

Gavin McCabe November 6, 2020

Chair

Compliance Offset Task Force

California Air Resources Board (CARB)

[OffsetTaskForce@arb.ca.gov](mailto:OffsetTaskForce@arb.ca.gov)

**RE: Comments on the Avoided Wildfire Emissions Protocol**

Dear Chair McCabe and Members of the Compliance Offset Protocol Taskforce,

The Environmental Protection Information Center (EPIC) respectfully submits the following comments on the October 7, 2020 Compliance Offsets Protocol Task Force Initial Draft Recommendations (draft recommendations) prepared by the Compliance Offset Protocol Taskforce (taskforce). As discussed in more detail below, the forestry subgroup’s discussion of the Avoided Wildfire Emissions Protocol (protocol) beginning on page 97 of the draft recommendations lacks a sound scientific basis. While we recognize that the protocol is listed as a non-consensus item, we believe it is important to provide comment on the protocol's misleading science. Moreover, upon full consideration of the scientific literature on the subject, we believe the protocol directly conflicts with California’s climate goals.

1. The Avoided Wildfire Emissions Protocol is Based on an Uncertain Prediction of Future Events

Chapter 3, Section V, subsection C of the draft recommendations describes the Avoided Wildfire Emissions Protocol project as “selective mechanical thinning and fuels reduction and use of by-product materials for wood products and bioenergy; and/or use of prescribed fire” in order to avoid wildfires and their accompanying emissions.[[1]](#footnote-1) The fundamental assumption of the protocol is that the amount of emissions generated by fuels reduction will be less than the amount of emissions that would be generated by wildfires absent fuel reduction. The forest subgroup’s analysis misleadingly claims that any uncertainty about the realization of that goal can be quantified and accounted for. But if that assumption were to prove false, implementation of the protocol would actually increase carbon emissions.

The protocol assumes that California will increase fuel thinning considerably over the next decade in order to prevent wildfires. The protocol “conservatively” calls for increasing the current baseline treatments from 130,000 acres per year to 1,500,000 acres per year.[[2]](#footnote-2) This greater than 10-fold increase in fuel thinning treatments is purportedly justified by an accompanying increase in overall carbon storage. However, that claim is not supported by multiple scientific studies.

Fuel thinning both reduces current standing carbon stocks as well as reduces the forest’s future rate of carbon sequestration by removing trees that otherwise would have continued to grow and remove CO2 from the atmosphere.[[3]](#footnote-3) The protocol admits that “[t]here is initially a carbon deficit due to the fuel reduction.”[[4]](#footnote-4) However, the protocol assumes that the initial deficit will be made up for by forest regrowth and future avoided wildfire emissions. Because the carbon credits are based on these uncertain future outcomes, it is vital to the credibility of the protocol that these assumptions be supported by unassailable science. Despite this, the draft recommendations fail to discuss multiple scientific studies that call into question these assumptions.

1. Many Scientific Studies have found that Fuel Thinning to Avoid Wildfires Will Actually Increase Net Emissions of Carbon

Campbell et al. (2012) determined that thinning forests to avoid high-severity fire would reduce stored forest carbon and increase overall carbon emissions.[[5]](#footnote-5) Because the chance of a fire burning on any given acre of forest is low, forest managers must treat many more acres than will ever actually burn.[[6]](#footnote-6) This causes thinning to end up removing more stored carbon than would be released by fire in most years.[[7]](#footnote-7) The study concluded that “we found little credible evidence that such efforts [fuel reduction treatments] have the added benefit of increasing terrestrial C stocks” and “more often, treatment would result in a reduction in C stocks over space and time.”

Chiono et al. (2012) analyzed the carbon balance of thinning and prescribed fire treatment scenarios in the Sierra Nevada compared to a no treatment scenario.[[8]](#footnote-8) In all of the fuel treatment scenarios they analyzed “treatment related emissions exceeded the avoided wildfire emissions conferred by treatment.”[[9]](#footnote-9) Their study concluded “[d]ue to the significant emissions associated with treatment and the low likelihood that wildfire will encounter a given treatment area, forest management that is narrowly focused on C accounting alone would favor the no-treatment scenarios.”[[10]](#footnote-10)

Campbell and Ager (2013) assessed the long-term impact of fuel treatment on the carbon balance of fire-prone forests, by simulating long-term landscape-wide carbon stocks under a wide range of conditions.[[11]](#footnote-11) The study concluded “[t]he notion that thinning and prescribed burning of such forests have the added benefit of increasing long-term carbon stocks through the reduction of wildfire mortality and combustion is not supported by our modeling exercises” and that “our sensitivity analysis suggests that no level of treatment results in more system-wide carbon than a completely untreated landscape, even in cases where treatment is presumed to be extraordinarily effective and efficient at minimizing wildfire effects.”[[12]](#footnote-12)

Mitchell et al. (2009) studied the effects of fuel thinning on the long-term carbon dynamics of three Pacific Northwest forest ecosystems. They concluded that fuel reduction treatments would “come at the cost of long-term C storage” in 2 of the 3 forest ecosystems.[[13]](#footnote-13) Similarly, Clark et al. (2011) found that thinning operations resulted in a net loss of forest carbon stocks for up to 50 years after the treatment in forests in Oregon.[[14]](#footnote-14) And a review of forest carbon management by Law and Harmon (2011) concluded that “[t]hinning forests to reduce potential carbon losses due to wildfire is in direct conflict with carbon sequestration goals, and, if implemented, would result in a net emission of CO2 to the atmosphere because the amount of carbon removed to change fire behavior is often far larger than that saved by changing fire behavior, and more area has to be harvested than will ultimately burn over the period of effectiveness of the thinning treatment.”[[15]](#footnote-15)

These studies are just a highlight of the science that has called into question avoided wildfire emissions protocols. For a discussion of additional GHG emissions problems associated with the combination of fuels reduction and bioenergy see DellaSala and Koopman (2015).[[16]](#footnote-16) In addition, considerable scientific research has concluded that bioenergy, which is an integral part of the protocol, can have long lasting climate impacts.[[17]](#footnote-17)

1. Given the Fact that the Considerable Scientific Evidence Does Not Support the Underlying Assumptions of the Avoided Wildfire Emissions Protocol, the Taskforce Should Reject the Protocol.

The forestry subgroup’s analysis of the avoided wildfire emissions protocol failed to consider any of the above studies which contradict the efficacy of the protocol. Instead, their analysis paints a rosy picture of the impacts the avoided wildfire emissions protocol would have on California’s emissions. The forestry subgroup also considered the protocol even though this methodology was rejected by the American Carbon Registry (ACR) in 2019 because of its concerns about the probability of success of the protocol in reducing GHG emissions.[[18]](#footnote-18) ACR rejected the protocol for several reasons including (1) the fact that GHG credits would be issued prior to achieving hypothetical emissions reductions, (2) the initial increase in GHG emissions above the no project baseline, (3) high GHG emissions risk due to the large treatment area, and (4) the use of models “that rely on uncertain and probabilistic wildfire ignition and wildfire behavior.”[[19]](#footnote-19)

The Air Resources Board regulations for offset credit requirements state that a registry offset credit must “[r]epresent a GHG emission reduction or GHG removal enhancement that is real, additional, quantifiable, permanent, verifiable, and enforceable.”[[20]](#footnote-20) This is vital because “[p]hony tons, or tons not strictly enforced, only serve to undermine and discredit the entire program and further accelerate climate change.”[[21]](#footnote-21) The protocol asks us to trust that hypothetical avoided emissions will offset the real and quantifiable emissions that will be produced by aggressively thinning California's forests. But that assumption is not supported by considerable scientific evidence. Given this fact, it is imperative that the Taskforce reject the Avoided Wildfire Emissions Protocol in the strongest terms. To do otherwise would be to seriously set back California’s climate goals.

Thank you for giving us the opportunity to provide comment on this important issue. Please contact Matt Simmons at [matt@wildcalifornia.org](mailto:matt@wildcalifornia.org) if there are questions concerning our comments.

Sincerely,

Matt Simmons

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1. Air Res. Bd., *Compliance Offsets Protocol Task Force Initial Draft Recommendations* 99 (Oct. 7, 2020) [hereinafter *Draft Recommendations*]. [↑](#footnote-ref-1)
2. *Id.* at 102. [↑](#footnote-ref-2)
3. Bjart Holtsmark, *The outcome is in the assumptions: analyzing the effects on atmospheric CO2 levels of increased use of bioenergy from forest biomass*, 5 GCB Bioenergy 467-473 (2012). [↑](#footnote-ref-3)
4. *Draft Recommendations*, supra note 1, at 101. [↑](#footnote-ref-4)
5. John L Campbell, Mark E Harmon & Stephen R Mitchell, *Can fuel‐reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions?*, 10 Frontiers in Ecology and the Environment 83-90 (2011). [↑](#footnote-ref-5)
6. *Id.* [↑](#footnote-ref-6)
7. *Id.* [↑](#footnote-ref-7)
8. Lindsay A. Chiono et al., *Landscape-scale fuel treatment and wildfire impacts on carbon stocks and fire hazard in California spotted owl habitat*, 8(1) Ecosphere e01648 (2017). [↑](#footnote-ref-8)
9. *Id.* at 15. [↑](#footnote-ref-9)
10. *Id.* at 17. [↑](#footnote-ref-10)
11. John L. Campbell & Alan A. Ager, *Forest wildfire, fuel reduction treatments, and landscape carbon stocks: A sensitivity analysis*, 121 Journal of Environmental Management 124-132 (2013). [↑](#footnote-ref-11)
12. Id. [↑](#footnote-ref-12)
13. Stephen R. Mitchell, Mark E. Harmon & Kari E. B. O'Connell, *Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest ecosystems*, 19 Ecological Applications 643-655 (2009). [↑](#footnote-ref-13)
14. Joshua Clark et al., Clark, *Impacts of Thinning on Carbon Stores in the PNW: A Plot Level Analysis, Final Report*, Or. State Univ. Coll of Forestry (2011). [↑](#footnote-ref-14)
15. Beverly Elizabeth Law & Mark E Harmon, *Forest sector carbon management, measurement and verification, and discussion of policy related to climate change*, 2 Carbon Management 73-84 (2011). [↑](#footnote-ref-15)
16. Dominick DellaSala & Marni Koopman, *Thinning combined with biomass energy production may increase, rather than reduce, greenhouse gas emissions*, Geos Institute (2015) [↑](#footnote-ref-16)
17. *See e.g.*,Mitchell, S.R. et al. 2012. Carbon debt and carbon sequestration parity in forest bioenergy production. Global Change Biology Bioenergy 4: 818-827; Schulze, E.-D. et al. 2012. Large-scale bioenergy from additional harvest of forest biomass is neither sustainable nor greenhouse gas neutral. Global Change Biology Bioenergy 4: 611-616; McKechnie, J. et al. 2011. Forest bioenergy or forest carbon? Assessing trade-offs in greenhouse gas mitigation with wood-based fuels. Environ. Sci. Technol. 45: 789-795; Repo, A. et al. 2010. Indirect carbon dioxide emissions from producing bioenergy from forest harvest residues. Global Change Biology Bioenergy 3: 107-115; Gunn, J., et al., Manomet Center for Conservation Sciences. 2010. Massachusetts Biomass Sustainability and Carbon Policy Study: Report to the Commonwealth of Massachusetts Department of Energy Resources. [↑](#footnote-ref-17)
18. *Draft Recommendations, supra* nota 1, at 98. [↑](#footnote-ref-18)
19. *Id.* [↑](#footnote-ref-19)
20. Cal. Code Regs. tit. 17, § 95970(a)(1) (2014) [↑](#footnote-ref-20)
21. *Draft Recommendations, supra* note 1, at 11. [↑](#footnote-ref-21)