Feather River Action!
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November 6th, 2023

Plumas National Forest
Attn: Christopher Carlton
Forest Supervisor, 159 Lawrence Street
Quincy, California 95971

Re: Community Protection – Eastside

Dear Forest Supervisor Carlton,

Feather River Action! (FRA!) is a grassroots public interest alliance based in Portola, California within the project area. FRA! monitors, publicizes, and defends against threats to the Feather River watershed including forest mismanagement, harmful wildlife policies and pollution and development threats, and we work on building community and consensus on issues that impact the river. Please visit FeatherRiverAction.org for more information.

FRA! not only questions many of the specifics included in the environmental review, in light of the scientific research we have presented, we also question the basic underlying assumptions that inform USFS management decisions. These incorrect assumptions and failures include:

— **a failure to acknowledge growing evidence of cooperation among forest community members** including trees, plants, animals, fungi and insects. There is competition for sure, but there is also cooperation and this is nearly totally denied by the USFS.

— **a failure to acknowledge and properly assess the many factors that contribute to wildfire behavior** including (most glaringly) moisture levels, rate of drying, and wind speeds. A singleminded focus on fuels is not only incomplete, it is putting communities at risk by failing to consider and analyze all relevant factors

— **a failure to acknowledge the crucial ecological role that mixed intensity (including high intensity) wildfires play** including rejuvenation of soils, creation of snag habitat critical for northern spotted owl, black backed woodpecker, and many other species. While blackened and burned forest may appear “destroyed” — the reality is

that forests recover rapidly from fire, often returning more vigorous than they were before the fire. What really hurts post-fire landscapes is salvage logging.

— **a failure to acknowledge or even consider the evidence that suggests that nothing done outside 100 ft. from structures has any impact whatsoever on structure survival.** When asked about how much of each project would be carried out in this critical defensible space zone, Forest Fuels and Prescribed Fire Program Manager Ryan Bauer replied that, *"That information was not part of our analysis."* This omission shows that "community protection" is simply a marketing label and not a bona fide goal of the Forest Service.

— **a failure to adequately consult the public on projects that directly interface with local communities.** Rather than curtail opportunities for public involvement (eg. failing to hold even one Q&A/ public meeting despite multiple requests, eliminating or cutting short the objection process, declining to meet with stakeholders in the field, etc, due to this project's unprecedented size, proximity to communities, and high stakes of land management on wildfire threats to communities, the USFS should have properly *expanded* public consultation opportunities. The decision to essentially cut the public out of decisions that dramatically impact public land will only generate ill will toward your agency and pour fuel on the fire of those who are calling for the USFS to be removed from its land management responsibilities.

— **a failure to consider and properly incorporate any science that calls into question the current priority of resource extraction** on public lands, even going as far as to call such evidence "misinformation." There exists an "intellectual inbreeding" among forestry academics, USFS employees and consultants, and some local non-profits and an "echo chamber" of outdated pseudo-science that is putting our climate, forests and communities at risk.

— **a failure to consider the laughable and quite ridiculous notion** that the forest, which has evolved and survived over millions of years including volcanic eruptions, asteroid and comet impacts, dramatic climate changes even more severe than the human- caused one underway, requires humans, mechanical equipment and herbicides to help it thrive when every shred of evidence indicates that natural regeneration and recovery is more than ample to return habitats to the condition they were in before the introduction of interventions that damaged them and that you would now have us believe will also "restore" them.

— **a failure to consider natural succession in ecological habitats**, a rigid view of nature as a static force that is incapable of adaptation, lacking intelligence.

— **a failure to present accurate and complete existing conditions**, either through descriptions or photographs, regarding habitat quality, biodiversity etc. so as to provide a baseline to the public and officials that would inform what is appropriate in a particular area.

— **a failure to present any information at all about non-threatened, non-endangered species**. This absence, combined with an obsessive (compulsive?) focus on timber extraction, leads the public to believe that the USFS does not truly care about habitat quality, or other factors impacting ALL residents of the forest which are just as important and should be offered the same respect as human residents of the forest.

— **a failure to make informed and intelligent decisions about land management** in light of:

— **the consistent struggle to survive "forest thinning" projects** by dense forest dwellers, whose habitat is dwindling because of projects like these.

— **the rapidly intensifying climate emergency**: making decisions that undermine forest resilience and survival of drought conditions.

— **the growing recognition of the inappropriateness and arrogance of industrialized "forest engineering" projects**, inflicting a heavy handed mechanical and chemical approach onto delicate forest ecosystems.

— **the ongoing and worsening extinction crisis** and collapse of wild food chains, caused by logging and disruption of forest ecology.

— **a failure to be honest about true agency motivations:** wouldn't it be refreshing if the USFS presented a new project and said, "yes we want to log in sensitive habitats and this will cause harm to the forest, but this is why we believe it is justified", rather than coming up with some mealy-mouthed, deceptive purposes like oh we want to "restore the forest" or "preserve the aspens" or "protect communities." ***How stupid do you think we are?***

This is not your forest. This is not your land. This is not your money to do with as you wish, neglecting public input. Cease and desist your destructive activities that put local communities at risk. Re-allocate the money to go to community hardening now, or have blood on your hands when the next wildfire burns through dried out forests and destroys lives and property.

We pledge to take personal action, and encourage others to also take personal action to stop the Community Destruction Project in Plumas National Forest.

Because of these failures, we demand that the US Forest Service either:

— **commit to deep and long lasting reform**, led by a public process, that will honestly consider climate resilience and mitigation potential, wildlife habitat value, recreational and local economic value on the same or higher priority than logging and resource extraction.

— **step down and surrender your authority for land management** as your agency is no longer fit for purpose.

Particularly given recent findings that the Dixie Fire and other recent intense western wildfires have been predominantly caused by climate change, the Community Protection Project should be a *Climate* Protection Project, focusing on avoiding emissions and allowing the forest (which is the most viable and scalable alternative humanity has for carbon sequestration) to return to pre-settlement levels of carbon storage which — currently far below their potential.

Unfortunately the "Community Protection – Eastside" project as described in the EA and in concert with other similar large logging projects in the area would pose cumulative serious risks to global climate and habitat needed by at-risk species, and (ironically) community fire safety. These cumulative impacts are not adequately addressed in the EA.

As residents of Eastern Plumas County Community, we are neighbors of land managed by the Forest Service. After reading the EA, I am personally fearful for the safety of our local communities in a future where projects like this one further exacerbate the climate crisis by increasing emissions and diminishing sinks (exactly the opposite of the direction we need to go), and along with forest management techniques that are associated with canopy opening and ensuing hotter, drier, and windier conditions, raise wildfire risks to communities rather than lowering them, meanwhile providing a false sense of security to the public about the "community protection" the Forest Service is providing.

An EIS is clearly required here, to study in greater depth issues that have been raised in the EA but not properly studied. Also the lack of any proper analysis on the impacts of the proposed amendment on Spotted Owl populations should preclude any forest plan amendment that would impact them. This is particularly timely and pressing as the US Fish and Wildlife Service proposed to list two population segments under the Endangered Species Act of 1973.

The "Community Protection Project" (CPP) does not fulfill its stated aims of reducing fire risk. **This project is, by its nature, close to communities. Because of that, as well as the unprecedented size and scope of the project (*e-mail communication from Forest Service Forest Fuels Program Manager Ryan Bauer*) cumulative impacts from mechanical and chemical operations would likely be greater than other projects that may be further away from communities.** The relatively unscathed nature in the area is a boon to wildlife, recreation, and a major generator of local and regional tourism. These are some of many reasons why an underburn/ handthin/ community defense alternative is needed, due to the cost savings and vastly greater likelihood that these values and resources will be protected under such an alternative. **People don't find damaged, abused landscapes appealing and they will go elsewhere to spend their money if you allow the Feather River watershed to be damaged by this project.**

This landscape— particularly mature forest areas of the project area— is home to a great deal of fixed carbon on the landscape, and the potential for the forest to increase that amount is significant[1].

The Forest Service has an obligation to use the latest science to determine how to absolutely maximize carbon sequestration on the landscape given the spiraling climate emergency, and this has not been done. Forest preservation is the most practical (and only scalable) way to draw excess hazardous carbon out of the atmosphere and provide a chance to keep planetary warming below 1.5 (or even now 2) degrees C.[2]

Luckily policies to maximize carbon storage in forests are the same that are needed to protect vulnerable wild species, enhance water storage on the landscape, improve forest resilience, and enhance recreational opportunities. Unfortunately that is not the plan described in the Community Protection – Eastside Environmental Assessment.

In reviewing the plans, we found a number of inconsistencies and gaps in the data. We are alarmed that the Community Protection Project as a whole is being rushed through without adequate review and request an EIS be prepared with a cumulative analysis and proper public consultation period including public meetings in the towns affected by the proposed project.

Specifically we cite the far larger-than-best-practices recommended[3] opening-creation, canopy reduction, and the biological need to retain old growth trees and snags of all species in the forest to meet carbon retention commitments.[4]

The density targets are based on incorrect or doubtful information on historical density. More recent evidence suggests that rather than being all “open and parklike” historical forests were comparable to the density of today’s forests.[5]

We demand that an Environmental Impact Statement be prepared, and a full analysis of a new hand thin/ under burn only alternative be analyzed (as requested by at least two organizations’ comments during the scoping period: Feather River Action! and Plumas Forest Project) and properly analyze the cumulative wildlife, recreation, carbon sequestration future scenarios, loss of medium/ large- large trees on the landscape, loss of biomass and particularly the dramatic increases in wind, solar exposure, and drying of forestlands adjacent to communities that have only been analyzed indirectly at best in the Environmental Assessment.

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[1] Campbell et al, 2012; Law et al, 2018

[2] Campbell et al, 2012; Law et al, 2018

[3] Franklin et al, 2013

[4] DellaSala and Hanson, 2015

[5] (Baker, 2014, Baker et al 2018, Williams and Baker, 2012)

We outline a number of public process issues: a lack of public meetings on a project as large as this that includes a proposed major forest plan amendment, inconsistencies in purpose and need on the public announcement vs. the environmental assessment, a lack of proper consideration of alternatives suggested during the scoping as required under NEPA, lack of considerations or analysis on cumulative impacts to spotted owl, rare frogs, and other species from proposed forest plan amendment and future projects undertaken with artificially reduced canopies (based on underestimates of historic densities) under these guidelines.

Until a different alternative is provided (such as one that includes the use of Native American supported prescribed fire, hand-thinning small high density trees around communities, support for evacuation planning, community hardening, and other critically needed measures that our group has been asking for for years) **we strongly SUPPORT the "no action" alternative at this time.**

Thank you for your time, attention and thorough response to these comments.

<electronically signed Mon. November 6th 2023> <Josh Hart>

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The “Crocker Grove” north of Portola, which was part of the Mapes Project, was marked for that project and is now included in the CPP Project. Existing conditions — apart from needing a light underburn every now and then, are perfect and are relatively fire resistant : shady, cool under the canopy, moist, with a diversity of tree ages and species and well established shrub habitat. The CPP as it is currently written would obliterate these conditions (destroying small trees, habitat, midsize trees and shrub habitat) and create a tree farm (see R. Tompkins provided photo as an example of post mechanical thinning “ideal” below)

This is not a forest but a collection of similar sized and aged trees, with no shrubs, young trees, or much tree diversity to provide habitat. Most of the surface is exposed to high intensity sun and wind exposure. A kindling factory.

Specific Comments on Eastside Community Protection Eastside Project

P. 3: “Forests are challenged by… “overly dense stands….and elevated insect populations.” This is based on what baseline? Insect populations— which are critical to the food chain and ecological health— are in steep decline worldwide, in part because of industrial logging like the plan proposed in the Eastside EA.

p. 3: desired conditions of 14-36% rSDI are significantly below what is recommended in Franklin et al. a USFS publication outlining best practices for eastside pine habitats. Why the departure from best practices?

p. 3: “…more resilient to disturbance……promote variability in vegetation structure” Does this mean shrubs? What role do shrubs (which prevent erosion, and provide critical habitat and food) play in USFS’ “desired conditions?”

p. 3: You refer to North et al (2022) to justify low densities in forests as a “desired condition. Many researchers have challenged the assumptions in this paper. What other research exists to support the notion of ultra-low densities in Sierra forests?

p. 7: “removal of conifers over 24 inches dbh would be reviewed on a site by site basis.” This leaves the public with little understanding of how many conifers in aspen groves would be removed, eliminates any size limit, and allows decisions to be made in the field, and not reviewed by the public. Aspens and conifers have co-existed for millions of years and share resources. Aspens in conifer treated areas near Lake Davis have not done well after conifer removal, indicating a shared mycelial resource base. How many conifers would be affected and in what areas would this occur? The EA leaves us guessing.

“Meadow Extended Treatment zones would occur from existing meadow edges and extend up to 150 ft. into forested stands…”

Again, no upper limit for conifer dbh is provided, meaning lumber companies could take the oldest trees that provide key habitat along the valuable meadow/ forest edge. This is not okay.

p. 10: Has the forest service done an analysis on the dioxin emissions and contamination caused by widespread use of ‘plastic sphere dispensers’?

Why is the FS felling dead and dying trees caused by the Dixie Fire when these are critical habitat and much needed by impacted species?

p. 11: Why is the USFS spraying herbicide to kill native shrubs, which want to come back and are helping the land recover as part of natural succession, unless you are converting public lands to essentially private tree farms? What role does the USFS see for shrubs in forested areas? Any?

p. 12: Is there any plan to remove trash and dumped and discarded vehicles and appliances, or to restrict illegal vehicle access using boulders and gates as part of these heavily funded projects?

p. 14: we condemn the construction of new roads and mechanical treatments in semi-primitive areas and SIA's

p. 16-17 The GHG estimates are not backed by peer-reviewed science and fail to include direct emissions from dying plants and trees, vehicles, and compacted and damaged soils. Using "offset methodology" to pretend that biomass destined fuels would "offset" emissions from fossil fuels has been discredited and cannot be relied upon.

p. 18 "In the event of a wildfire…" This statement neglects to consider that wildfire on landscapes is inevitable, and part of the natural ecological cycles.

p. 21: "thinning may also improve growing conditions for shrub species…" So, native shrubs will be poisoned by herbicides as illicit competitors to tree species, or they will be regenerated by thinning? Which is it? How is the public meant to determine what the outcome of these treatments will be if conflicting and contradictory statements are made in the EA?

p. 22 why is wooly mullein an "undesirable plant species"? It is a source of medicine, habitat and food for pollinators and helps break up compacted soil caused by damaging activities you authorize on public lands? If Wooly Mullein were a person, you would put them on the payroll.

p. 23: "The proposed project is predicted to result in a moderate to high risk of invasive plant introduction and spread." Then, why is the project happening at all? Especially considering the flammable nature of European grasses that have displaced native perennial plants that resist fire, is this really community protection or is it timber company profit protection?

p. 25-26: Logging cost and revenue estimates such as these were not provided as part of the Central and West Slope project. Please provide.

p. 27: Fire and Fuels section: It's really fascinating your analysis of flame lengths, torching index, etc. but this is meaningless, disconnected information, because it does not include analysis of wind speeds, evaporation or moisture impacts of proposed activities.

p. 28: "flame lengths would be reduced under 98th percentile weather conditions…" It is the other two percentiles that are of concern to these communities and this is when extreme wildfire behavior is present. Where is this analysis? Your EA is incomplete without it.

p. 28-29: 14% rSDI is significantly below best practices densities recommended in Franklin. What explains this disparity? Please provide evidence that communities are safer with this extreme logging prescription.

p. 31: “Following thinning and prescribed burning, all fires would burn as surface fires.” What evidence do you rely on to justify your certainty?

“Eastside project would be successful at reducing the size and severity of wildfires.” Given that historical fire ranged from mild to intense, and covered more area more frequently, why is this considered a positive thing?

p. 35 No Action- again the issue of moisture and wind speeds are ignored here. With the no action alternative, wind speeds would likely decrease when blocked by forest canopy and moisture would likely increase due to increased shading and windbreaks. Why is this ignored?

p. 36: Again no mention of structure hardening or community defensible space, proven actions that save lives and homes (but do not generate profit for the timber industry).

p. 38; Given that cumulative impacts indicate that 3 of the nine analysis watersheds are above the threshold of concern and “warrant further consideration”— shouldn’t an EIS be prepared to further investigate and prevent erosion that would damage entire watersheds through possibly 2027 including those relied on by millions of Californians for drinking water?

p. 40: Speculation that improved roads and more open views would bring more visitors to the area must be counterbalanced by consideration that landscapes marred by heavy vehicles may discourage many others from visiting, particularly those seeking out unspoiled areas for backcountry recreation.

You claim that planned treatments would improve aspen and meadow habitats, yet your proposed treatments plan to cut down rich edge habitats that are known for being crucial to wildlife of many species. We don’t buy it.

p. 42: Does the USFS believe that forests are more capable of adaptations to survive climate changes or the logging industry?

p. 47- again we see the FS incorrect assumption that wildfire is bad for ecology, when all the evidence suggests the opposite.

p. 49- “Replanting burned areas would lessen the likelihood of their conversion to non-forest vegetative cover types…” What is wrong with natural succession? Is the FS aiming to hijack natural succession, poisoning and mechanically brutalizing plants and shrubs in order to promote economically valuable timber on public lands? Is that what’s happening?

“Some areas within the defense zone would be ….maintained in shrub or grassland.” Is the USFS aware that grasslands are particularly hazardous to firefighters even more so than forests?

p. 50: “….the eastside project would create a landscape….” Is it the USFS’s remit to “create landscapes?”

p/ 53: Again we see the bias against fire coming through— though the area of the proposed SIA has experienced extreme fires many thousands of times throughout history, and has recovered, human bias creeps in here and only considers human viewpoints and human timescales.

“The proposed SIA would remain a blackened landscape..” This misinformation flies in the face of experience that high intensity wildfire burned areas quickly recover. What is wrong with previously forested areas converting to brush fields? Did you think that burning the fossil fuels and deforesting the land that that would have no impact?

p. 54: Contradictions galore! Evidence of former vegetation management treatments are referred to as damaging the natural feel of the place while new vegetation management treatments are proffered as the solution! We screwed things up by fire suppression and logging and now we’ll fix it by….more fire suppression and more logging!!

p. 55 the EA makes the argument that proposed wilderness area (which are defined as roadless areas) would not be impacted by the construction of new roads!

p. 56 Are the fuels hazardous or is it the ill-advised and short sighted decision to build communities out of wood and kindling in forests that have a less than 20 year fire return interval that is hazardous? Which is a greater hazard? Is the nearly billion dollars of funding going to the greatest need?

p. 59 Is it conifers that are the primary driver of dewatering meadows or is it the climate disruption caused by fossil fuel burning and deforestation? Please provide studies that show that cutting down conifers around meadows will save sierra wetland meadows in the long term if emissions and deforestation continue.

“Herbicide application…would reduce newly created habitat for western bumblebee in severely burned areas” (further evidence that the project is undermining natural benefits of fire)

p. 61 assumptions that logging would “likely have long term beneficial effects to frog habitat” assumes that frongs and other species have not adapted to high intensity fire, a false assumption.

p. 63: project would “result in a reduction in quantity of habitat for CA Spotted Owl currently classified as suitable for foraging and nesting. This is one of the most

endangered birds in California, and the Forest Service's best management program you can come up with is to FURTHER degrade habitat???

The EA claims that rodent populations exposed to herbicides would excrete the toxic poison more quickly than could be absorbed by an owl, however, what evidence shows that 10mg/kg of body weight has zero impact on this small owl population?

p. 64: Mechanical thinning would render 32% of the highest quality CA Spotted Owl nesting habitat unsuitable for nesting. Again, shouldn't management activities be INCREASING nesting habitat for one of our most critically threatened species?

p/ 66: shouldn't motorized vehicles which cause lasting damage to wetland meadows always be prohibited from meadows not just during a particular season?

p. 73: removing hazardous fuels is presented as being beneficial for health and safety, but this is contradicted by evidence from Zald and Dunn (2018)

p. 9 consultation package: "Areas around any critical habitat trees, including nesting, roosting, and high value legacy trees, may be raked." This action may inhibit the tree's climate resilience by removing natural mulch and increasing evaporation, and inhibiting positive impacts from low intensity fire.

p. 13 what exactly are the penalties for non-compliance? (under training box)

p. 20: among the most serious listed hazards to yellow legged frogs include: "pesticide exposure" "timber harvest" "habitat restoration activities" exactly what this project proposes more of? When will the USFS admit that its restoration work is generally doing more harm than good?

p. 21: If this is the case: "Wold packs appear sensitive to human disturbance near den sites and may abandon the sites.." then why would " CDFW biologists….routinely visit areas used by wolves? unless they wanted to disturb these animals?

p. 30 claims that "risk of injury to yellow legged frog is…*minimal to absent*" because they are highly aquatic….yet….

On p. 29 it states: "Juvenile and adult (yellow legged frogs) have..been observed moving through upland areas outside of riparian corridors."

Which is it? This information would seem to suggest that industrial equipment does pose a significant risk of injury to these frogs.

P. 30- you state that harm to frogs is "unlikely to occur….due to the *presumed* effectiveness of pre-implementation surveys and associated protective measures. How effective are these surveys really, given that frogs live in many hidden areas and surveys take place on very limited timeframes?

Have the dioxin impacts of burning significant amount of plastic sheeting been considered on the air and water? Why or why not?

We formally object to the use of “test fish or amphibians.” The idea that any living creature exists solely to be tested upon and exposed to toxic chemicals is sociopathic and a key indicator of a sick and human supremacist culture that is doomed to fail.

p. 33 this assumes that logging activity will create restoration of habitat for yellow legged frogs. This is an assumption not backed by evidence. Please provide evidence that logging can help yellow legged frog or similar species or spare us the unsupported assumptions.

p. 34 impacts to yellow legged frogs are “discountable” - this is not supported by the evidence. Just because biologists have not seen the frog does not mean it is not there. Project activities could well prevent a recovery of this species within the Plumas Natl. Forest. particularly if the frogs are in an upland area damaged by mechanical and toxin distributing equipment.

Public Process Issues

The public, including members of our group, have grown tired of being essentially excluded from these projects that impact our communities and watershed. During the Mapes project near Lake Davis, trees were marked prior to the public process, which made many members of the public feel as if the Forest Service is hostile to public input or believes that public input is just a hoop to jump through — particularly with regard to views that depart from their own resource focus. Now, during the CPP EA, we see the same pattern repeating itself. The 800+ pages of the Central / West Slope EA was released at the height of summer and with only a 30 day comment period provided (over the July 4th holiday) to read the entire plan and make informed comments. There have been no public meetings scheduled during this time, and no media relations efforts have apparently taken place, nor apparently local or regional media coverage. The Public Notice in plumasnews.com was entitled “Public Notice.” This is a real loss for the Forest Service as well as local communities, as people have local knowledge of the land (including wildlife, fire risks, and sensitive areas to avoid) that is essential to inform a project that is the largest in Plumas National Forest history.

Inconsistencies:

The comment period for this EA has been too brief and rushed and should be extended. An EIS needs to be prepared that contains alternatives without mechanical thinning and extreme herbicide use (handthin/ underburn only requested by Feather River Action! and Plumas Forest Project in scoping comments).

As J. Preschutti also states in his comments from Plumas Forest Project: "The EA failed to consider a handthin/underburn only alternative under "Alternatives Dismissed from Detailed Analysis" — as NEPA requires. Instead, the EA refers to a "Prescribed-fire only alternative" (page 2-29), and then dismisses it by saying that many areas would require mechanical and manual treatments before burning safely. However, in the alternative's description the EA says it uses the methods of prescribed fire and pile burning. Piles are the result of hand thinning small trees and brush and putting them in piles — that is, the manual treatments that the FS claims need to happen first. This is an oversight and a procedural error that deprives the public of the ability to assess truly different alternatives.

The "too unsafe to underburn" rationale is not apt here because to make forests safe to underburn is one of the undisputed, science-based reasons to handthin and pile ground and ladder fuels."

The FS did not properly consider the alternatives requested by at least two groups who participated in the scoping process, and, according to NEPA, this is a required step in a lawful and complete EA.

- We also asked during the Mapes/ Crocker comment period: ***"Why is there no underburn/ handthin alternative that analyzes the reduced soil and hydrological impacts of these typically less destructive methods?"***

- Throughout the EA document, descriptions were often needlessly lengthy, repetitive and clearly cut and pasted. The public deserves better for a project of this magnitude.

- There has been an accelerated timeline for the EA process that does not allow for adequate public involvement and oversight. Despite multiple requests, no public meeting has been scheduled. Fears of a large Dixie-like fire should not pre-empt a thorough public process. It should make it MORE- not LESS robust.

- As mentioned by John Preschutti and the Plumas Forest Project, it is appropriate for a project this scale to to have in-person meetings in (in this case Milford, Janesville, Doyle, and Susanville) (and also with remote access and involvement capability (ie zoom)

- Does the USFS agree with this statement? If not, why not? "Forests require stewardship, but with a light touch that recognizes that they are inherently delicate. Blunt heavy-handed techniques like bulldozers, herbicides, and chainsaws are likely to (often) do more damage due to both the intended and unintended consequences of such actions on the delicate, complex, and interdependent forest ecosystem." (O'Brien, 2023)

- Forest Service Handbook 1909.15 provides:

> The range of alternatives considered by the responsible official includes all reasonable alternatives to the proposed action that are analyzed in the document, as well as other alternatives eliminated from detailed study. Alternatives not considered in detail may include, but are not limited to, those that fail to meet the purpose and need, are technologically infeasible or illegal, or would result in unreasonable environmental harm. . . .
> **Because alternatives eliminated from detailed study are considered part of the range of alternatives, the project or case file should contain descriptions of the alternatives and the reasons for their elimination from detailed study.**

FSH 1909.15, Section 14.4.

Federal agencies must take a "hard look" at environmental effects of a project before implementation. "To take the requisite hard look, an agency **'may not rely on incorrect assumptions or data' in arriving at its conclusion of no significant impacts."** (Envtl. Def. Ctr. v. Bureau of Ocean Energy Mgmt. (9th Cir. 2022) 36 F.4th 850, 872-73, quoting Native Ecosystems Council v. U.S. Forest Serv. (9th Cir. 2005) 418 F.3d 953, 964.)

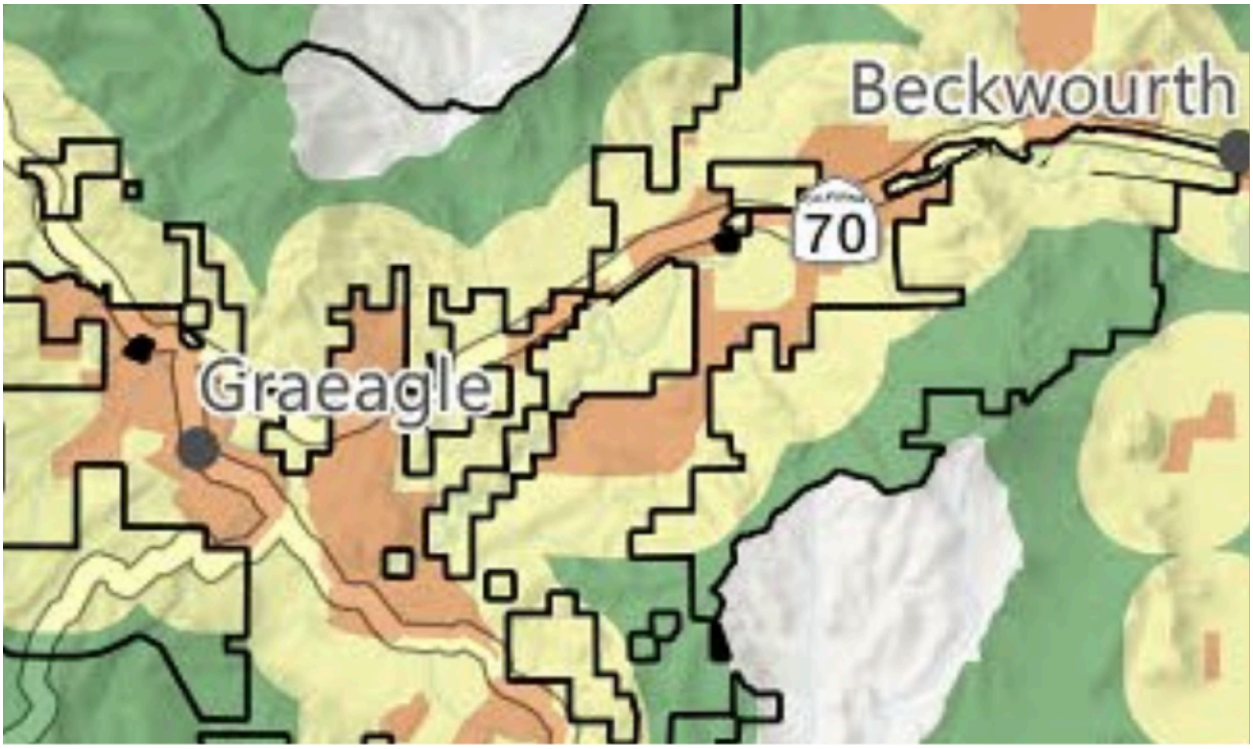
Specific to examination of alternatives, while the discussion of alternatives is less in an EA than in an EIS, an EA will be found inadequate where the existence of viable, reasonable alternatives are unexamined. (*Id.* at 876-77.) And, "**[i]n considering which alternatives to analyze, agencies must provide a 'detailed statement' regarding why they were eliminated or not considered.**" (*Id.*)

EA Biological assessment says: *"Additionally, California spotted owl (Strix occidentalis occidentalis) Sierra Nevada DPS was proposed for listing as threatened under ESA on February 23, 2023. The Forest Service will be coordinating with USFWS to develop a Regional conference and/or consultation process for this species, so California spotted owl is not evaluated further in this document or included for conference at this time."*

The Biological Assessment does not adequately evaluate impacts on the California spotted owl, which would be dramatically impacted by the mechanical logging in their home range areas.

Because Section 7 consultation and a Biological Assessment for the California spotted owl has not been done, the amendment is not supported by adequate evidence.

- We request the FS does a full EIS on the Community Project, taking into account cumulative impacts from this and similar projects planned to be expanded through the project area (Plumas News "Where I Stand" Op-Ed article by Ryan Tompkins that we **"require active forest management at much larger scales for the future"**).Given that this project is just one of many planned (in a dramatic increase in such projects in the area), an EIS is needed to explore issues that alone may not pose a significant impact but in combination could significantly undermine stated



goals of the forest plan, risk community safety, and harm plants and animals including threatened and endangered wildlife.

- In the EIS, again we request inclusion of an underburn/ handthin only alternative that includes science based carbon budgets (with both carbon emissions and sinks included) for each alternative, taking into consideration the impacts of soil compaction on carbon retention, future costs of climate warming per ton of carbon emitted, recognizing the categorical differences between fossil fuel emissions and the forest fire emissions.

- As part of the “Community Protection” project, do forest rangers who decide what trees logging companies are allowed to cut receive bonuses or incentives for the trees that are cut? If so, does this system serve the public, wildlife and the forest? How much will the FS receive from logging companies from this project and where will that money be spent?

- *“Projects implementing land management plans…must be developed considering the best available science in accordance with 219.36(a).”* Please adhere to the latest science with regard to carbon retention, wildlife, microclimate and tree resource sharing research.

- Without a cumulative effects analysis, what measures will be used to determine risk of violating NEPA with an EA based decision?

— There is no definition of WUI defense and WUI threat zones provided in the EA document, and no indication of whether there is a definition or how these were developed. Are they based on a distance from nearest homes, or property lines? Do the

planned treatment areas follow the 1/4 mile / 1 1/4 mile guidelines in the forest plan amendment throughout the project or is it extended or reduced in some places?

— The EA does not provide data about existing current canopy cover, current biomass estimates, biomass of the area estimated pre-settlement and biomass and value and quantity of lumber to be removed. How is the public supposed to write informed comments about the project if existing conditions are not presented?

— We requested in the scoping period for an alternative with just hand thinning and underburn but FS did not consider this. We also requested that wind speeds and humidity/ moisture be modeled in diff. scenarios but this was not done. These would show higher fire risk after the treatments they propose.

— density targets are far too low and inconsistent with the existing forest plan as well as best management practices (Franklin et al, 2013)

- Accumulating evidence[6] suggests that harvest causes more emissions than fire, undermining your GHG analysis.

- If climate change is causing more intense fires and creating less than hospitable conditions for forests, how does ramping up carbon emissions through heavy-handed forest management serve the long-term good of our forests?

Climate

- **A recent study found that the climate crisis is the factor predominantly responsible for recent intense western wildfires**[7] Given this, a climate-focused response to these fires is urgently required, however that is not the project described in the EA.

- **The EA lacks an adequate analysis of climate accounting** from cumulative impacts of deforestation and emissions from the proposed project, including roadbuilding, operations, and loss and degradation of existing carbon sinks leading to diminished carbon absorption. In light of research showing a 50-70 % reduction in the ability of soils to absorb carbon following soil compaction associated with logging activities, the soil carbon effects need to be analyzed particularly in the largest project of its kind on the Plumas National Forest.

- **Chad Hanson states in his book *Smokescreen: Debunking Wildfire Myths to Save Our Forests and Our Climate (2021):* "by removing vital nutrients in trees and compacting soils with heavy machinery, logging substantially reduces the carbon sequestration and storage capacity of the forest. Logging-related soil**

[6] https://www.frontiersin.org/articles/10.3389/ffgc.2022.867112/full

[7] https://www.pnas.org/doi/10.1073/pnas.2213815120

compaction alone can reduce forest carbon sequestration and storage capacity by 30% and reductions of 50 to 75 percent sometimes occur.[8]"

- **The EA relies upon assumptions about future wildfire events and their carbon emissions, and makes the unsupported assumption that logging in the area will reduce risk of intense wildfire to communities and wildlife** even though species in this area have adapted over many millions of years to fire including intense wildfire, but have not adapted to mechanical destruction and chemical herbicides.

- **Hanson states (p. 84): *"(The US Federal Government believes that more logging will prevent fires and that removing increasing amounts of carbon from forests through logging will somehow magically result in more carbon in forests."* Is this what USFS believes?**

- *As Hanson (2021) states (p. 211): "Real climate solutions do not promote pulling carbon out of the ground or out of the forest."*

- **"In the US, logging causes ten times more CO2 emissions than the combined emissions from wildland fires and tree mortality from drought and native bark beetles." [9]**

Hanson (2021) states (*p. 148)*: *"the most comprehensive research has found that logging, including thinning, tends to increase fire intensity and causes a large overall net loss of forest carbon storage and a substantial increase in carbon emissions."[10]*

US forests sequester 1.66 billion tons of CO2 each year, logging is preventing that figure from being at least 30% higher because of logging related soil damage and nutrient removal and the conversion of mature forest to young tree plantations.[11]

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[8] **Elliot et al, 1996**

[9] **NL Harris et al. attribution of net carbon change by disturbance type as referenced in Hanson, 2021**

[10] *Jeffrey E. Stenzel et al, "Fixing a Snag in Carbon Emissions Estimates from Wildfires, Global Change Biology (2019))*

[11] **William j. Elliott et al. The effects of forest management on erosion and soil productivity, symposium on soil quality and erosion interaction, keystone, CO, July 7, 1996**

WR Moomaw et al, intact forests in the united states: proforestation mitigates climate change and serves the greatest good," frontiers in forests and global change 2019

Chad Hanson (2021) states *(p. 119) that "Researchers have concluded that efforts to reduce overall tree mortality through logging typically ends up killing more trees than they prevent from dying."*[12]

Most of forest carbon stays in the forest after a wildfire. Hanson states **(p. 83): "..even in large, intense fires, only about 1 to 4 percent of the biomass (and carbon) in trees was actually consumed, on average.[13]"**

- **The climate analysis also lacks consideration of carbon and other emissions from products and equipment utilized during project implementation.**

- **How would "temporary roads created to support mechanical thinning affect canopy cover? Are these included in the overall canopy cover estimates? If not, this assumed recovery of compacted logging roads which is not always viable. As a result, functional canopy cover may actually be significantly lower than presented with impacts on species habitat and moisture retention on the landscape. What is the total area that will be used for new access roads, landings, skid trails etc? The inhibited carbon sequestration of those areas as a result of clearing and soil compaction needs to be calculated.**

- **The analysis fails to properly differentiate between forest fires which release carbon already in the carbon cycle, and fossil fuel burning and loss and degradation of carbon sinks**, which are not part of the natural carbon cycle. **As the** CA Air Resources Board puts it, **"fire is part of the earth's "natural" carbon cycle; combustion of fossil fuels is not."**

Researchers have even looked specifically at the carbon effects of thinning treatments (Hanson, p. 110):

"Logging conducted under the rubric of thinning for fire management results in a large overall reduction in the amount of carbon stored in forests and a large increase in carbon emissions into the atmosphere."[14]

- Research[15] indicates that **only 15% of carbon in harvested wood products is retained in the final product**. As more homes and communities burn in wildfires

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[12] *Diana L. Six, Eric Biber, and Elisabeth Long, "Management for Mountain Pine Beetle Outbreak Suppression: Does Relevant Science Support Current Policy? Forests (2014)*

[13] **Garret Meigs et al, Forest Fire Impacts on Carbon Uptake…..Ecosystems 2009; John Campbell et al, Pyrogenic Carbon Emission from a large wildfire in oregon, united states, journal of geophysical research: biogeosciences (2007)**

[14] John L. Campbell, Mark E. Harmon, and Stephen R. Mitchell, "Can Fuel Reduction Treatments Really Increase Forest Carbon Storage in the Western US by Reducing Future Fire Emissions? *Frontiers in Ecology and Environment (2012)*

[15] Gower et al 2003 and Smith et al 2006

made more intense and frequent by climate change, more of this carbon from building materials and possessions will make its way back into the atmosphere.

- The Forest Service must prepare a full EIS environmental analysis documents that contain full accounting of carbon emission and absorption rates from proposed alternatives. The existing analysis in the EA fails to present a complete or accurate picture of the impacts of the project even though such a clear scientific analysis is possible.

- Hanson states:*"Even with a 93 percent reduction in fossil fuel consumption over the next few decades, we would also need to dramatically decrease logging and increase forest carbon storage to overcome the worst impacts of the climate crisis"*[16]

- *In other words we need forests pulling as much carbon out of the air as possible or we are in deep trouble.*

- Eastside Pine is moderately slow growing and long lived.[17] These characteristics make this vegetation type a valuable carbon storage and habitat ecology to protect.

- Forests represent a major single opportunity to pull down excess, hazardous carbon dioxide from the atmosphere by maximizing forest health, carbon capacity and resilience to changing conditions. The best science indicates that when forests are left alone they regenerate toward an old growth state, cooperating with each other and maximizing carbon retention on the landscape.[18]

- Removing trees from the forest mechanically en masse without leaving their carbon to deteriorate and provide food and homes for wildlife (a natural death for a tree) disrupts these communities of plants, particularly fungal networks in soil disturbed by very heavy equipment. This reduces the carbon capacity, health and resilience of large areas of treated forest.[19]

- Reduced resilience (via disturbance and mortality) leads to greater risks to nearby communities in terms of intense wildfire.

- It is well established that forests are the most important ally we have in the fight for a stable climate.[20]

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[16] Bronson W. Griscom et al, "Natural Climate Solutions" Proceedings of the National Academy of Sciences…2017

[17] Bond et al, 2009

[18] (Campbell et al, 2012; Law et al, 2018)

[19] Campbell et al, 2012 and Hudiburg et al, 2013

[20] Campbell et al, 2012; Law et al, 2018

Please see attached comments from John O'Brien, Ph.D. Postdoctoral research fellow, Climate Analysis Section, Climate and Global Dynamics Laboratory, National Center for Atmospheric Research. We incorporate Dr. O'Brien's comments and references and apply them to the Community Protection Project where appropriate and relevant.

In his letter, *Dr. O'Brien states:*

*"**Our forests are the only scalable technology humans have for directly drawing down atmospheric CO2***, and for this reason, in addition to many others, protecting them unequivocally serves the greater good." He adds:

***Forest carbon storage levels in the U.S. and California are far below their biological potential**, due to many decades of carbon removals from logging[21] so there is enormous climate change mitigation potential if we begin a shift away from logging and allow our forests to absorb and store much more carbon.[22]*

***More logging occurs in the U.S. each year than in any other nation on Earth[23]** meaning the U.S. is the greatest emitter of greenhouse gas emissions from logging.*

***Yearly carbon emissions from logging in the U.S.** exceed annual emissions from the residential and commercial sectors combined.*

Logging in U.S. forests emits 10 times more carbon than fire and native insects combined[24]

***Existing models vastly overstate wildfire-related carbon emissions** by assuming much higher than actual consumption of vegetation and failing to account for the rapid post-fire natural vegetation regrowth and carbon sequestration that occurs.[25]*

***Denser forests and long unburned forests that contain more biomass and carbon do not typically burn more intensely in wildfires**, contrary to widespread popular misconceptions.[26]*

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[21] McIntyre et al., 2015

[22] Erb et al., 2018; Law et al., 2018; Strassburg et al., 2020

[23] Prestemon et al., 2015

[24] (Harris et al., 2016)

[25] Meigs et al, 2009, Campbell et al, 2016, Stenzel et al, 2019, Hanson and Chi, 2021

[26] Odion and Hanson, 2006, 2008; Odion et al, 2009; Miller et al, 2012; Zald and Dunn, 2018; Lesmeister et al, 2019; Dunn et al, 2020; Meigs et al, 2020

The Community Protection Project would entail a significant part of the US logging program. In Hanson's Smokescreen (*p. 208) he states:*

"Ending the logging program on US public lands and getting federal land management agencies out of the commercial logging business would be (the carbon equivalent of) removing ***24 million cars from US highways.***[27]*"*

- Forests and their inhabitants have been adapting to changing climatic conditions for millions of years. It is the rapidity of the changes afoot now that are unique not the extent.

- What forests are not adapted to is fire suppression and widespread disruption by mechanical means. These are the actions and conditions that have created today's carbon- impoverished forests and are preventing them from returning to historical levels of carbon-carrying capacity.

- California's forests and US forests in general are particularly vulnerable to droughts caused by the climate crisis.[28] It is imperative that forests be truly resilient (not engineered) to survive the stressors to come. A closed canopy or near closed canopy (either native shrub or tree species) can be understood as an adaptation strategy that trees and plants use to minimize sun or wind driven evaporation of soil moisture, particularly important during droughts which are set to become more extreme. Poisoning native shrubs with glyphosate and other herbicides is working counter to likely adaptations in these habitats that respond to changes in climate and shift ranges of habitats to compensate for climate shifts.

- *"*Forests are critically important in our fight against rising CO2 levels and concomitant climate change. Despite only covering ~9% of the earth's surface, forests are responsible for sequestering ~25% of anthropogenic carbon emissions, which is approximately equal to the carbon sequestered by the global oceans[29], which cover ~70% of the earth's surface and are rapidly acidifying as a result[30]. Our forests face an ever uncertain future, as do we as a species, and it is imperative that our forests be conserved and not managed under an incentive structure by which those tasked with overseeing them also see financial gain from their destruction."[31]

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[27] *Depro et al, "public land, timber harvests, and climate mitigation*

[28] (Diffenbaugh, 2015)

[29] Pan et al., 2011

[30] Orr et al., 2005

[31] O'Brien, 2021

- "*The dominant cause of carbon loss from our forests is timber harvest*[32] *and this* ***protecting forests from logging maximizes carbon storage and removal of CO2 from the atmosphere****."*[33]

- At all costs, forests must remain as carbon sinks and not collapse and become carbon sources. This potential feedback loop threatens significant long term harm to human and ecological communities. Widespread forest protections provide the most sure, proven way to maximize forests as carbon sinks, and mitigate local and global climate from disruption. Our survival and our children's survival depend on it.

- **Logging in US forests causes 617 million tons of co2 emissions each year with 106 million tons due to logging-related transportation.**

- **The minute a large tree is cut down it begins releasing carbon back into the atmosphere. Approximately 85% of the carbon from a logged tree is released into the environment after processing and only 15%of the carbon is stored. (Gower et al, 2003 and Smith et al 2006)**

- Please reply to questions adapted from O'Brien specifically as they relate to the CPP logging project:

1) Please conduct a complete analysis of the GHG effect of THIS project. It is not appropriate to predicate/qualify the GHG impacts of this project with hypothetical future scenarios that may never materialize.

2) Despite the inappropriate use of hypothetical future scenarios to mask/offset the GHG impacts of this project, it is well-established that the climate we are living in is highly non-stationary due to anthropogenic forcing. As such, please justify the use of fixed/constant forest growth assumptions in future emissions/ response scenarios.

3) Each major FS project must by law complete an alternatives analysis. Given that climate change is the single most pressing issue we face as a country and as a species, please indicate how the carbon impacts compare with the alternative case of "no action." Based on this carbon accounting and comparison of carbon impacts, please justify how the project as proposed without an underburn/ handthin alternative, supports and is in line with State and Federal emissions reduction targets.

4) It is an indisputable fact that the selective removal of large trees opens the forest canopy overstory allowing more solar radiation to reach the forest floor thereby increasing surface evaporation/transpiration that results in drier forest microclimates. Note, this process is governed by radiative transfer and fluid dynamics and is therefore

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[32] Harris et al, 2016, Berner et al 2017

[33] O'Brien, 2021

independent of forest type. Please justify exactly how drier understory conditions that will be created by removing large trees as part of the project reduces wildfire risk.

6) It is an indisputable fact that the largest trees are the most fire resilient due to their thick bark, high thermal mass, and large surface to base-of-crown heights[34]. Please justify exactly how removing the largest trees makes the forest as a whole more fire safe and fire resilient.

7) It is an indisputable fact that selectively removing the largest trees with the high dense crowns, thereby thinning the stand, results in increased in-stand and canopy wind speeds[35]. Please justify exactly how increased in-stand and canopy wind speeds reduce wildfire risk.

8) It is an indisputable fact that left over slash and surfaces fuels are the biggest driver of fireline intensity behind climate and fire weather[36].

9) Given that forest mortality in the Western US is expected to dramatically increase in the coming years[37], and that that conifer mortality is expected to be far greater than deciduous tree mortality[38], please justify how cutting down trees including large conifers above 24" dbh is a prudent present-day decision in the face of a climate under anthropogenic forcing.

- Have compaction effects from mechanical equipment on soil been analyzed as to their short, medium, and long term climate impacts in light of the latest science showing forest soil as critical carbon storage and sequestration habitat?[39]

- Removal of canopy cover can thus contribute to conditions likely to make the forest more - rather than less- flammable during a wildfire, consistent with studies cited in the fire section and contrary to the goals the FS has identified for this project?

- Protecting forests from logging maximizes carbon storage and removal of CO2 from the atmosphere.[40]

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[34] Douglas et al. 2010

[35] Weatherspoon, 1996; Cruz et al., 2014; Russell et al., 2018; Banerjee, 2020

[36] Weatherspoon, 1996; Rhoades and Baker, 2008; Reinhardt et al., 2008; Knapp et al., 2017; Banerjee, 2020; Stephens and Moghaddas, 2005; Abatzoglou and Kolden, 2012; Jolly et al., 2015; Sieg et al., 2017; Zald and Dunn, 2018; Williams et al., 2019; Hart and Preston, 2020

[37] Allen et al., 2010; Choat et al., 2012; Anderegg et al., 2013; Williams et al., 2013; Brodribb et al., 2020

[38] McDowell and Allen, 2015; McDowell et al., 2016

[39] Schultz et al, 2016

[40] Campbell et al, 2012; Law et al, 2018

We believe that a “handthin/ underburn / community hardening alternative would be less costly to taxpayers and dramatically reduce carbon emissions which should be the highest priority of this project.

- Premature mortality through harvesting is associated with immediate carbon releases and decreased sequestration potential over time)[41].

- *As the CA Supreme Court explained, “because of the global scale of climate change, any one project’s contribution is unlikely to be significant by itself.”* As part of a large scale land use pattern across millions of acres of forest service land, however, the practice of thinning/ logging is having a significant effect. We ask that a complete analysis of carbon emissions and sinks be prepared as part of an EIS for this project, that considers a range of possible scenarios as well as the cumulative climate impact of this type of forest treatment over wide areas, which this current plan is a small part of.

- **Please calculate the carbon impact of mastication treatments that “convert live aerial fuels to dead surface fuels” (which decay and release carbon to the atmosphere). This dead and dying fuel contributes to fire risks to communities.**

- **Canopy cover is higher in every forest class under a “no action” alternative. Canopy cover is positively associated with cooler and moister microclimates especially under the canopy, carbon retention and habitat for many important wildlife species mentioned in EA reports. Please explain how mechanical thinning projects that compact the soil, and open up the canopy artificially to wind and sunlight make the forest more resilient in a changing climate.**

- **Humans — particularly in the United States— have tremendous control over the eventual outcome of the climate crisis. The FS plays a part in the *cumulative impact* of these many decisions that affect the intensity of future severe climate disruption. We can choose to not make the climate crisis worse by (near) clearcutting, cutting old trees, disrupting and destroying habitat (which is also carbon) and compacting the soil through mechanized logging on public lands.**

- **Portions of the project area are on the edge of the Great Basin which has distinctly drier climate than the forested Sierras. Because of that, risk of desertification and subsequent impacts on economies, livelihoods, and wildlife are greater here than elsewhere, yet this risk was not considered in the EA.**

- **There is evidence that dense forests and moist forest floor conditions lead to clouds producing rain to a greater extent than they would otherwise. This is**

[41] Battles et al, 2014

yet another potential climate feedback loop that may be triggered by the project and others like it.

Larger, older trees like many of those proposed to be cut in the "Community Protection" are critically important global carbon storage. For example, of the 561 million metric tons of carbon in a sampling of 11 national forests, **73% of the carbon is found in larger trees**.[42]

— The project would permit the cutting of *30" diameter trees. 30 inches wide is nearly eight feet in girth. Trees of this size are typically 100-200 years old, and are critical to climate stabilization efforts.*

William Moomaw, physical chemist and environmental scientist at Tufts University and member of the Intergovermental Panel on Climate Change (IPCC), has studied the potential for forests to absorb great quantities of carbon. In an interview published by the Yale School of the Environment, he states:

*"**William Moomaw:** So I began looking at some of the data and some of the papers that had come out recently, and I found that **if we managed our forests and grasslands in a different way they could be sequestering twice as much carbon dioxide from the atmosphere as they currently do**. One paper found in multi-aged forests around the world of all types, that **half of the carbon is stored in the largest one-percent diameter trees**. So I began thinking about this, and I realized that the most effective thing that we can do is to allow trees that are already planted, that are already growing, to continue growing to reach their ecological potential, to store carbon, and develop a forest that has its full complement of environmental services.*

*We needed a name for that, so I began thinking about names. I actually sat down and went to Google and searched for prefixes, found a whole bunch of them, and the one that I settled on was pro. **Proforestation**. It's not that we shouldn't do afforestation [planting new trees] and we shouldn't do reforestation. We should. But recognize that their contribution will be farther in the future, which is important. But **in order to meet our climate goals, we have to have greater sequestration by natural systems now. So that entails protecting the carbon stocks that we already have in forests, or at least a large enough fraction of them that they matter**. We have to protect wetlands, which are actually storing an amount of carbon in the United States that equals what's in our standing forests. We need to protect and improve the carbon sequestration by agricultural soils and grazing lands.*

*It's taken a very long time for people to focus on something besides reducing emissions of carbon dioxide and other greenhouse gases. And to recognize that **even though we're putting almost 11 billion tons of carbon into the atmosphere every year, the increase is only 4.7 billion tons. So where is the rest going? It's going into plants***

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[42] https://www.woodwellclimate.org/scientific-basis-for-protection-of-mature-and-old-growth-forests/

on land and plants in the ocean. And the largest single place that's removing carbon dioxide [from the atmosphere] on an annual basis is forests. *Even what we think of as mature forests are still accumulating carbon because carbon makes up about roughly half of the dry weight of wood, but it is also in the soils. Even older forests continue to accumulate carbon in the soils. In fact there are forests where there's more carbon in the soils than there is in the standing trees. As trees get older, they absorb more carbon every year, and because they are bigger they store more carbon.*

We need to have a conversation about which forests are most capable of sequestering carbon in the near term. And those are forests that are generally in the age range of 70 to 125 years — they are the ones that are going to add the most carbon in the coming decades. Unfortunately, 70 years, for many species, is the perfect size for the sawmill. So it is going to mean saying ,well, we're going to not cut these.

The most disturbed forests in the world are in the United States, not the Amazon and not Indonesia

Moomaw: *If we get to net-zero emissions by 2050 and we continue to reduce our emissions after that, and if we continue to increase the biological sequestration — the nature-based solutions as they're sometimes referred to — we would actually start reducing the amount of carbon dioxide in the atmosphere between 2050 and 2100. The more we can increase the sequestration rate and the faster we can reduce the emissions, the better off we'll be. But cutting trees to burn them is not a way to get there."*

The EA states:

- All treatments would implement VDT, which is intended to better mimic pre-settlement conditions created under a frequent fire regime to which native species are adapted.

- **Why are "pre-settlement conditions" being used as a basis to recreate or engineer the forest given that future climates will likely no longer resemble that time period in terms of precipitation and temperature?**

- More recent evidence suggests that rather than being all "open and parklike" historical forests were comparable to the density of today's forests[43]

- A**ttempts to create a hypothetical past fire regime using artificial means is likely based on incorrect data and assumptions.**

- **If the FS would like to protect features like springs, meadows and wetlands, aspen groves etc. into the future, the best thing is to stabilize the climate,**

[43] Baker, 2014, Baker et al 2018, Williams and Baker, 2012

reduce emissions of operations to near zero, maximize carbon absorption of forests as a primary goal, and allow these natural features to recover in time.

- **Conifers and aspen have co-existed on this land for millions of years, in a coevolutionary process and cycles of wet and dry, hot and cold. They need our help only in so far as they need us to quit messing up the atmosphere leave the forests in peace and let them burn when safe to do so.**

Ecology

The ecological impact of the proposed project is likely hugely significant, and cumulative impacts of this and other similar projects would likely push species over the edge, particularly those who depend on dense forest habitat. In particular, the Spotted Owl, Northern Goshawk, and endangered frog species would be vulnerable to operational deaths, near term loss of habitat and longer term climate impacts from the project.

— The impact of the project on the lives of other animals and plants not considered threatened or sensitive is referred to only as “potential adverse effects on biological resources” — these are not resources they are individuals.

— Potential for serious project interference with the local grey wolf pack on Beckwourth Peak is significant as these wolves are not radio collared (which causes damage and stress to these protected animals). Project area overlaps with range of this pack and activities could impact dens or rendevous points. This project is so large, and stretches across 3 counties, it may impact the wolves’ ability to escape the project impacts and still care for their young and survival.

The monarch butterfly population has crashed 99% in recent years in part because of widespread herbicide use. How will additional application of $30 million in herbicides affect remaining threatened monarchs?

-Noise has underestimated impacts on wildlife and human communities. The cumulative noise impact has not properly been assessed.

• On p. 21 of Franklin et al, it states,

*“…dense stands may be important for wildlife species, such as the **northern spotted owl and northern goshawk**. Thus landscape analyses may result in maintaining dense patches of these stands across the landscape.”*

How will significant de-densification of shrub and tree cover along with land disturbance affect this species, from a cumulative perspective including all the added human pressures?

• *the National Forest Management Act…state that it is the policy of Congress that all forested lands in the National Forest System* ***be maintained in appropriate forest cover****…"*

Sierra Nevada Forest Plan Amendment Record of Decision states, "Design projects to retain at least 40% of existing basal area."

- Proposed treatments would make the forest *less* resilient and adaptable in case of future climatic changes. In addition removing trees because of insects or disease is depriving the forest of individuals within the affected community that may have natural genetic resistance required by tree populations.[44]

- How does the FS account for the lost carbon storage potential, loss of wildlife habitat, and carbon emissions from management activities— particularly mechanized thinning? Shouldn't federal funding go toward *reducing* emissions rather than increasing them?

- It is well documented that **trees share water, nutrients, and information[45]. There is documented cooperation among forest species yet the FS only considers competition and productivity in its analyses.**

- Several sections of the EA discuss disease and infect infestation and justify removal of trees based on such observations. However, this activity, especially when carried out on a landscape scale, may reduce long term resilience of many of these species by removing from the gene pool trees that have a natural resistance to certain insects or disease. Insects and infections are natural aspects to the forest ecology, and are always fluctuating with drought levels, food sources, etc.

•QUOTE: *"When it comes to "industry" decisions and what direction we, as a community, a society, a species, want to head, economic factors always play an important role. Historically, logging constituted a large fraction of the jobs in Northern California, regrettable as that may be, since as a result, our forests have been reduced to a fraction of what they once were, with concomitant impacts to biodiversity, watersheds, salmonids, and endangered species. However, times have changed and the logging industry is tantamount to the coal industry in the eastern U.S., it is archaic and has outlived its purpose."*[46]

- *To recap, the EA describes clearcuts of 75% or more canopy reduction, whereas best practices recommended by* Franklin et. al (2013) *for eastside pine forests are less than 25% canopy reduction for "openings."* Both the shape and extent of the

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[44] https://www.annualreviews.org/doi/abs/10.1146/annurev.py.09.090171.002245?journalCode=phyto

[45] Simard et al, 1997

[46] O'Brien, 2021

openings are inconsistent with recommendations. That these treatment guidelines were not considered in any alternative represents a lost opportunity for the public to make valuable comparisons with industry best practices guidelines.

- **<u>Franklin et al (2013)</u> also recommends leaving ALL the oldest trees and all trees over 150 years old regardless of species, even in the created openings.**

- "Ninety-one percent of butterfly and moth species are associated with snag forest habitat."[47]

- How would the loss of snags and significant numbers of older trees effect microclimates in the area, species more sensitive to sun, species like butterflies? How would that affect wind speeds within the canopy, drying and evaporation in these affected areas? Those seem like basic questions /information needed for a compete analysis (particularly for a project so focused on wildfire mitigation). These models have not been run and data has not been provided. California Spotted Owls prefer snag forest habitat over other forest types[48]

- Earth is currently experiencing a strong or very strong El Nino[49]. These weather patterns are associated with a higher than average likelihood of extreme precipitation during rainy seasons, including precipitation in the mountains falling as rain in areas not accustomed to it- potentially triggering unprecedented floods and landslides[50]. This has not been considered as a factor that may contribute to mechanical - caused sedimentation, erosion, habitat and species impacts or impacts on communities etc. (or herbicide disperal into communities).

- **Reference stands of east side pine[51] indicate basal areas of 132 sq ft/ acre, another with 134 sq. ft/ acre, and a third with 82 sq ft./ acre. The average of these reference stand basal areas is 116. Density targets in all three alternatives are far below that of healthy diverse conifer forests and the historical densities of conifer forests. Dramatic reductions in density are supported by flimsy evidence. This is a vastly increased level of biomass (and thus carbon) removal, above what is recommended in the forest service's own best practices manuals.**

- Large trees typically cast large shadows which can help snowpack be retained for longer into the dry season. They can also retain water on the landscape, impact local

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[47] Swanson et al Biological Associates of early seral pre-forest in the pacific northwest 2014

[48] Monica L. Bond et al Habitat Use and Selection by California Spotted Owls in a Postfire Landscape Journal of Wildlife Management 2009

[49] https://weatherwest.com/archives/26962

[50] https://www.sciencedaily.com/releases/2023/06/230628130404.htm

[51] **Youngblood et al, 2004**

microclimates, and act as wind buffers preventing evaporation from the landscape. Why were these factors not considered?

- Creating new, many and additional forest openings far above best practices[52] for eastside forests may have unintended consequences in terms of disturbance, regrowth of small conifers and shrubs (where an overstory doesn't shade them out and disturbance encourages germination) and fire characteristics of these disturbed areas. Has the fire potential of this landscape been studied by an ecological fire expert, taking into consideration actions being considered as part of the "community protection" project, and experiences of similar large scale interventions in the recent past?

- The FS should not be in the role of "engineering" the forest, eg. which species of forest inhabitants are allowed to remain and which are removed. This is public land, and a delicate wild ecosystem, not a tree farm. We can promote fire resistant large trees by allowing them to persist on the landscape as critical carbon and wildlife habitat.

- **A convincing case was not made for tree removal based on the presence of insects in the environment and common forest organisms. Please provide peer-reviewed science to back up claims. Insect populations are collapsing, and we depend on them to pollinate our food. Removing insect habitat from the forest is having cumulative and considerable effects on insect populations which are also a key food source for many birds and other forest inhabitants.**

It is very clear from data tables that the project will reduce canopy cover including over 20 year time horizons. We need that carbon storage capacity right away and over the next 20 years not in 2050 when it may be too late.

What actual evidence can be cited that miles of new logging roads etc. will not *impair soil productivity. What evidence- other than just saying it- is presented to justify that sending large mechanical vehicles into sensitive forest habitat will not have "significant" effects. Where is the evidence?*

- *The project says it aims to control invasive plant species. Yet there is likely a moderate to high risk of invasive plant introduction and spread particularly from proposed mechanical thinning. Do the benefits really outweigh the risk and by what calculation? Will the project increase or decrease the population of so-called "invasive" plants.*

- Franklin et al *recommend all trees greater than 150 years old be retained. Why is this guidance being ignored in the CPP EA?*

[52] Franklin et al

- The Mapes- Crocker EA referenced that a 30 inch diameter tree can weigh upwards of 3 tons. This represents tons of carbon that need to stay stored in the forest not released by logging. 30 inch trees are near old growth phase of life and should be left alone. How many more tons will such a tree continue to absorb over its lifetime if left alone? Please provide data on how much carbon a single 30" wide tree is absorbing now and will absorb over its lifetime if left to grow old and die in the forest?

- Mechanical treatments will remove effective soil cover and cause runoff, reductions in water quality, and erosion and existing mitigations are not enough to prevent significant damage, particularly with a higher than normal chance of higher than average precipitation in the next 1-2 years in California[53].

- The EA states that typically 3 down logs should be left per acre. Why is there no tonnage reference or requirements? How does this compare to conditions pre-settlement?

- What peer-reviewed recent science shows that mechanical logging projects make forests more resilient? Isn't some level of tree mortality inevitable and even healthy for forest dwellers who require standing snags such as certain woodpecker species?

- Is it FS policy to "engineer" the forest to compensate for humanity's climate failings? Has there been any analysis of the effect on the genetic pool of removing trees that could carry strong disease resistance traits?

- More open stands allow more sunlight and wind into the canopy. Has a full analysis of these impacts including future climate scenarios been completed?

- How were snags/ dead tree standards arrived at, informed by what science, and why not leave more on the landscape, considering transport and burning in biomass plants all produce more carbon that leaving the biomass in place?

- Proposed treatments would have negative impacts to sensitive species listed in the EA **through reduction in complex forest vegetation structure. This is a common thread between threatened and endangered forest inhabitants.**

- Does the CPP project increase total number of large trees, downed wood, and snags or does it decrease them?

- It is not clear what methodology was used in assessing the relative cost/ benefit of cutting down large trees and denser forest habitat that are key for spotted owl survival (and that are also in the WUI defense and threat zones). Guidelines in the WUI zones in particular seem arbitrary and not connected to any specific owl conservation best practices (just "we'll take as few as we can).

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[53] https://weatherwest.com/archives/26962

- Lack of old growth trees in area and alternate available owl habitats was not adequately addressed.

- All threatened species listed in the EA evolved to become the animals and plants they are today with mixed intensity (including high intensity) wildfire. That is a fact supported by continuing scientific research. Fire is a natural, essential part of ecosystems and is nothing new. Therefore to continually demonize fire and assert that impacts to species from the mechanical destruction of the project itself will be outweighed by a reduction in the risk of "severe wildfire" as a justification of harm is arbitrary and unsupported by evidence.

- Please document how FYLF are harmed by high intensity fire

- The "no action" alternative assumes that fire will not be present on the landscape (as part of existing prescribed burns and natural burns) to reduce densification of the forest- this is not a valid or accurate assumption yet it is repeated again and again in the CPP EA.

- Please provide evidence that the borax treatments will not impact and is safe for western bumble bee which is in decline. Cited studies?

- **"Retention of suitable habitat by limiting management actions in California spotted owl habitat is no longer acceptable and comes at a great risk (Jones et al. 2021a; Jones et al. 2021b). So, one study and we're mowing down spotted owl habitat?**

- **Management plans (that increase dead and dying fuel on the landscape) and dry out and interrupt the forest canopy would sacrifice owl habitat to logging and human habitat to fire. Everyone loses.**

- Effects on such a large area (50,000+ acres) in terms of siltation and disruption of habitat demands further study.

- The EA continually describes severe wildfire as damaging to wildlife. However the facts tell a different story.

The highest levels of plant species richness are found in high intensity fire patches—higher than in lower-intensity fire areas or unburned forests[54]."

[54] Daniel C. Donato et al "Vegetation Response to a short interval between high severity wildfires in a mixed evergreen forest. journal of ecology 2009

Studies have found higher levels of bird species richness in high-intensity fire patches than in lower-intensity fire areas or unburned old forest[55]

— It is inappropriate and counterproductive to poison native shrubs with toxic herbicides, particularly since native shrubs assist with the growth of new forest stands.[56]

Mechanical logging operations are brutal to the forest community.

(Hanson: "Smokescreen" *p. 122):*

"Logging machinery routinely rolls over and kills the young of shrub and ground nesting species. Felling live, mature trees routinely kills chicks of canopy-nesting species, who build small nests of twigs and grasses high on tree branches."

"Studies have found that logging— not fire— is driving Northern Spotted Owl declines."[57]

p. 123: "one study found that California Spotted Owl populations declined by 43 percent within a few years after a commercial thinning operation."[58]

p. 204:

"There is no evolutionary history of logging in forest ecosystems. Logging is an anomaly of the industrial world— one that degrades and eliminates most of the things that define a forest ecosystem….Clear-cutting is not the only type of logging that removes the very essence of forests. To a lesser but nevertheless substantial degree, commercial thinning does so too, eliminating most of the forest understory and often most of the midcanopy, pulverizing downed logs into tiny bits of wood, crushing and killing wildflowers and compacting soils with heavy machinery, rolling over and destroying shrubs that are home to nesting birds, felling and removing snags at a time when woodpecker and bluebird chicks cannot escape, and spreading invasive grasses. What is left are some widely spaced mature trees and little else— not a forest ecosystem."

p. 222:

"A highly intense forest fire almost invariably has tall flames that turn a high percentage of trees into snags."

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[55] Joseph B. Fontaine et al Bird communities following high severity fire. Forest Ecology and Management. 2009

[56] Flintham, Forest Extension in the Sierra Forest Reserve

[57] *https://phys.org/news/2022-10-wildfire-northern-owl-decline.html*

[58] *scott l. stephens et al, California Spotted Owl, Songbird and Small mammal responses to landscape fuel treatments, Bioscience (2014)*

In one study, 52.4% of mice died as a direct cause of the timbering operations, being crushed by vehicles or logs during logging operations. Our observations suggest that, instead of fleeing the area, the response…to the approaching machinery is to hide under the forest litter or in burrows, which exposes them to a serious risk of death.[59]

— The forest plan amendment would allow mechanical thinning in areas where spotted owls are known to roost near communities, and minimum density would be changed (to 23% in some areas) below 40% where it is currently set (and many areas are of course far denser).

— Plan would require a forest plan amendment that would drop protections for spotted owl and other species, without adequate study and the legal minimum public participation.

*— Assertions that the action alternatives would be *less* impactful than the no action alternatives (allegedly protecting species from climate change and intense wildfire by engineering the forest to reduce wildfire risk) is not supported by evidence and is highly speculative*

— California Wildlife Habitat Relations (WHR) guidelines were not apparently considered in connection with canopy cover and densities as described in Bond et al 2009:

*"*We used California Wildlife Habitat Relations (WHR) [26] to describe specific vegetation types, canopy cover, and tree size-class. "*WHR vegetation type,*" is derived primarily from CALVEG cover type and relative cover of conifer and hardwood trees for mixed vegetation types. For our study area, the *WHR vegetation types* consisted of Jeffrey Pine, Sierra Mixed Conifer, Montane Hardwood-Conifer, **Eastside Pine**, and Closed-cone Pine- Cypress. "***WHR density*" is a measure of tree density indexed by percent canopy cover and included: Sparse (10.0-24.9%), Poor (25.0-39.9%), Moderate (40.0-59.9%), and Dense (>60%). "**

The "Protection Project" would leave most of the project area in the "Sparse to Poor" categories. The "moderate" canopy cover category coincides with existing forest plan that this project seeks to amend to reduce these canopy cover levels to "sparse to poor" habitat according to the WHR.

- What guarantee is there that tree seedlings will survive the compacted soil, and hotter, drier conditions forecast under climate change models? Salvage logged hillsides will likely revert to shrub dominance when seedlings fail whereas a forest may have remained absent the salvage operations.

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[59] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4352083/pdf/pone.0118883.pdf

Evidence submitted to the FS during the mapes project consultation indicated severe impacts to aspen when conifer removal activities affected the area.

- Trees at forest's edge often have a noticeable girth (Wohlleben, 2015), which may make them preferential habitat for large birds, especially birds of prey. Has this been analyzed?

- Meadows play a crucial role in carbon sequestration and water filtering, and contribute to habitat diversity on the landscape. Likewise, so do large conifers. How were these factors considered when analyzing this project?

- **Nearly every species analyzed in the EA are favorably associated with closed canopy, and old growth conditions, yet the "action" plan is to cut mature forest, dramatically reducing canopy cover below best practices densities. Can you please explain this discrepancy.**

- Would a silviculturist or district biologist review ALL large trees in this area proposed for logging? Who would make these decisions and what are their qualifications?

- This project seems to violate the letter and spirit of the Forestwide Standards and Guidelines #11, standards 27-29 (p. 71) which states:
    - *27) **Minimize old forest habitat fragmentation.** Assess potential impacts of fragmentation on old forest associated species (particularly fisher and marten) in biological evaluations.*
    - *28) **Assess the potential impact of projects on the connectivity of habitat for old forest associated species.***
    - *29) **Consider retaining forest linkages (with canopy cover greater than 40% that are interconnected via riparian areas** and ridge top saddles during project-level analysis.*

- In general, the FS should be looking at an alternative that focused on hand thinning and underburns around structures and where needed for forest health WITHOUT mechanical treatments. We suggest consulting with the Yurok tribe and their prescribed fire treatments[60] which have renewed the landscape and improved safety for low cost while avoiding the side effects of mechanical operations into roadless areas of the forest.

- Trees not only store water and carbon on the landscape but contribute to a shadier understory, windbreak, and higher humidity which may helps springs and surface water sources to persist. They also provide key wildlife habitat around key water

[60] https://www.theguardian.com/us-news/2019/nov/21/wildfire-prescribed-burns-california-native-americans

sources. In addition large trees and a healthy canopy help generate rainfall further inland, reducing drought in and around the project area. (Jacot et al, 2012)

The Smithsonian article from 2018 entitled, "Do Trees Talk to Each Other?"[61] discusses cooperation- not competition- between trees:

"With his big green boots crunching through fresh snow, and a dewdrop catching sunlight on the tip of his long nose, Wohlleben takes me to two massive beech trees growing next to each other. He points up at their skeletal winter crowns, which appear careful not to encroach into each other's space. "These two are old friends," he says. "They are very considerate in sharing the sunlight, and their root systems are closely connected. In cases like this, when one dies, the other usually dies soon afterward, because they are dependent on each other."
Since Darwin, we have generally thought of trees as striving, disconnected loners, competing for water, nutrients and sunlight, with the winners shading out the losers and sucking them dry. The timber industry in particular sees forests as wood-producing systems and battlegrounds for survival of the fittest.

There is now a substantial body of scientific evidence that refutes that idea. ***It shows instead that trees of the same species are communal, and will often form alliances with trees of other species.*** *Forest trees have evolved to live in cooperative, interdependent relationships, maintained by communication and a collective intelligence similar to an insect colony. These soaring columns of living wood draw the eye upward to their outspreading crowns, but the real action is taking place underground, just a few inches below our feet.*

"Some are calling it the 'wood-wide web,'" says Wohlleben in German-accented English. "All the trees here, and in every forest that is not too damaged, are connected to each other through underground fungal networks. Trees share water and nutrients through the networks[62], and also use them to communicate. They send distress signals about drought and disease, for example, or insect attacks, and other trees alter their behavior when they receive these messages."

- **John Preschutti's comments and supporting photographs indicated a failure of a similar conifer removal project nearby on the Mabie project. He reports that "all that is coming back is a conifer thicket and nothing— no aspen" fifteen years after large conifers were removed. A photograph of the area depicts stumps, downed branches and dry grass, with little to no aspen progression into the area.**

- **Projects undertaken by the Forest Service to remove large old conifers (up to at least 280 year old) ostensibly to protect Aspens have been met with incredulity and opposition by the public. (Moonshine Ink, 2012)**

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[61] https://www.smithsonianmag.com/science-nature/the-whispering-trees-180968084/

[62] https://www.science.org/content/article/trees-share-water-keep-dying-stump-alive

- **Meadow edges are sensitive areas (Jacot et al, 2012). Disturbing them with heavy equipment to remove conifers is likely to be extremely damaging and disruptive.**

- **This framework for understanding ecological relationships is not supported by the facts. Numerous studies have found that trees share information, nutrients and other resources even to nearby members of different species (Simard et al, 1997).**

Fire

The treatments described in the EA would **increase** fire risks to communities, specifically by altering the conditions under which fast and high intensity fire flourishes:

— reducing humidity in the forest
— increasing wind speeds in the forest, drying out vegetation
— decreasing humidity in the air, soil, and vegetation by greater solar and wind exposure
— increasing slash and other forest disturbance
— increasing speed of inevitable wildfires progress approaching communities, reducing evacuation times, intervention opportunities etc.

We who live in this area are all affected by these actions. We request that these factors be fully considered in an EIS and weighed against the data provided in the EA before the FS takes any action that may put communities at even greater risk from the climate crisis alone. This project is likely well intentioned by many working for the Forest Service and other agencies but the above impacts are undeniable results of the proposed project and must be analyzed and quantified prior to a .65 BILLION dollar project.

- The models of flame lengths and fire intensity using FlamMap are known to be inaccurate and lacking precision. Specifically they were found to unable to simulate realistic fire conditions such as spotting. FlamMap was also “unable to simulate realistic fire perimeters.”[63]

- Many openings disturbed by logging equipment could easily become brush fields or dense thickets of pine seedlings (as has been demonstrated to the FS through photographic evidence included in public comment as part of the recent abandoned Mapes-Crocker project (which also had similar flaws to the CPP EA). These pine thickets are indicative of conditions the FS apparently would like to avoid due to fire danger, yet they continue to develop as a direct result of heavy machinery in the forest. This plan puts communities at risk from subsequent development of pine

[63] Zigner et al, 2020

thickets in mechanically disturbed areas and would require significant maintenance to avoid future fire impacts which are not detailed in the EA.

- Severe fire as part of multi-intensity fire has existed for millions of years in eastside pine forests.[64]

- Many small conifer saplings and small trees used to be “managed” by porcupines but these were eliminated in the area by the Forest Service. Perhaps today’s Forest could reintroduce them and put them on the payroll.

- The EA repeatedly alleges that the absence of fuels and vegetation management would increase the risk of a high severity wildfire. However, the evidence suggests that the more biomass, live and dead trees present, the lower severity of wildfire[65]. Please explain this inconsistency between FS actions and the best science on forest fire behavior.

- We question the FS assertion and assumption that thinning forests necessarily reduces fire intensity and risk. While these activities may reduce the amount of burnable trees, shrubs, and downed material in the environment, they also can compact soil, increase drying and erosion at the forest floor through sun and wind exposure and especially vulnerability and permeability to high winds during fire season which makes young, open and damaged forests lacking developed understory vulnerable to fast moving wildfire (exactly what occurred in the Camp Fire that burned Paradise.)

- The assertion that treated (thinned, logged) areas of forest are more resilient to forest fire is not supported by the best scientific evidence. In fact, in a 1995 study, uncut forests had the least fire damage whereas partial cut forests with slash and other logging debris “suffered the most severe damage.[66]

- The 1996 Sierra Nevada Ecosystem Project Report commissioned by Congress, concluded:”Timber Harvest, through its effects on forest structure, local microclimate, and fuel accumulation, has increased fire severity more than any other recent human activity.”[67]

- Extensive studies of over 1500 fires and 9.5 million hectares of land indicate that higher levels of biomass (downed logs and branches, shrubs, and older larger denser trees) are associated with *less severe* wildfire.[68]

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[64] Franklin (2013) p. 7 and Odion (2014)

[65] Bradley et al., 2016

[66] (Weatherspoon and Skinner, 1995)

[67] Erman et al, 1997

[68] Bradley et al 2016

- In light of this, why not retain all large down wood on the land, and leave the canopy to protect the moist, cool and calmer microclimate associated with moderated fire behavior?

- More recent evidence suggests that rather than being all "open and parklike" historical forests were comparable to the density of today's forests.[69]

- In O'Brien (2020), he states, "Research shows that thinning operations have little effect on surface fuel loads or intense fire severity is typically associated with higher fire intensities[70], and that fire weather and climate are better predictors of burn area and intensity than fuel loads or biomass densities[71]. A tragic example of this lies in the 2018 Camp Fire, which burned through previously thinned and burned forest at unprecedented rates, fueled primarily by strong dry winds.[72] Post-fire photos show that the more densely forested areas burned with less severity and remained mostly intact despite being next to homes that were burnt to the ground. The loss of homes and businesses is one of the costliest types of economic loss associated with wildfire, for example, the capital loss from the Camp Fire is estimated to have cost $3 billion while the total cost of all the 2018 fires is estimated to be approximately $150 billion[73]. **Research shows that vegetation and forest management beyond 100 feet from homes does little to nothing to protect structures.**[74]"

- The EA states repeatedly that he goal of mechanical thinning is to "reduce the risk of severe wildfire." Yet best practices guidance[75] describe historical conditions in this type of forest as including severe wildfire as part of a mosaic of mixed severity wildfire: "*Extensive surveys from the late 1800's describe dry ponderosa pine and mixed conifer forests in eastern Oregon… extensively marked by the effects of low and mixed severity fire with infrequent and typically small scale (<1000 acre)* ***high fire effects"*** *(p. 93)*

- P. 97 of Franklin et al (2013) describes the nature of historical stands as *"open pine forests that a person could easily ride through in a horse or wagon;* ***such conditions were common but not universal." What measures is the Forest***

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[69] (Baker, 2014, Baker et al 2018, Williams and Baker, 2012)

[70] (Weatherspoon, 1996; Cruz et al., 2014; Thompson et al., 2007; Banerjee, 2020)

[71] Stephens and Moghaddas, 2005; Abatzoglou and Kolden, 2012; Jolly et al., 2015; Sieg et al., 2017; Zald and Dunn, 2018; Williams et al., 2019; Hart and Preston, 2020)

[72] John Muir Project, 2018

[73] Wang et al., 2020)

[74] Syphard et al. 2014

[75] Franklin et al (2013)

Service taking to allow for dense areas of forest to remain and a heterogeneity on the landscape?

- ***Where does this all stop? Do we forever need to "manage" forests now? How long will we continue to prioritize logging the forest over protecting communities? How long will we try to compensate for vulnerable, tinder box communities by hacking away at the forest, the best chance we have for carbon level stabilization?***

- ***Maybe the answer is to stop wasting billions of dollars on fire suppression and logging subsidies and instead spend billions of dollars on community fire proofing, defensible space, evacuation plans, and helping communities weather the fire storm when it comes***

- Given that mixed intensity fire (including high intensity fire) combined with a higher number and proportion of large trees, is characteristic of historic east side pine forests, and is a necessary prerequisite for the creation of snag habitat for several species, should we not be increasing not decreasing mature trees?

- Given that firefighters are often prioritized to engage in structure defense around communities, and given that fuel loads around houses, structure ember vulnerabilities are still very much a problem and may threaten the safety of fire fighters lives, if the priority is ensuring as safe an operating environment for fire fighting personnel as possible, shouldn't the priority be community and structure defense not logging projects far away from communities? And before you say "we have no jurisdiction on private lands" your remit is to keep forests healthy and people and communities safe. The resilience of communities is tied to the forest and visa versa. If it is truly an "emergency" then surely community hardening should come first.

- Indeed, key research (including recent studies) cited by O'Brien (2021) indicate:

- **Thinned forests are associated with *higher fire intensities.*[76]**

- ***Fire weather and climate are better predictors of burn area and intensity* than fuel loads of biomass densities.[77]**

- ***Vegetation and forest management beyond 100 feet from homes does little to nothing to protect structures.*[78]**

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[76] (Weatherspoon, 1996; Cruz et al, 2014, Thompson et al, 2007, Banerjee, 2020)

[77] (Stephens and Moghaddas, 2005, Abatzoglou and Kolden, 2012; Jolly et al, 2015; Sieg et al, 2017; Zald and Dunn, 2018; Williams et al, 2019; Hart and Preston, 2020)

[78] Syphard et al, 2014

- The proposed action has the potential to reduce bald eagle habitat by cutting large trees and removing them from the landscape. This species habitat is already degraded with far fewer large trees on the landscape than historically.

- What evidence is there that high intensity fire as part of a mixed intensity fire regime harms rather than benefits bald eagle nesting habitat?

- Why is this project reducing/ eliminating spotted owl habitat by reducing canopy cover to levels below that which is favored by the spotted owl? How is this "beneficial to the landscape" and how were these contradictory effects weighed as far as importance relative to each other? Goshawk nesting habitat could be reduced below the minimum threshold of suitability These plans are too extreme and would significantly impacts forest habitat in the area.

- What is the evidence that mixed or high intensity fire impacts spotted owl in a negative rather than a positive way given that this was the dominant fire regime in the area for millions of years and the owls evolved in these conditions?

- Northern goshawks also require a *"closed canopy for protection and thermal cover."* Why is the canopy being reduced given all these local species who require closed or near closed canopy forests? Northern goshawks require canopy covers greater than 60% for nesting. Again, an EIS is needed given the extensive treatment proposed, accelerated public process, and rich diverse wildlife who depend on this area.

- Bats are resilient to high intensity fire along with most of the native inhabitants of our area, and even benefit from additional prey and roosts available after a fire. Trying to prevent fire in this ecology and trying to engineer the forest as a replacement to fire are fool's errands.

- Please provide evidence that "stand replacing, high intensity wildfires" are not just a natural part of succession of the forest, and have occurred when conditions were right for millions of years.

- The project claims to increase forest resilience but this does not sound like a resilient forest:

    - ***"mastication can create surface fuels that can persist for many years and contribute to increased rates of fire spread and residual tree mortality during wildfire events."***

- Please provide scientific evidence/ studies that this area is only historically accustomed to low intensity fire.

-Please provide evidence that high intensity fire events are "unprecedented" in the long ecological history of our area, as these would have wiped out sensitive forest dwelling species according to the EA analysis.

“Among three categories of uncut or partial-cut stands, they found that uncut stands (with no treatment of natural fuels) suffered the least fire damage, followed by partial-cut stands with some fuel treatment; partial-cut stands with no treatment had the most damage. The fact that partial-cut stands with no fuel treatment experienced more damage than partial-cut stands with some fuel treatment is no surprise. One might wonder, however, why the uncut stands experienced less damage than the partial-cut and treated stands. The explanation probably lies in a combination of the following factors:

• The partial cuttings created a warmer, drier microclimate compared with that of the uncut stands—an inevitable effect of cuttings”

(https://pubs.usgs.gov/dds/dds-43/VOL_II/VII_C44.PDF)

“As expected, higher fuel loadings and fuel depths after harvest led to a greater fire behavior in the post-harvest stand. Figure 1 illustrates the effect of increasing winds on rate of spread and flame length before and after harvest as compared to Fuel Model 8, a timber type characterized by a closed canopy and litter understory. Before the harvest, potential fire behavior would be fairly benign. However, after harvest, both the potential rate of spread and fire intensity increase dramatically, leading to a significantly greater fire hazard.”[79]

For example, in a recent opinion on a proposed forest restoration project, US State Court of Appeals for the Ninth Circuit Judge Graber wrote, “The project’s proposed methodology of variable density thinning is both highly controversial and highly uncertain.” (*BARK* et al. *v. U.S. Forest Service*. No. 3:18-cv-01645-MO)

Where canopy thinning results in augmented surface fuels, fire behavior and severity can be amplified rather than diminished[80].
Uncertainty in the scientific literature about forest management and fuel treatments is commonly cited in planning process-public comment periods.[81]

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[79] (https://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1032&context=nrm_fac)

[80] (Safford etal. 2009, Prichard etal. 2010 https://esajournals.onlinelibrary.wiley.com/doi/10.1002/eap.2433

[81] Spies etal. 2018, Miller etal. 2020

Because most of the standing biomass in high productivity forests occurs in live trees, when these forests burn, relatively low levels of carbon are initially emitted, with most of the biomass retained either in standing trees and snags or to newly downed heavy fuels that slowly release carbon to the atmosphere through decomposition, unless they subsequently burn in a reburn fire event.[82]

The strategy to actively suppress fire is a highly consequential active management prescription, with surface and canopy *fuel accumulation* as a consequence. Continued forest infilling and fuel accumulation predisposes forests to high-severity fire when fire inevitably returns[83]. Thus, fire suppression increases fire intensity as well as climate conditions brought on by carbon forcing.

C-2:

A change to the Forest Plan to modify canopy cover and basal area restrictions in portions of mature forest … better emulate historic tree stand densities, which were much lower than they are in the present day, promote vigorous tree growth by reducing competition, and **reduce extreme fire behavior under current and future climatic conditions** (North et al. 2022).

Thinning forests may decrease fire intensity but also increase rates of spread during critical phases of initial attack under certain conditions[84]. This is particularly relevant in the "WUI" zones.

https://www.nature.com/articles/s41598-020-74338-9

"The reduction of midstory and understory vegetation does not drive fire behavior in isolation. Depending upon the seasonality and fuel conditions, midstory vegetation can increase wind drag lowering wind speeds or increase fuel moisture, which each can slow fire spread or reduce intensity. Thus, to evaluate the efficacy of fuel treatments, fuel structure alone is insufficient to understand how treatments will alter future wildfire spread and suppression success[85]. To this effect, Bessie and Johnson[86] determined that local weather conditions, especially factors governing fuel moisture and wind speed are stronger indicators to determine fire behavior in vegetative fuel beds compared to stand age or species composition[87]. Keyes and Varner[88] recognized that higher wind speeds

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82 Stenzel etal. 2019, Lutz etal. 2020

83 North etal. 2015*b*

84 14,15,16,17,18

85 18,27,28,29,30,31,32,33,34,35,36,37,38,39

86 40

87 41,42

88 43

and turbulence in the sub canopy after thinning treatment might lead to higher mid-flame wind speeds, enhanced rates of spread and erratic fire behavior. Varner and Keyes[26] highlighted the importance of variations of fuel moisture and wind adjustment factors post fuel treatment in influencing fire spread and intensity. Moon et al.[44] studied sub canopy wind variations under a variety of fuel structures and called for further research into fire behavior under fuel treatment scenarios which incorporates the changes in wind among other factors post treatment."

Commercial timber harvest increases surface fuel loads and fine woody fuels that rapidly dry and easily combust when exposed to fire (Weatherspoon 1996; Dicus 2003; Stone et al 2004).

Weatherspoon writes, **"Thinnings, insect sanitation and salvage cuts, and other partial cuttings add slash, or activity-generated fuels, to the stand unless all parts of the tree above the stump are removed from the forest. Small trees damaged by harvest activities but not removed from the forest often add to the fuel load. To the extent that it is not treated adequately, this component of the total fuel complex tends to increase the probability of a more intense, more damaging, and perhaps more extensive wildfire."**

This has direct impacts on community safety. It is not clear how long the lag time is between excess fuel accumulation being produced and pile burning or removal. Many piles and logging debris accumulated years ago still remain in the forest and increase dry flammable material. If these activities take place during or prior to a dry spell, such a large operation may significantly increase fire risks to nearby residents.

- Larger trees tend to have thicker bark and higher lower branches which keeps wildfire from entering the canopy where it can more easily cause tree mortality. (Douglas et al. 2010) Older conifers with large furrowed ridges in their bark are adapted to survive mixed intensity wildfire.

Smokescreen: Chad Hanson

p. 46: "No matter how many billions of dollars we spend to try to manage vegetation in remote areas, we cannot stop or curb fires."

p. 63: "In the western US, groups of researchers using different methods have consistently found that there is less high intensity fire now than there was before fire suppression." (Dennis C. Odion et al, examining historical and current mixed severity fire regimes….2014)

p. 187:

"There are two diametrically opposed approaches to wildland fires and community protection: the "from the wildlands in" approach, and the "from the home out" approach. The former, which has dominated the response to wildland fires for decades and

continues to do so, is characterized by a primary emphasis on fire suppression and vegetation management, including logging and destruction of native chaparral (shrub habitats), in wildlands that are distant from communities. The basic assumption is that these tactics will limit or stop fires before they reach towns. This "from the wildlands in" paradigm, which prioritizes logging and addresses community safety indirectly, as an afterthought, is degrading wildlife habitats, removing large amounts of carbon from forest ecosystems, worsening climate change, and largely ignoring glaring risks to communities. In short, it is leading to massive losses of homes, and it is getting people killed."

p. 192:

" The US Forest Service issued a decision in 2011 to log more than 1500 acres of public land adjacent to Paradise and Concow, ***explicitly telling the communities that this would protect them from a future fire****." [89]*

(We know how that turned out)

Recreation

- ***The loss of benefit to the public and environment in terms of recreation, water quality, carbon sequestration, ecosystem services, habitat loss, and ecosystem degradation, and we have to pay $650 million while the USFS and timber companies profit?*** **How much are timber companies going to earn from the CPP project?**

- Individuals with severe sun sensitivity may be precluded from visiting previously dense areas of forest adjacent to communities impacting personal and community health.

- We question the methodology and relevance of the "VQO" analysis.

- It is not acceptable that access would be decreased in the area for hiking, cycling and equestrian use.

- Dead or dying tree stands, though they may be "unattractive" to visitors are also critical to wildlife habitat and serve to educate visitors on the cycle of birth, death and rebirth in the forest. In addition, wildlife viewing is one of the biggest draws to the lake. Snags or standing dead trees are in deficit on the landscape so we actually need more of them. Can't have the wildlife if you don't have the habitat.

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[89] *US Forest Service, Concow Hazardous Fuels Reduction Project, Final Environmental Impact Statement and Record of Decision" (Oroville, CA: Feather River Ranger District, 2011*

Herbicides

We strongly object to the use of toxic herbicides in the forest. Given that these areas subject to treatment are very close to communities and many of those homes depend on wells for their water usage needs, and given the planned application of water soluble herbicides that are known to contaminate ground water, and also given the large, possibly unprecedented quantity of herbicides planned to be used (over $30 million in *every alternative*) the scale of the chemical application alone should trigger an EIS. The cumulative impacts of herbicide application **on this scale** may be unprecedented and requires separate analysis.

Existing research suggests glyphosate toxicity to microorganisms in the gut and soil has been underestimated and that existing dosage standards and regulatory frameworks are inadequate. This could have devastating long term consequences in the project area unless impacts are more carefully studied. Herbicide use could also interfere with conifer regeneration.

One study stated:

"Long-term glyphosate effects have been underreported, and new standards will be needed for residues in plant and animal products and the environment.[90]"

Other studies have found that regulatory frameworks are inadequate to protect the public and wildlife.[91]

Research has found extensive glyphosate contamination of water wells with severe health consequences for communities. (Rendón-von Osten et al, 2017)

The EA provides no amounts— even estimated amounts—of herbicides proposed to be used as part of the project — this data is necessary for the public to gauge the impact on these known toxic chemicals.

The EA also does not consider the extensive possibilities of cross contamination between treated vegetation and animals eating and spreading the chemicals across the landscape, including through feces as has been documented. Bears can eat a large quantity of vegetation in one night and unfortunately cannot read pesticide warning signs. In our area, bears regularly come from the forest into communities where they eat garbage and poop (which is full of plastic from people's garbage). This feces has the potential to contaminate yards, wells, etc. if bears eat vegetation (such as large amounts of manzanita berries which they do in the fall) which has been treated, there is

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[90] Bruggen et al, 2021

Vandenberg et al, 2017

the real potential to significantly contaminate nearby communities (not to mention the bears).

It is not clear what the quantity of herbicide, or relatively how much herbicide and personnel costs that would be allocated to destroy native shrubs vs. so-called “invasive” species. These are significantly different purposes so it would be helpful to have a breakdown.

The report from a May 2016 joint meeting on pesticide residues between the United Nation's Food and Agriculture Organization (FAO) and the WHO clearly acknowledges "evidence of a positive association between glyphosate exposure and risk of NHL" (non-Hodgkin lymphoma).

Garlon

https://d3n8a8pro7vhmx.cloudfront.net/ncap/pages/26/attachments/original/1428423464/triclopyr.pdf

The active chemical ingredient in Garlon is triclopyr. Acute exposure symptoms include, but are not limited to, difficulty breathing, lethargy, incoordination, weakness, and tremors, as well as skin sensitization, increasing subsequent exposure symptoms. In lab animals an increased incidence of breast cancer, kidney damage, various reproductive problems, and genetic damage, was observed. Triclopyr's breakdown product 3,5,6-trichloro-2-pyridinol (TCP) disrupts nervous system development, and in lab tests, it accumulated in fetal brains when exposed during pregnancy.

Triclopyr also causes complex ecological impacts, including, but not limited to, interfering with nitrogen cycling, and inhibiting the growth of beneficial mycorrhizal fungi that aid nutrient uptake in plants. It has been observed to reduce the diversity of mosses and lichens. The breakdown product TCP is toxic to soil bacteria. Triclopyr is mobile and persistent in soil, has contaminated wells, streams, and rivers, and has the potential to contaminate ground water. Increased growth of algae has been observed after triclopyr applications. It is highly toxic to fish, affects oyster larvae, and disturbs frog behaviors that help them avoid predators. It also decreases the survival of bird nestlings, is toxic to spider mites, and affects other beneficial insects and spiders by killing plants they depend on for food and shelter.

Glyphosate has been shown to be an endocrine disruptor (see http://www.ncbi.nlm.nih.gov/pubmed/19539684

The "acceptable risk" this methodology refers to are real people like myself, who have been injured and disabled by pesticide exposures previously, and others who are particularly vulnerable to the effects of poisoning, and I take personal offense at this approach. Loss or reduction of profits of the agencies involved is never deemed a "negligible" or "acceptable risk".

The polar opposite approach to Risk Assessment is the Precautionary Principle, which essentially makes decisions on the basis of "better safe than sorry", and puts the burden of proof that an action is truly safe on those who propose it, instead of on the potential or actual victims of the action.

Fire danger

Pesticide use is also contradictory with the watershed plan's stated goal of reducing fire danger. Herbicides increase the flammability of vegetation, and may themselves be flammable.

The manufacturer's Material Safety Data Sheets (MSDS) for various pesticides in EBMUD's arsenal indicate that these chemicals are fire hazards, and produce toxic fumes when they do burn. Some are mixed with carrier oils that may contribute further to their flammability and toxicity.

The warning that toxic vapors will be released if involved in a fire is very common for pesticide products, as such chemical use in fire prone areas is particularly irresponsible. (Pesticide labels and MSDS can be found here: http://www.cdms.net/LabelsSDS/home/)

Experiments by community activists also show that herbicides in general make vegetation more flammable than vegetation that was not exposed to herbicides (http://www.dontspraycalifornia.org/Cheriel Response.html).

The EPA approved labels for Fusilade DX and Fusilade II (which both contain 24.5% fluazifop-P-butyl, the active ingredient) state that it can contaminate groundwater through leaching, and has “a high potential for reaching surface water via runoff for several months or more after application.”

Please refer to attached documentation related to known herbicide risks and damage to ecology:[92]

“Aminopyralid persists in soils with a half-life ranging from 32 to 533 days, with a typical time of 103 days. It is soluble in water and has moderate to high mobility with the ability to leach through soils and possibly contaminate groundwater.” (beyondpesticides fact sheet)

“Third, the DEIR improperly downplays and ignores the harms associated with Milestone (active ingredient aminopyralid (triisopropanolammonium salt)) and Transline (active ingredient clopyralid (monoethanolamine salt)). According to the EPA approved labels for these products, the urine and manure of animals that consume plants treated with these chemicals can cause unintended plant damage, as the pesticides concentrations in the animal waste remain high enough to cause damage. Thus, foliar applications of Milestone (which can also make poisonous plants more palatable to grazing animals) and Transline can be consumed by grazing deer (or goats brought in

[92] July 8th, 2015 Letter from Law Offices of Stephen Volker to Marin County Parks Dept.

for fuel management), and then eliminated, without regard to application precautions to protect sensitive habitats and resources. As Milestone poses a significant risk to aquatic amphibians, and can make even poisonous plants enticing, it should not be included

Id. Cox and Surgan note that:
1) "Peixoto (2005) found that a glyphosate formulation caused a significant reduction in the activity of rat liver mitochondrial respiratory complexes in vitro but that glyphosate alone had no effect." Citing F. Peixoto, Comparative effects of the Roundup and glyphosate on mitochondrial oxidative phosphorylation. Chemosphere. (2005); 61:1115–1122.

2) "In vitro treatment of human lymphocytes with glyphosate and a glyphosate formulation resulted in a significantly higher rate of induction of sister chromatid exchange by the formulated product (Bolognesi et al. 1997). Both the formulation and glyphosate increased micronucleus formation in mouse bone marrow; the increase was "more pronounced" with the formulation." Citing C. Bolognesi, et al, Genotoxic activity of glyphosate and its technical formulation Roundup. J Agric Food Chem (1997);45:1957–1962.

3) "Inert ingredients may enhance the reproductive toxicity of active ingredients. Both the herbicide glyphosate and a glyphosate formulation were toxic to human placenta cell cultures (Richard et al. 2005). However, the formulation was significantly more toxic than glyphosate alone; the median lethal dose for the formulation was half that of the active ingredient." Citing S. Richard, et al, Differential effects of glyphosate and roundup on human placental cells and aromatase, Environmental Health Perspectives (June 2005); 113(6):716-20.

4) "In one study, a glyphosate-containing herbicide formulation inhibited progesterone production in vitro in mouse Leydig cells, but glyphosate did not (Walsh et al. 2000)." Citing Walsh LP, McCormick C, Martin C, Stocco DM. Roundup inhibits steroidogenesis by disrupting steroidogenic acute regulatory (StAR) protein expression. Environmental Health Perspectives 2000;108:769–776.

5) "Richard et al. (2005) noted that a glyphosate formulation inhibited the activity of human placental cell aromatase, which converts androgens into estrogens. Again, glyphosate alone did not inhibit the activity of this enzyme." Citing S. Richard, et al, Differential effects of glyphosate and roundup on human placental cells and aromatase, Environmental Health Perspectives (June 2005); 113(6):716-20.

6) "Toxic effects of some pesticide formulations on fish can be increased by the inert ingredients. One of the most commonly known examples is glyphosate; some formulations are 10–100 times more acutely toxic to fish than is the active ingredient alone (U.S. EPA 1993)." Citing U.S. EPA 1993. Registration Eligibility Decision (RED): Glyphosate. Washington, DC:U.S. Environmental Protection Agency. Available at: http://www.epa.gov/oppsrrd1/REDs/old_reds/glyphosate.pdf [accessed July 7, 2015].

7) "Howe et al. (2004) found that exposure of Rana pipiens tadpoles to environmentally relevant concentrations of glyphosate formulations reduced size at metamorphosis but increased time to metamorphosis, frequency of tail damage, and frequency of abnormal gonads. Glyphosate alone did not have these effects." Citing Howe CM. Toxicity of glyphosate-based pesticides to four North American frog species. Environ Toxicol Chem. 2004;23:1928–1938.
8) " Everett and Dickerson (2003) found that a glyphosate formulation was 100 times more toxic to ciliated protozoans than glyphosate." Citing Everett KDE, Dickerson HW. Ichthyophthirius multifilis and Tetrahymena thermophila tolerate glyphosate but not a commercial herbicidal formulation. Bull Environ Contam Toxicol. 2003;70:731–738. "

THESE ARE NOT "REMOTE" FORESTS— the work in the WUI areas is — by definition— close to "urbanized" areas. $30 million in herbicides across 200,000 acres is a huge and probably unprecedented amount.

Toxic Legacy: Stephanie Seneff

p.25: Glyphosate is water soluble and persistent in the environment. In one study, more than two years after a glyphosate application, more than 59% of the glyphosate was still present in the soil.[93]

p. 33: It's not only lethal: Glyphosate negatively affects honeybee learning, cognitive and sensory abilities.[94] This presumably applies to the western bumblebee who could be badly harmed by polluted nectar and vegetation.

p.35 Glyphosate is highly toxic to frogs, including those threatened and endangered frogs analyzed in the EA. In one study, 96 to 100% of tadpoles in a pond sprayed by glyphosate died. More than 79% of frogs and toads on land died *in one day*.[95]

Fusilade DX (and Fusilade II), Garlon 3A, Garlon 4 Ultra, Milestone, Transline, and Triclopyr 4E all risk contaminating groundwater, according to their EPA approved labels.

Veined water lichen is found in cold, unpolluted streams in mixed conifer forests. It is in decline throughout its historic range. Threats to this species include activities that change the water chemistry, alter the stream channel, or significantly alter the riparian

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[93] Bergstrom et al: Laboratory and Lysimeter Studies of Glyphosate https://doi.org/10.2134/jeq2010.0179

[94] Farina et al, Effects of the herbicide glyphosate on honey bee sensory and cognitive abilities and disrupts the honeybee microbiome. doi.org/10.3390/insects10100354 / Motta et al "Glyphosate perturbs the gut microbiota of honey bees"

[95] Relyea, Rick Lethal Impact of Roundup on Aquatic and Terrestrial Amphibians doi.org/10.1890/04-1291 https://esajournals.onlinelibrary.wiley.com/doi/abs/10.1890/04-1291

vegetation. Extensive herbicide use and sedimentation proposed in this project threaten veined water lichen and other sensitive stream species.

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E-mail communication from Ryan Bauer dated July 14th, 2023:

Hi Josh,
None of the documents were edited; however, we added some additional documents to the project website at the request of interested parties.
Specifically, geospatial data used during the planning phase of the project was uploaded to the project website.

As far as your question about project size, the Travel Management analysis was larger in scope, however, **this is the largest wildfire mitigation project that the Plumas National Forest has undertaken to my knowledge**. Other National Forests have undertaken similar, very large landscape projects, but I don’t have a lot of information on those projects.
Thanks,
Ryan

Addl. Problems with USFS Protection Project

These are some of the problems we have identified with the Community Protection Project. Quoted sections are direct quotes from the Environmental Assessment:

- Would alter the existing Plumas National Forest plan (that includes minimum forest canopy cover and protections for the red-legged frog and spotted owl) without even as much as a public meeting (or even a press release.)
- Helicopter logging is authorized to reach road inaccessible locations.
- Reduces canopy cover to less than 23% (down from near 100% in some areas)
- Permits toxic herbicide applications including in spotted owl nesting territory. $30,039,100 in herbicide applications would be used on 201,619 acres in all alternatives. Herbicides would be used to kill native shrubs that are critical habitat

for many species. No information is provided on the quantity of each herbicide to be used. *Bumblebees and monarchs exposed to herbicides while foraging*

- *The EA describes mechanical logging that results in up to 75% or more canopy reduction and would dry out forests and prime them to burn. Best practices recommended by the USFS publication "**Restoring Dry Forests in Eastern Oregon**" (which is similar to our climate) calls for less than a 25% reduction in canopy for eastside pine forests.* Franklin et. al (2013)
- The Forest Service analysis models flame lengths that are predicted for each alternative but fails to provide similar modeling estimates for fuel moisture, humidity and wind speed, leaving the public with an incomplete and unbalanced view of the impacts of the proposed project.
- The proposed project includes more than 31,478 acres burned during recent fires. There is no realistic plan for re-forestation following proposed salvage logging. Our forests are already imperiled, so heavy-handed management would likely push them to the brink.
- There is inadequate explanation of how this treatment plan differs from treatments in the past that were "problematic." How will forest structure change relative to past treatments that are associated with fire spreading into towns?
- Changes in microclimates and reduced forest resiliency would threaten communities and imperil wildlife.
- Treatments would have wide ranging impacts on forest dwelling species including across 31,168 acres of known sensitive bird nesting areas: *"disturbance, abandonment, or removal of California Spotted Owl and Northern Goshawk nests."*
- The Forest Service claims that wildfire impacts to many sensitive species in the "no action" alternative would outweigh the impacts from herbicides and logging that would allegedly reduce the threat of wildfire, which is speculative and without evidence. Animals and plants evolved with wildfire- they did not evolve with feller bunchers and round up.
- "Removal of large trees…. could result in inadvertent loss of bald eagle nest trees*."*
- *"Some mature forest habitats could be modified to such a degree that these habitats would no longer exhibit mature forest characteristics…"*
- If forest densities in the past were supposedly so low, then why are almost all the sensitive species adapted for dense forest environments? *"All three bat species are clutter adapted foragers (ie species adapted for flight and foraging in cluttered habitats…")*
- *Treatment activities that result in removal of large trees…could result in inadvertent loss of ….bat roost trees"*
- *Up to "40% reduction in mature forest habitat in the project area" (mature forests are more fire resistant and carbon sequestering). Mature forest (4D and 5D) habitat reduced by 73%. "For alternatives 1 and 2 there would be substantial reduction in mature forest habitat in the Project area."*
- *"Decreased occupancy and suitable habitat in the short term will be 'offset' by the long term benefit of reduced high severity fire potential in the Project area. There is no evidence provided for this.*

- *“Decreased connectivity of suitable habitat” for Pacific Martens and Fishers.*
- *“High severity fire…has led to the 43% loss of suitable mature forest habitat” (this project would reduce mature forest in the project area by nearly the same amount)*
- *No (crucial for wildlife) snags retained in the eastern portion of the project.*
- *“PNF has determined that the project… is likely to adversely affect California Red-Legged frog, foothill Yellow-Legged frog, and Sierra Nevada Yellow-Legged Frog”*
- *“Project implementation may harm sensitive plants by creating more disturbance than they can tolerate…creating conditions of higher temperatures, excessive light and drying…..” (which also lead to higher wildfire risks)*
- *“Could degrade conditions on the forest floor and in the broader watershed”*
- *“The state of the science however makes it infeasible to develop reliable, quantified estimates of potential long term changes in GHG emissions or carbon sequestration that may result from these treatments over time….research presents….inconsistent findings regarding the effects of treatments on the long term carbon emission or sequestration of forested lands. (if the FS cannot demonstrate that the proposed project will improve— rather that worsen— future climate impacts then the project should not be done.)*
- *The Environmental Assessment fails to consider whether recent extreme wildfire activity, subsequent salvage logging and an extreme county spanning logging plan might have unforeseen, cumulative impacts.*
- *The Forest Service estimates that Alternative 1 of the Community Protection Project will result in approximately six million metric tons of CO2e emitted into the atmosphere over the next ten years.*
- *The Forest Service falsely implies that forest treatments can reduce the need for home hardening : “…the Project would provide wildfire protection benefits to local populations..”*
- This Project is not just removing small trees and brush. The FS is proposing to remove many trees that are 30” in diameter. This is ***almost seven feet*** around. Trees this size are often more than 100 years old, more fire resistant than younger trees and exactly what need to be preserved to mitigate the climate crisis.