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projectmail

From: James Johnston [james@fseee.org]
Sent: Friday, August 25, 2006 12:10 PM
To: fireas; fireea
Subject: FSEEE scoping comments

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Please find attached scoping comments from Forest Service Employees for Environmental Ethics on the national EA for aerial application of chemical fire retardants. Please respond and let me know you received these comments.

Thanks,

James
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James Johnston, Policy Analyst
Forest Service Employees for Environmental Ethics P.O. Box 11615 Eugene, OR 97440
(541) 484-2692, 484-3004(FAX)
http://www.fseee.org

FSEEE Forest Service Employees for Environmental Ethics

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TO: USDA Forest Service
c/o fireas@contentanalysisgroup.com, fireea@contentanalysisgroup.com[1]
Fax: 801-397-2601

FROM: James Johnston, Forest Service Employees for Environmental Ethics (FSEEE)

SUBJECT: FSEEE scoping comments on the national EA on aerial application of chemical fire retardants

Dear Forest Service and Content Analysis Group:

Please accept the following scoping comments from FSEEE concerning the national EA on aerial application of chemical fire retardants noticed in the Federal Register on July 28, 2006 (71 Fed Reg 42797). FSEEE is made up of thousands of concerned citizens, present, former, and retired Forest Service employees, other government resource managers, and activists working to change the Forest Service's basic land management philosophy. Our mission is to forge a socially responsible value system for the Forest Service based on a land ethic that ensures ecologically and economically sustainable resource management.

Before making specific comments, we first note that the Forest Service is required under NEPA to provide the public with an opportunity to provide comments and input on the proposed environmental assessment before making its final decision. See Sierra Nevada Forest Protection Campaign v. Weingardt, 376 F.Supp.2d 984 (E.D. Cal. 2005); Citizens for Better Forestry v. U.S. Dept. of Ag., 341 F.3d 961 (9th Cir. 2003).

I. Alternatives

The use of aerial retardants to suppress wildfire has important social, economic and ecological implications for the management of national forests. The public and decision makers can only be fully informed about this important issue if the Forest Service compares a comprehensive range of alternatives, as required by the National Environmental Policy Act ("NEPA").

These alternatives should include (but not be limited to):

- Aggressive and unrestricted application of aerial retardant.
- Continued application of retardant under the Guidelines for Aerial Application of Fire Retardant and Foams in Aquatic Environments (April 20, 2000).
- Application of retardant under more restrictive guidelines that would, for instance, prohibit application of retardant a quarter mile from all mapped waterways, in wilderness and wilderness study areas, in other withdraw land allocations, etc

[1] The federal register notice instructs us to send to fireas@contentanalysisgroup.com. This email bounced. We assume that fireea@contentanalysisgroup.com is the intended address. If not, our comments should not be excluded from the record—the mistaken address is not our error.

- Development of new, less toxic aerial retardants.
- Using only water as an aerial retardant.[2]
- Discontinuing use of aerial retardant.

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II. Aquatic Environment

The environmental analysis of aerial application of fire retardants must fully disclose the direct, indirect, and cumulative effects of retardant on the aquatic environment.

Removing sodium ferrocyanide from fire retardant solution diminishes but does not significantly reduce the threat to fish and other wildlife. Scientific research summarized for managers on line (http://www.npwrc.usgs.gov/resource/habitat/fireweb/manage.htm) notes that the "primary toxicant in fire-retardants is the ammonia component." Introduction of this and other substances into aquatic systems can cause significant, if not catastrophic, impacts to local populations, particularly if the population is already threatened or endangered.

Although the effects of sodium ferrocyanide when degraded into amenable cyanide by sunlight are fast acting and dramatic, ammonia compounds may take two or three years to move through groundwater to streams in concentrations high enough to kill fish. Research also indicates that the persistence of fire retardant and the environmental impacts that result from application vary widely depending on soil type (Finger 1997). Since the Forest Service can't predict where retardant will be applied, and since environmental impacts may be masked for years, the environmental analysis must disclose a wide range of possible impacts to aquatic systems.

III. Vegetation

Application of aerial retardant can dramatically alter vegetation patterns, resulting in changes in growth and species diversity. Application of retardant can lead to a pronounced fertilization effect that increases herbaceous biomass (potentially setting the stage for future fire), but depressing species diversity. Fertilization effects also provide a competitive advantage to exotic grasses and other vegetation, which can threaten rare, threatened and endangered species (Avery 2001). The environmental analysis of fire retardant must disclose the full range of impacts to vegetation, and the cumulative effects of biomass accumulation, spread of exotics, and associated impacts to wildlife.

IV. Terrestrial Amphibians

The Forest Service's documentation of the environmental impacts of fire retardant has so far been confined to cases where retardant is applied to waterways. The Forest Service assumes that strict adherence to the 2000 Guidelines for Aerial Delivery of Retardant or Foam near Waterways will protect natural resources, except in case of accidents. However, there is likely to be profound environmental impacts from widespread application of retardants in upland areas that should be disclosed, as well as significant gaps in knowledge that need to be identified.

Depending on the time of year, forest amphibians can be found in woody debris some distance from water sources, or in shallow ephemeral ponds that are rarely mapped or identifiable from

[2] Water is more widely available, cleaner, and cheaper than retardant. It is a highly effective fire suppressant—it takes 540 calories of heat to turn one gram of liquid water into water vapor (see www.daphne.palomar.edu/jthorngren/latent.htm).

the air. In these aqueous environments, highly toxic (NH_3) ammonia can easily be absorbed through the membranes of amphibians (Hecnar 1995).

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Studies show that accumulation of ammonia in a wide range of amphibian populations lowers reproductive success and ultimately reduces population viability (de Solla et al., 2002 and Sparling et al., 2000). Fire retardant chemicals also have the potential to impact upland amphibians through bioaccumulation. For instance, studies show that byproducts from fire retardant foams have been detected in toads that consume crickets that were exposed to fire retardant (Hale et al., 2002).

V. Economics

The National Forest Management Act requires thorough and sophisticated documentation of benefits and costs of Forest Service actions. Research into the rapidly escalating costs of fire suppression have identified aerial retardant delivery as a major reason for increased federal expenditures on wildfire suppression (Canton-Thompson et al., 2006). The Forest Service should disclose the high economic penalty imposed on taxpayers by the continued use of aerial retardant.

There are significant indirect costs that also need to be considered in the context of this environmental analysis. Continued use of retardant guarantees that there will be future accidents that kill fish. These costs are not speculative and should be disclosed. Perhaps more importantly, aerial retardant—by stimulating plant growth and aiding in the accumulation of fuels by suppressing fire—contributes to future fire, which has a quantifiable economic cost that should be disclosed to the public.

VI. Pathogens and disease

The Forest Service environmental analysis should disclose how use of retardant spreads pathogens and disease. During suppression of the Biscuit Fire in Oregon in 2002, for instance, water contaminated with Port Orford Cedar disease was likely dropped on fireline, potentially spreading the disease and causing significant environmental damage (Northern Rockies Type One Interagency Incident Management Team 2002).

VII. Cultural Resources

There is dramatic evidence of the impact of fire retardant on important cultural resources available on-line at: http://www.blm.gov/heritage/powerpoint/Fire_Corbeil/Impacts%20to%20Historic%20Resources_2_files/frame.htm. The environmental analysis should fully disclose the fact that much priceless American heritage will be similarly defaced or destroyed by application of fire retardant.

VIII. Fire Retardant Guidelines

In 2000, the Forest Service published "Guidelines for Aerial Delivery of Retardant or Foam Near Waterways" to govern the future use of fire suppression chemicals.

The Guidelines prohibit application of retardants within 300 feet of waterways, which "is presumed to avoid adverse effects to aquatic species." If the environmental analysis also relies on this assumption in judging environmental impacts, then the analysis should disclose the research (if any) the Guidelines rely on for this position. Given the huge variation in terrain,

vegetation, soils and the corresponding variation in stream delivery mechanisms, it is hard to believe that this one-size-fits-all adequately protects natural resources. Research indicates that stream buffers anywhere from 12 to 860 feet are necessary to adequately protect water quality from pollution depending on site-specific geomorphic characteristics (Castelle et al., 1992).

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IX. Endangered Species Act

Application of fire retardant risks serious impacts to threatened and endangered species that reside throughout the national forest system, especially fish species, but also birds and amphibians.[3] The Forest Service is required by the Endangered Species Act (ESA) to prepare a biological assessment of the effects of the use of chemical fire retardant on these species. 16 U.S.C. § 1536(c). The Forest Service is also required by the ESA to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service about the effects of fire retardant use on threatened and endangered species, and their critical habitat. 16 U.S.C. § 1536(a)(2); 50 CFR § 402.10 *et seq*.

X. Clean Water Act

The United States Court of Appeals for the Ninth Circuit made clear in League of Wilderness Defenders v. Forsgren, 309 F.3d 1181 (9th Cir. 2002), that the discharge of chemicals from Forest Service aircraft is a point source of pollution and requires a National Pollutant Discharge Elimination System (NPDES) permit pursuant to the Clean Water Act. See 33 U.S.C. § 1342. The environmental analysis must disclose how the Forest Service plans to comply with the Clean Water Act.

Individual states may have additional requirements as to the discharge of chemicals, and the Forest Service should clearly state how the agency will meet these requirements. See 33 U.S.C. § 1323 (federal agencies must comply with all Federal, state, and local requirements concerning the control and abatement of water pollution). For instance, Oregon regulations at OAR 340-41-026(1)(a) require that: "In no event... may degradation of water quality interfere with or become injurious to the beneficial uses of water within surface waters of the following areas:... National Wild and Scenic Rivers." It is almost certain that at some point the Forest Service will intentionally or unintentionally introduce fire retardant into an Oregon Wild and Scenic River. The analysis should disclose how the Forest Service plans to comply with Oregon and other applicable state water quality regulations.

XI. Wild and Scenic Rivers Act

The Forest Service must evaluate the use of fire retardant for compliance with the Wild and Scenic River Act (16 USC 1271). The courts have in the past declared illegal Forest Service actions that carry a significant likelihood of adversely affecting Wild and Scenic Rivers. See Wilderness Society v. Tyrrel, 701 F Supp (1989).

XII. Connected, Cumulative, and Similar Actions

Application of retardant does not happen in a vacuum. As described in 1995 Federal Wildland

[3] Including, but not limited to *Haliaeetus leucocephalus, Eleutherodactylus jasperi, Rana aurora draytonii, Rana chiricahuensis, Rana capito sevosa, Rana muscosa, Eleutherodactylus cooki, Eurycea sosorum, Ambystoma californiense, Plethodon nettingi, Batrachoseps aridus, Ambystoma cingulatum, Phaeognathus hubrichti, Eurycea nana, Ambystoma macrodactylum croceum, Plethodon Shenandoah, Ambystoma tigrinum stebbinsi, Typhlomolge rathbuni, Bufo californicus, Bufo houstonensis, Bufo baxteri.*

Fire Management Policy, a wide range of tactical and logistical measures are fully integrated as part of incident management. Incident command functions are in turn tightly integrated into a national command structure.

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NEPA requires actions to be considered in the same NEPA document when they are "connected actions" (defined in part as interdependent parts of a larger action and depend on the larger action for their justification); "cumulative actions" (which when viewed with other proposed actions have cumulatively significant impacts); or "similar actions" (which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography). 40 CFR §1508.25(a).

Application of fire retardant is clearly a "connected," "cumulative" and "similar" action with respect to other fire fighting activities, including, but not limited to:

- Construction of fire line[4]
- Construction of helispots, safety zones, water chances and other clearing, depressions, catchments, etc.
- Back burn and burn out operations

These and other suppression activities must all be considered and disclosed in the Forest Service's NEPA analysis of fire retardant use.

XIII. Cumulative Effects

NEPA defines "cumulative impact" as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions." 40 CFR §1508.7. Cumulative impacts "can result from individually minor but collectively significant actions taking place over a period of time." Id.

There are a number of cumulative impacts that stem from the use fire retardant, not the least of which is the suppression of fires, which leads to continued fuel build up and increasingly severe fire. Environmental analysis of fire retardant use should thoroughly document the role that retardant use plays in disrupting fire cycles.

Additional cumulative effects include those discussed above (construction of fire line, construction of helispots and safety zones, burnout operations, etc.).

Other cumulative impacts are uncertain, and the environmental analysis should disclose gaps in knowledge. For instance, many retardant solutions contain components intended to persist in the environment after the aqueous component has evaporated. The environmental effects of the remaining components are poorly understood (Calfee and Little 2003).

XIV. Environmental Impact Statement

As noted above, the Forest Service insists on the use of aerial retardant because it is an effective tool in fighting wildfire. From a fiscal and ecological standpoint, wildfire suppression is among the most damaging management activities the agency undertakes. The Forest Service admits, for

[4] As acknowledged by the Forest Service in the litigation that led to the development of this EA, "the purpose of chemical fire retardant is to slow the fire down in order to give ground support forces the opportunity to build firelines." Cmplt., ¶ 20; Answ., ¶ 20.

instance, that the agency's use of fire retardant has in the past resulted in massive fish kills. Put simply: This issue is too large, complex and important to be evaluated in an environmental assessment. In order to comply with NEPA, a comprehensive Environmental Impact Statement (EIS) must be prepared.

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The Code of Federal Regulations instructs the Forest Service to consider whether impacts are significant using a number of context and intensity factors (40 CFR 1508.27). These factors are discussed below:

1) Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on the balance the effects will be beneficial.

The Forest Service may argue that impacts to streams from application of fire retardant are significantly less than the impact to streams from ineffectively suppressed wildfire. Even if true, which is doubtful, this claim would be irrelevant. Federal regulations clearly instruct the Forest Service to weigh significant impacts separately in an EIS, not balance significant impacts outside of the NEPA record and present those conclusions in an EA.

2) The degree to which the proposed action affects public health or safety.

Wildfire policy generally and use of retardant specifically has profound implications for public safety. Because fire fighters are often on the ground in the area where retardant is dropped from aircraft, there are also public health concerns.

3) Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

Retardant will almost certainly be used in proximity to cultural resources, wetlands, wild and scenic rivers and other ecologically critical areas. In the past, aerial retardant has been applied in unique areas such as:

- Waldo Lake, a large ultra-oligotrophic lake in the Oregon Cascades that scientists believe has the purest water in the world.
- Archaeologically significant pueblo dwellings and pottery remains at Mesa Verde National Park.
- In Murderers Creek in the South Fork John Day River system, one of the most significant refuges for endangered steelhead in the Columbia Basin (more than 23,000 fish were killed).
- Near Old Faithful and other geysers in Yellowstone National Park.

4) The degree to which the effects on the quality of the human environment are likely to be highly controversial.

This factor does not necessarily speak to public controversy (although fire fighting is highly visible and changes to policy are likely to spark considerable public interest), but instead is concerned with scientific controversy or uncertainty. As noted above, there is considerable uncertainty as to the long-term effects of fire retardant. It is worth noting that one manufacturer of fire retardant, Fire-Trol Holdings, LLC, has sued the Forest Service alleging in part that there is scientific uncertainty about the effects of some ingredients in retardant material.

5) The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

As noted above, there are considerable uncertainties and unknown risks inherent with the continued use of fire retardant.

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6) The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

An agency decision following the environmental analysis of fire retardant will have enormous environmental effects and set important precedent throughout the national forest system about how the agency fights fires, and may also impact the use of retardant by other state and federal agencies.

7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.

As noted above, the application of fire retardant is inextricably linked with other significant agency actions.

8) The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in the National Register of Historic Places or may cause loss or destruction of significant cultural or historical resources.

Use of fire retardant to protect important infrastructure and historic structures is commonplace and has important implications for those structures and facilities.

9) The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act.

As noted above, the use of fire retardant poses significant risks to endangered, threatened and sensitive species.

10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

As noted above, the use of fire retardant threatens violation of a number of federal, state and local laws, including but not limited to the Endangered Species Act, the Clean Water Act, Oregon's water quality regulations and the Wild and Scenic Rivers Act.

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