the letter you received to acknowledge your objection, dated May 12, 2022, I notified you that I would be extending the review timeframe. This allowed us the opportunity to meet in an objection resolution meeting on July 6, 2022 in order to discuss issues you raised in your objection. We discussed your concerns related to prescribed burning and public health and black carbon soot produced through prescribed burns and wildfires and its albedo effect. This letter, including direction to the Responsible Officials to clarify some information in the project record, is my written response to your objection. The "Contention" labels are summaries of your objection concerns while the "Response" labels are our response to those contentions.

Contention 1a: You state that the four Forests of the 4FRI are located entirely within the Radiation Exposure Compensation Act (RECA) counties of northern Arizona and that this point was omitted from the FEIS/Draft ROD. 4FRI and co-existing USFS burn programs will re-suspend the long-lived radionuclides that are stored in the forests of northern Arizona in the form of gases and particles. [Objections 1 & 2, p. 1].

Response: The FEIS Appendix H-Response to Comments (RTC) addresses your concern, stating that the Rim Country area has not been significantly contaminated with radiological release events or nuclear-related incidents [PR 688, pp. 333-335]. However, we acknowledge that we could clarify this statement with some information added to the FEIS. In 2013, in cooperation with Arizona Department of Environmental Quality (ADEQ), Arizona Department of Health Services, and Arizona Emergency Management, the Arizona Radiation Regulatory Agency, with support from the 4FRI Team, prepared a question-and-answer document which addresses concerns around radiation and prescribed burning [PR 27]. The Forest Service and these four agencies jointly determined that based on research conducted on controlled burns and wildfires in the Southwestern United States, the amount of radioactive material that is released during a



fire is extremely low, less than 1 mrem, and would lead to little, if any, increase in radiation exposure beyond what is considered to be the average or background radiation exposure for most people in the United States.

In addition, the RTC references research conducted and published by Hao et al. (2018), which indicates the main area of concern was pine needles which were still below unsafe levels. In the Fire Ecology Specialist Report, it was determined that duff would be the main contributing factor to prescribed burning conditions [PR 674, p. 40], which based on Hao et al. research is found to have no containments for cesium CS-137, which the objector mentioned as the main issue of concern. Links to the 2013 public brochure and the Hao et al. 2018 research article are both provided in the RTC [PR 688, p. 335].

This information along with an additional study by Yoschenko found that higher intensity and severity fires lead to greater particulate exposure. Prescribed burning aims to reduce fire severity and intensity [PR 19]. Therefore, the argument could be made that prescribed burning under cooler conditions could re-suspend less radionuclides than wildfires. If prescribed fire was not used, it is highly likely that the proposed project area would experience a wildfire, thus burning at a higher intensity and severity than prescribed burning [PR 674, p. 41].

The FEIS adequately considers the effects of prescribed burning and release of radionuclides within the project area, including those counties covered by the Radiation Exposure Compensation Act (RECA). However, as mentioned above, additional information to clarify this could be added to the FEIS.

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

Contention 1b: You contend the references cited in the FEIS/Draft ROD are not the best available science. These documents cite the “Prescribed Burns and Radiation” Pamphlet produced by the USFS, which should be removed from the USFS website for claiming that prescribed burns cannot get hot enough to re-suspend CS-137 into the atmosphere. You state the “New Mexico studies” loosely referred to in the FEIS/Draft ROD are also not the best available science. In “Cesium Emissions from Laboratory Fires” from the Journal of the Air and Waste Management Association that the FEIS/Draft ROD quotes, the authors explain that the exposure they are assessing is *external exposure*. You claim that talking and swallowing saliva outdoors constitutes internal exposure along with inhalation and that once the radionuclides are inside the body they can lodge there and continue to irradiate the surrounding tissue. The authors suggest, among other things, finding ways to sequester the contamination such as “planting trees and shrubs... to help fix the contaminants on the site”. The National Environmental Policy Act, Executive Orders 12890 and 13990, The Council on Environmental Quality, and the USDA’s Environmental Justice Programs do not allow the USFS to simply dismiss threats to public health as outside of their scope of analysis. The resuspension of these radionuclides through the USFS burn programs constitutes an adverse effect on the health of our citizens. Labeling this issue as “outside the scope of this analysis” is not a legal statement and is in violation of these laws and executive orders. [Objections 1 & 2, pp. 1-3; Objection 3, pp. 1-2]

Response: The National Environmental Policy Act of 1970 requires “[a]gencies shall insure the professional integrity including scientific integrity, of the discussions and analyses in

environmental impact statements” (40CFR 1502.24). This mandates that agencies “shall discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement” (40 CFR1502.9(b)). You previously provided comments that included several scientific sources which were addressed in the project record [PR 600, pp. 56-57].

An objective of considering best available science is for scientists to provide a meaningful context to scientific information so that its validity might be judged and therefore useful to the decision maker. More sources may be considered than are specifically referenced in the FEIS. The Literature Cited section demonstrates that Best Available Science was considered when completing analyses documented in the FEIS [PR 687].

Contention 1c: You state that Apache County, the poorest county in the state of Arizona, was left out of consideration for potential environmental justice issues in the FEIS/Draft ROD. You contend that low-income communities and Native Americans will bear the brunt of the deadly 2.5-micron smoke particles and the radionuclides that will hitch a ride on the smoke particles; this project will inundate them with radionuclides. The Forest Service claims they can give sufficient notice to the public before a prescribed burn so that downwind populations can protect themselves but you counter that there is no such thing as effective averting behavior for citizens. [Objections 1 & 2, pp. 6-7]

Response: Elements of this contention are also addressed in response to Contention 1b. None of the alternatives eliminate smoke. The proposed action is designed to reduce threats from wildland fires. As analyzed in the FEIS, Chapter 3, Fire Ecology analysis, prescribed burns have the advantage over wildland fires of being controlled and regulated by the Arizona Department of Environmental Quality (ADEQ) in order to protect human health. Projects proposed to be implemented with the draft ROD, both prescribed burning and otherwise, would comply with the Federal Clean Air Act (CAA), which is implemented at the state level under the ADEQ. These rules require projects to not cause exceedances of the National and State Ambient Air Quality Standards (NAAQS) in populated areas and ADEQ has ultimate jurisdiction over determining permissive burn days as well as authorizing implementation of prescribed burns. For burning authorizations, the ADEQ requires the Federal land management agencies to follow and use the emissions reduction and smoke management techniques stipulated within their documentation. A detailed description of the ADEQ’s smoke management regulation, Article 15, and the state’s smoke management program is described under Other Relevant Law, Regulation, or Policy in the Air Quality Specialist Report [PR 660].

The FEIS Appendix H-Response to Comments (RTC) acknowledges the oversight of omitting Apache County and analysis for this county was included in the final analysis of three resource areas: Air Quality; Socioeconomics; and Tribal Relations [PR 688, p. 338]. The Socioeconomic Specialist Report specifically considers this county in the affected environment narrative [PR 681, pp. 4-10], as does the Air Quality Specialist Report [PR 660, pp. 7-14]. The Tribal Relations Specialist Report affected environment section [PR 685, pp. 6-10] references American Indian Tribes, including federally recognized Navajo Nation and the Fort Apache Indian Reservation (parts of these lands overlap with Apache County).

The FEIS Volume 2 acknowledged by county that the communities within that county could be

disproportionally affected by smoke due to the remoteness and lack of access to resources such as internet [PR 687, p. 58]. However, these communities would also be impacted if the smoke originated from a wildfire [PR 687, p. 12; table, 70], and the impacts could be much longer lasting if coming from a wildfire, especially if the community is in the prevailing local wind path of any fire activity (e.g., if winds blow southeast to northwest and community is northwest of the area, likely to get the smoke impacts from fires). For instance, duration of smoke for prescribed burning is often over shorter periods of time (several days) as compared to wildfires that have the potential to last for months, drastically effecting emissions [PR 687, pp. 9, 10, 70]. Prescribed burning typically focuses on shoulder seasons, implementing burns of lower/moderate severity whereas wildfires can burn high severity over large areas.

Your contention that “low-income communities and Native Americans will bear the brunt of the deadly 2.5-micron smoke particles and inundate them with radionuclides”, is addressed through responses to comments [PR 600, pp. 56-57; PR 688, pp. 334-341].

For the contention regarding effective averting behavior for citizens, the following response was issued: “The commenter is correct in stating that the Forest Service is responsible for protecting public health from the impacts of prescribed fire smoke emitted from National Forest System lands” [PR 688, p. 337]. Notification strategies are a required best practice for State-regulated burn plans. These allow businesses and individuals to adapt, as possible and warranted. The FEIS acknowledges that some populations or individuals may not have the resources to engage in averting behavior, but that implementation of prescribed fire activities will require compliance with the Federal Clean Air Act and State of Arizona air quality rules, as well as mitigations included in this analysis. These requirements are intended and designed to mitigate any potential public health impacts [PR 688, p. 337].

Contention 1d: You state that the FEIS/Draft ROD provided the cost per acre to implement this proposal, but this does not include the cost to society from the pm 2.5 smoke particles and deadly substances that they will carry. The Forest Service is aware of these scientific studies and still insists on their burn programs. The Forest Service needs to value human health before it can put a true dollar cost to society for their burn programs. [Objections 1 & 2, p. 7]

Response: According to CEQ, a cost-benefit analysis should be included in the analysis if it would be relevant to the choice among alternatives. The weighing of merits and drawbacks need not be displayed in a monetary cost-benefit analysis when there are qualitative considerations (40 CFR 1502.23).

Potential negative effects of prescribed burning on air quality and human health was a significant issue addressed in the Issues section of the FEIS, chapter 1. Alternative 3 was partially developed to respond to this issue and includes fewer acres of prescribed burning than other action alternatives [PR 686, p. 29]. Alternative 2 proposes a total of 991,060 acres of prescribed burning, while Alternative 3 proposes 528,850 acres (about half of Alternative 2) [PR 686, p. 71]. In the FEIS, chapter 2, the 4FRI Interdisciplinary Team (IDT) considered an alternative that eliminated the use of prescribed fire; however, while the team considered this alternative, it was not in detail because it did not meet the purpose of the project, could negatively affect forest structure, and could cause vegetation to further depart from the natural range of variation. Fire is also a critical natural process, the use of which, to restore ponderosa pine forests to healthier

conditions, is well documented [PR 686, pp. 64-66]. Appendix C, Design Features, Best Management Practices, Mitigation, and Conservation Measures contains design features to minimize the effects of smoke, including the notification of interested or concerned members of the public in advance of prescribed burns [PR 662, p. 279].

The FEIS, chapter 2, Table 26 (Comparison of Alternatives), lists the indicators for the smoke/air quality significant issue: potential for wildfire and prescribed fire emissions, levels of modelled criteria air pollutants and greenhouse gases, and effects of smoke on the quality of life and tourism. Under the action alternatives, smoke from prescribed fire emissions would be highest under Alternative 2 and reduced under Alternative 3. Under the no action alternative, smoke would come solely from wildfire events, with unpredictable magnitude and timing. According to modelling results, the levels of criteria air pollutants would be lower under either action alternative when compared to the no action alternative. The effects of smoke on quality of life would be short-term and minimal under the action alternatives, whereas the no action alternative could result in wildfires with large amounts of smoke and emissions and negative effects to quality of life [PR 686, pp. 77-78].

The health effects of smoke are addressed in the FEIS Chapter 3 Air Quality section [PR 688, pp. 1-38]. Controlled prescribed burns are regulated and emissions are monitored in the same manner as vehicle emissions and industrial emissions. Prescribed fires are initiated under conditions that allow managers to meet both control objectives (fire behavior), and resource objectives (fire effects, including air quality effects) [PR 687, pp. 9-10]. The action alternatives would alter stand structure to promote surface fire over active crown fire, decrease surface fuel loading and would have the least negative environmental consequences to air quality [PR 687, p. 25].

The Socioeconomics effects section of chapter 3 of the FEIS discloses that prescribed fire treatments could negatively affect the health and quality of life of nearby residents and visitors. Alternatives 2 and 3 would decrease the likelihood of wildfires and its resultant smoke, while the no action alternative would contribute to a greater risk of wildfire [PR 688, p. 76].

The Socioeconomics Specialist Report contains information related to the social cost of prescribed burning, stating that smoke emissions from prescribed fire and wildfire can have health effects on the young, the elderly, and individuals with existing health issues. Smoke from uncharacteristic wildfire is less likely under the action alternatives [PR 681, pp. 15-16]. This report also contains a literature discussion of the economic costs and benefits of ecological restoration and hazardous fuel treatments, noting that prescribed fire reduces property damage from wildfire. Other studies conclude that lack of full accounting for nonmarket and ecosystem services of restoration activities and the resulting healthy ecosystems has led to fire-prone landscapes and that the benefits of restoration far outweigh the costs of wildfire. The Western Forestry Leadership Coalition estimates that total wildfire-related expenses could be as much as 32 times what is reported for suppression expenditures [PR 681, pp. 21-22].

Contention 1e: You state that the USFS states that it is not protocol to approach the U.S. Congress through the Secretary of Agriculture in order to change our outdated log export laws so that we can have a market for our small diameter trees. You contend that if these export laws changed it would provide a market for the small diameter logs. [Objections 1 & 2, p. 8]

Response: The FEIS Appendix H - Response to Comments addresses this concern by explaining that changing laws take an act of Congress [PR 688, p. 210]. There are no economically viable export markets for small diameter timber. Prohibition of exports of log form timber is an act of Congress and cannot be decided with this analysis and decision. The existing low market value of the wood products to be removed from the project area, such as small diameter trees, is thoroughly acknowledged throughout the analysis. The economic analysis addressed keeping operating costs low to improve the financial feasibility of forest treatments. Analysis of in-woods processing and storage sites was included to provide an implementation option to offset haul costs [PR 688, p. 210]. Logs from trees 9” dbh (diameter at breast height) and larger will be commercially harvested and removed, as well as smaller trees in locations where it is economically feasible to utilize them as biomass for electrical generation or wood pellet manufacturing. Unmerchantable branch material and very small trees cut by thinning are proposed to be treated by fire for recycling of nutrients and fire hazard reduction. Additionally, ponderosa pine and dry mixed conifer forests have evolved with frequent fire as an essential ecosystem function for recycling soil nutrients and maintaining forest composition, structure and ecological functions. Fire is an essential driver that is a component of ecological health and sustainability that is necessary for both restoration and maintenance of these fire dependent forest types [PR 686, pp. 19-20; PR 688, p. 270].

Contention 1f: You state that the Forest Service inappropriately announced that its skeleton air tanker fleet is “outside the scope of this analysis”. [Objections 1 & 2, p. 8]

Response: You link the restoration purpose of the project, which includes reducing catastrophic wildfire, to the Forest Service obtaining more firefighting equipment such as air tankers. Increasing the number of air tankers and purchasing airplanes was not proposed in this project and was not included in any alternative. The FEIS, chapter 1, Purpose and Need for Action section explains the purpose of the project is to restore and maintain the structure, health, and diversity of the forests and grasslands to conditions within the natural range of variation. One of the needs of the project is to restore the frequent low-severity fire regimes [PR 686, p. 21]. Restoring fire regimes involves vegetation treatments and prescribed fire which do not include the use of air tankers. Chapter 2 of the FEIS explains the actions that are proposed within this project [PR 686, pp. 36-63]. Use of air tankers is not part of the proposed action; nor is purchasing additional air tankers. The FEIS Appendix H - Response to Comments addresses this concern as well [PR 688, pp. 292, 339].

Contention 1g: You state that the Forest Service is determined to burn at all costs and refuses to consider no burn strategies such as goat grazing. [Objections 1 & 2, p. 8]

Response: The FEIS Appendix H - Response to Comments addresses this concern, stating that goat grazing is not being considered because of the scale of the project and the pace of proposed treatments. Also, while goats could be used to clean up smaller ladder fuels by eating shrubs and saplings, they would not eat the dead and down component [PR 688, p. 297].

As mentioned above, the FEIS, chapter 1, Purpose and Need for Action section explains the purpose of the project is to restore and maintain the structure, health, and diversity of the forests and grasslands to conditions within the natural range of variation. One of the needs of the project is to restore the frequent low-severity fire regimes [PR 686, p. 21]. Restoring fire regimes

involves vegetation treatments and prescribed fire.

The FEIS, chapter 1, Alternatives Considered and Eliminated from Detailed Study section explains why no burn strategies, including goat grazing, were not considered in detail. Controlled burning is good for the forests – it helps to thin canopy fuels, as well as seedling and saplings, especially gambel oak in the project area. It also helps to reduce dwarf mistletoe and bark beetle infection. Mechanical treatments do not produce the same beneficial effects that prescribed burning does [PR 686, pp. 64-66].

The Forest Service considered no burn strategies and adequately explained why the strategies were eliminated from detailed study.

Contention 1h: You contend that the project will release black carbon soot through its use of prescribed burns and managed wildfires. The albedo effect of our alpine snow and ice fields is degraded by the black carbon soot produced in the smoke of prescribed fires and managed wildfires. Black carbon soot landing on snow and ice fields could change the balance of the albedo effect on the earth's surface temperature. You state that there is no discussion of this in the FEIS/Draft ROD. [Objections 1 & 2; pp. 9-10; Objection 3, p. 1]

Response: Black carbon consists primarily of pure carbon and is formed through the incomplete combustion of fossil fuels, biofuel, and biomass. Black carbon contributes to particulate matter and is therefore regulated under the Clean Air Act NAAQS and ADEQ state ambient air quality standards. There are currently no regulations related to carbon soot as it pertains to snow and ice fields.

You made similar comments on the DEIS, saying “The black carbon soot that is generated or preventable by the FS through their burn programs lands on alpine snow/ice and hastens their melting. Without the reflective value of alpine snow/ice, the earth loses the ability to reflect back into space the solar radiation and mediate the climate” [PR 374, p. 13]. This comment was not considered substantive because it was not supported by information provided at the time and it did not question, with reasonable basis, the accuracy or adequacy of the methodology or information in the EIS. Black carbon soot produced from prescribed burning and its impact on the albedo effect was adequately addressed based on the limited amount of snow in the project area. You submitted literature on black carbon soot with the objection. This additional literature is not considered with this review as you do not have standing on this submission. Per 36 CFR 218.8(c), the literature shared in objections must have been submitted along with previous specific written comments related to the proposed project unless based on new information. The IDT did not receive this literature during an opportunity for comment to establish standing or demonstration of how this literature constitutes new information.

Conclusion

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


- Contention 1a: Add information on the Rim Country Project Area being within the RECA boundary to Appendix H, Response to Comments.
- Contention 1a: Add analysis from the DEIS on radioactive emissions from prescribed burning to the FEIS.
- Contention 1a: Update literature in the project record to clarify understanding of smoke effects.

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

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

Sincerely,

ELAINE
KOHRMAN



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Date: 2022.07.18
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ELAINE KOHRMAN
Deputy Regional Forester

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