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March 25, 2022

Chris French, Responsible Official
USDA Forest Service
Sidney R. Yates Federal Building 201 14th Street SW
Washington, DC 20024

RE: Nationwide Aerial Application of Fire Retardant -- Draft SEIS

Dear Mr. French,

Thank you for this opportunity to comment on the Forest Service's proposal "to continue aerial application of retardant as described in the 2011 Record of Decision (USDA Forest Service 2011d), with some modifications." DSEIS at i. FSEEE supports retardant use as a firefighting tool where its use is proven safe and effective in accomplishing incident objectives and complies with relevant state and federal law. The Forest Service's use of retardant falls short of these standards.

A. NEPA requires the Forest Service assess fire retardant effectiveness.

1. Effectiveness during initial attack

The draft SEIS begins its "environmental consequences" discussion with "average initial attack success rate, average annual flight hours for various aircraft used in aerial retardant delivery, and the percent of wildland fires that have been kept under 300 acres." DSEIS at 27. The first item (average initial attack success rate) and the last (percent of wildland fires that have been kept under 300 acres) are identical, i.e., the Forest Service's definition of "initial attack success rate" is the "percent of wildland fires that have been kept under 300 acres."[1]

There is no question, nor does the DSEIS assert otherwise, that determining how initial attack success rate differs between the "no action" and "action" alternatives is essential to a reasoned choice. If retardant use made no measurable difference in initial attack success, the environmental trade-offs (dead fish, polluted water, aircraft crashes) of dumping this toxic slurry would be difficult to justify, i.e., the "no action" alternative would be favored.

[1] As for the second item, "average annual flight hours" is not an "environmental consequence" of using retardant; it is a part of the retardant use action itself. Air pollution emitted by retardant aircraft, which is a function of flight hours, has an environmental impact, which has been overlooked in the DSEIS's analysis and should be considered.

The 2011 FEIS explained that "**[t]o truly understand** the influence of fire retardant on initial attack success and ultimate fire size, one would have to compare outcomes under similar fire behavior and fire retardant application circumstances." FEIS at Appendix O (emphasis added). "Only a comparison of fire retardant use and non-use under similar circumstances can allow any valid conclusions to be drawn as to effectiveness of fire retardant." *Id*. The FEIS asserted that "it is extremely difficult to accomplish this kind of controlled experimentation given the high degree of variability among wildfire incidents and the limited circumstances where fire can be allowed to burn unchecked for purely experimental purposes." *Id*.

In the ten years since the FEIS issued, what has the Forest Service done to close this critical information gap? Apparently, nothing. Instead of doing the necessary study, the Forest Service appears to have abandoned its "extremely difficult" position of ten years ago and now claims that it "is not possible to determine" how the initial attack success rate differs between alternatives. DSEIS at 27. Whether "extremely difficult" or "not possible" to "truly understand" fire retardant's initial attack effectiveness, the Forest Service has not met the "incomplete or unavailable information" requirements of 40 CFR § 1502.21.

If "extremely difficult," but nonetheless possible, the Forest Service is required to determine the "overall costs of obtaining" the missing information. *Id*. at (b). The Forest Service fails to disclose or even address the cost of the study it claims is necessary to a true understanding of retardant's initial attack effectiveness. In addition, without knowing the cost of obtaining this information, the Forest Service cannot advance to the rule's next step, which requires it determine whether this cost is "reasonable." *Id*. at (c). The potential annual cost savings of $58 million to $100 million in retardant program expenses (let alone the environmental costs and pilot lives saved) surely justify a robust study to determine whether retardant is "truly" effective. DSEIS at 44.

If it is "not possible" to obtain the necessary missing information (apparently the Forest Service's new position), the agency must explain the basis for its conclusion. The DSEIS fails to provide any explanation. Further, insofar as the Forest Service has changed its view from "extremely difficult" to "not possible," it must provide a reasoned explanation, including a factual basis, for this change. *Friends of Alaska Nat'l Wildlife Refuges v. Haaland*, 2022 U.S. App. LEXIS 6753 (9th Cir. 2022). The DSEIS does not do so.

Next, if "not possible," the Forest Service must provide a summary of existing relevant scientific evidence. 40 CFR § 1502.21(c)(3). The DSEIS (and FEIS) includes no scientific evidence relevant to retardant's contribution to initial attack success. This omission is troublesome because the Forest Service actually has the scientific data in its hands to do the controlled experiment the Forest Service says is necessary.

Each and every year, incident commanders place orders for fire retardant to suppress ignitions during initial attack while the fire is small. It can be presumed that when retardant orders are made, incident commanders believe that retardant will contribute to keeping the fire small. Each and every year, however, about half of ignitions do not receive the ordered retardant during initial attack because retardant is unavailable at that time for that location. The other half do receive the prescribed retardant treatment. This is called a "natural" controlled experiment. Natural controlled experiments are a credible and respected scientific methodology especially useful where, as here, it might be unethical to design an interventional controlled study. An

interventional study assigns fire ignitions randomly, in advance, as controls to receive no retardant. A natural experiment allows that assignation to be made by "nature," i.e., by virtue of a process (unavailability of retardant) not within the study designer's control. *See*, *e.g.*, Setia, M.S., "Ecological and Natural Experiments," *Indian J Dermatol*. 2017 Jan-Feb; 62(1): 25–28 (https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5286749/).

The Forest Service has in its hands the empirical data to do this analysis. The Forest Service knows which fires received retardant orders, when the orders were place, when (and if) the retardant was delivered, and whether the fire exceeded 300 acres. The Forest Service's fire records can be presumed credible. CEQ's rules require that this relevant existing credible scientific evidence be summarized and evaluated in the FSEIS. 40 CFR § 1502.21(c)(3) and (4).

In addition, since 2011, the Forest Service has avoided dumping fire retardant on 20% of its land. *See* NOAA Fisheries 2021 Biological Opinion at 20. These avoidance areas are mapped. Thus, it would be dead simple to calculate the initial attack success rate for fires that ignited within avoidance zones where, presumably, retardant is not used unless human life is at stake. FSEEE asks the Forest Service to make this disclosure. FSEEE also asks the Forest Service to evaluate the alternative of applying its avoidance zone criteria to all national forest land, i.e., to use retardant only where human life or public safety is at risk. While we do not endorse this alternative because retardant's effectiveness remains unproven, we believe it would be useful for comparison purposes.

Instead of making the required analyses and disclosures discussed above, the DSEIS starts and ends its retardant effectiveness assessment with this statement: "In 2019 the success rate of keeping wildland fires under 300 acres was 98.72 percent." DSEIS at 27. This statistic obscures much more than it illuminates. The 98.72% rate is based on **all** fires nationwide; it is not limited to ignitions where retardant was used. If the DSEIS also disclosed the fraction of ignitions that were actually treated with retardant, which is about 5%, the reader would understand immediately how irrelevant the 98.72% rate is to assessing fire retardant's effectiveness. Imagine a pharmaceutical company claiming its breast cancer drug is effective because 98% of women afflicted with breast cancer were alive five years after their diagnosis, but never disclosing that only 5% of these women had received their drug. Does the word "fraud" spring to mind?

When it comes to the relatively few (about 5%) of ignitions that do receive a retardant treatment, Forest Service research (not disclosed in the DSEIS) shows that initial attack success using airtankers is "quite low." *See*, Calkin, D.E.; Stonesifer, C.S.; Thompson, M.P.; McHugh, C.W. "Large Airtanker Use and Outcomes in Suppressing Wildland Fires in the United States," *Int. J. Wildl. Fire* 2014, 23, 259–271. Calkin, et al., report a 25% initial attack success rate on fires treated with fire retardant over a two-year period. Id. at 266. That's a far cry from the 98.72% success rate inferred by the DSEIS's lumping of non-retardant with retardant-treated ignitions.

The DSEIS could lessen, but not eliminate, this mis-direction by disclosing each national forest's initial attack success rate. At least then the reader and decisionmaker would know that the initial attack success rate is highest on national forests that use no retardant and lowest on national forests, primarily in California, that use substantial amounts of retardant. These facts paint a very different picture of retardant effectiveness than does the DSEIS's singular reliance on a nation-wide initial attack success rate that is irrelevant to the small fraction of ignitions actually treated with retardant.

2. Effectiveness during extended attack.

If retardant were used exclusively in initial attack, the DSEIS could be excused for not addressing its effectiveness in extended attack. In fact, half the retardant used is dumped during extended attack, after a fire has grown beyond 300 acres. *Id*. Calkin, et al., "confirm earlier work suggesting extensive use of large airtankers on extended attack, despite policy suggesting priority use in initial attack." The DSEIS never acknowledges this fact. The profligate use of retardant in extended attack, which Calkin, et al., note "may not be consistent with stated policy," raises important questions:

1) How does the Forest Service measure retardant effectiveness in extended attack? The DSEIS does not say.

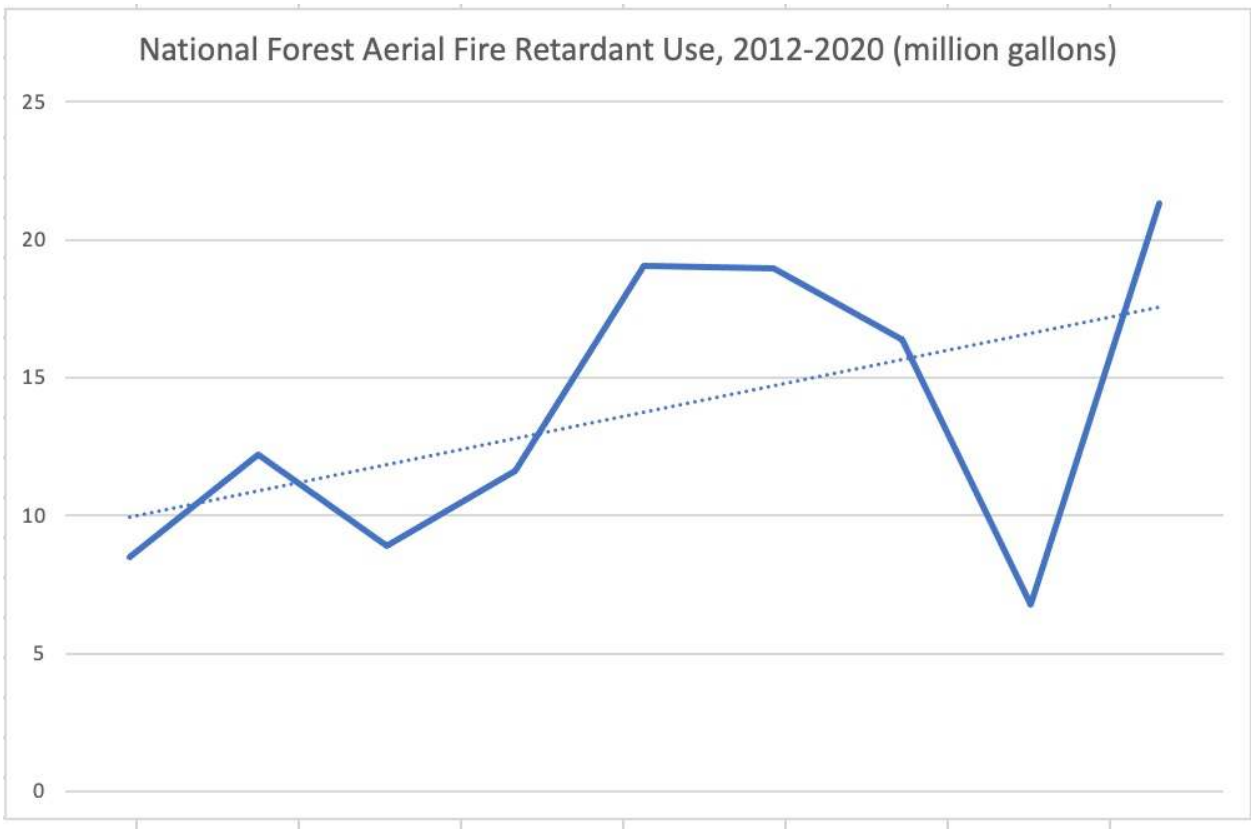
2) Is retardant effective in accomplishing extended attack objectives? The DSEIS does not say.

Without answers to these questions, the Forest Service cannot make a reasoned choice between the "no action" alternative and the action alternatives when it comes to using aerial fire retardant during extended attack.

It is not sufficient for the Forest Service to say, "we've decided to continue using fire retardant so that firefighters have another tool in their toolkit." If the tool is blunt, doesn't work, or is more dangerous than its effectiveness warrants, then it is irrational to continue its use. The Forest Service's failures to comply with NEPA and CEQ rules prevent the reasoned decision-making that would protect firefighter lives and the environment by limiting retardant use to circumstances in which it has been shown to be effective and safe.

B. The Clean Water Act requires the Forest Service obtain a NPDES permit to dump fire retardant from an aircraft into a navigable waterway.

"The Clean Water Act, 33 U.S.C. §§ 1251-1387, requires that government agencies obtain an NPDES permit before discharging pollutants from any 'point source' into navigable waters of the United States." *League of Wilderness Defenders/Blue Mts. Biodiversity Project v. Forsgren*, 309 F.3d 1181, 1183 (9th Cir. 2002). Fire retardant is a pollutant. Aircraft are point sources. Through misapplications and the allowance for dumping into waterways to protect human life or public safety, the Forest Service proposes to continue discharging retardant pollution into navigable waters. The draft SEIS reports 248 retardant discharges into waterways during the past ten years; some were misapplications while others were exceptions. Retardant use is increasing, too, suggesting that more retardant will be discharged to navigable waters in the future:



The Forest Service's "may affect" determination for 57 aquatic T&E species and its "likely to adversely affect" finding for an additional 32 aquatic species are further acknowledgements that the Forest Service discharges retardant pollution into waterways. The Forest Service has failed to apply for or obtain a NPDES permit for its aerial application of fire retardant, in violation of the Clean Water Act.

The Forest Service asserts that a letter from EPA excuses its failure to obtain a NPDES permit. *See* Fire Retardant FEIS at 76 (citing "EPA letter from Susan Bromm"). However, the factual basis for the letter -- "operators [] are not discharging into waters of the US" -- is simply not true. *See* EPA letter of June 30, 2011 (in the project record). As discussed above, the Forest Service acknowledges hundreds of retardant discharges into waterways from misapplications and allowable exceptions. In addition, an EPA opinion cannot amend the Clean Water Act, which requires a NPDES permit for the discharge of fire retardant from aircraft into waterways.

In sum, the Forest Service's on-going and proposed discharges of retardant pollutants into waterways from aircraft point sources is continuous, on-going, and unpermitted, in violation of the Clean Water Act.

Sincerely,

Andy Stahl
Executive Director