Data Submitted (UTC 11): 3/18/2022 7:00:00 AM
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March 18, 2022

Sent via: https://cara.fs2c.usda.gov/Public//CommentInput?Project=60422

Re: Creek Fire Project

On behalf of the Center for Biological Diversity and the John Muir Project of Earth Island Institute, we provide these scoping comments for the Creek Fire Project.

The Project would potentially authorize a very large amount of salvage logging. No specifics on overall acreage are given, nor specifics on any diameter limits, but it appears that many thousands of acres are being proposed for salvage, not including hazard tree logging.

We ask that only hazard tree logging occur (on level 3, 4, and 5 roads), and that hazard trees be felled and not removed as much as possible. Elsewhere, we ask that snags be retained as wildlife habitat. It is well documented that burned forests (including snags of all sizes as well as shrubs and other post-fire vegetation) are of great value to wildlife as discussed for example in the following publications: Blakey et al. 20191 (discussing bat use of severely burned forest); Buchalski et al. 20132 (discussing bat use of severely burned forest); Burnett et al. 20103, 20124 (discussing avian use of severely burned forest); Campos and Burnett 20155, 20166, 20177 (discussing avian and bat use of severely burned forest); Fogg et al. 20158, 20169 (discussing avian use of severely burned forest); Hanson and North 200810 (discussing woodpecker use of severely burned forest); Hanson 201411 (discussing avian use of severely burned forest); Hanson et al. 201812 (discussing owl use of severely burned forest); Hanson and Chi 2020 (discussing woodpecker use of burned forest); Loffland et al. 201713 (discussing bee use of severely burned forest); Roberts et al. 202114 (discussing avian use of severely burned forest); Seavey et al. 201215 (discussing woodpecker use of severely burned forest); Siegel et al. 201216, 201317, 201418, 201419, 201620 (discussing woodpecker use of severely burned forest); Stillman et al. 201921 and 201922 (discussing woodpecker use of severely burned forest); Taillie et al. 201823 (discussing avian use of severely burned forest); Tingley et al. 201424, 201625 (discussing woodpecker use of severely burned forest); White et al. 2016,26 201927 (discussing avian use of severely burned forest).

The above papers and others demonstrate that bats, bumblebees, spotted owls, great gray owls, woodpeckers, and many other species are making critical use of severely burned forest, such as the high density of snags (including small and medium sized snags, not just large ones), the post- fire shrub and other vegetation, and the plethora of food available (e.g., beetles, wildflowers). Moreover, these papers show that fires that the Forest Service would write off as outside of NRV are in fact providing key habitat for wildlife to survive and thus such fires need protection from stressors like logging. Furthermore, there can be important differences between forest stands that have burned at high-severity. For example, a pre-fire dense forest with large trees that burns at high-severity will produce post-fire conditions that are different from a pre-fire open forest that burns at high-severity. The proposal also does not address the temporal aspect of "flushing," wherein, as found by Hanson and North 2009, trees with 0% green foliage after fire often "flush," producing new green foliage from surviving terminal buds in the upper crowns, even when all of the needles on the trees have been killed.

The above referenced studies (e.g. Taillie et al. 2018, Campos et al. 2017, Fogg et al. 2016, Stillman et al. 2019) include the following points and recommendations:

* "Our results support previous studies that showed the conditions created by mixed-severity fires benefit species associated with early successional stages, ... A lack of moderate- to high severity fire, such as that from resulting fire suppression or a fire management approach limited to low-severity prescribed fire would have significant negative implications for the 12 species that were more abundant following high-severity burns than in unburned forest...................................... [O]ur results suggest that suppressing high-severity fire would negatively affect a number of species in the Sierra Nevada. Recent studies emphasize the value of mixed-severity fire for snag associated species (Lorenz et al. 2015, White et al. 2015, Latif et al. 2016), but we show that such conditions are similarly important for species associated with understory vegetation and shrubs, particularly after roughly a decade following fire. Forest managers should consider these lasting effects of high-severity fire on shrub development and supporting shrub- associated birds that are far less abundant in unburned forest."

* "Manage a substantial portion of post-fire areas for large patches (20-300 acres) burned with high severity as wildlife habitat."
* "Retain high severity patches in areas where pre-fire snags are abundant as these are the trees most readily used by cavity nesting birds in the first three years after a fire."
* "Retain snags in salvaged areas at far greater abundances than green forest standards and retain some in dense clumps."
* "Snag retention immediately following a fire should aim to achieve a range of snag conditions from heavily decayed to recently dead in order to ensure a longer lasting source of snags for nesting birds."
* "Consider that snags in post-fire habitat are still being used by a diverse and abundant avian community well beyond the 2 - 8 years they are used by Black- backed Woodpeckers."
* "Retain smaller snags in heavily salvaged areas to increase snag densities because a large range of snag sizes, from as little as 6 inches DBH, are used by a number of species for foraging and nesting. Though, most cavity nests are in snags over 15 inches DBH."
* "Retain patches of high burn severity adjacent to intact green forest patches, as the juxtaposition of unlike habitats is positively correlated with a number of avian species, including those declining such as Olive-sided Flycatcher."
* "Woodpeckers nested at sites with a mean of 15 [plusmn] 1 snags within 10 m of the nest tree (95% quantile = 2-31 snags), and the average nest tree had a DBH of 37 [plusmn] 1 cm (95% quantile = 22-67 cm). All but 2 nests (98%) occurred in dead trees. Resource selection models showed significant positive selection for habitat patches that burned at high severity (Table 3, Figure 2A). For example, a high- severity burn patch with 100% change in canopy cover (i.e. all trees killed) was over 5 times more likely to be used as a nest site than a patch with 50% canopy cover change. However, woodpeckers also selected sites that were relatively close to low-severity or unburned edges, showing greater probability of nesting near high-low severity ecotones than in the center of large high severity patches (Table 3, Figure 2B)."

The specifics of any road construction for salvage logging are also not disclosed. Road construction - even for temporary roads - removes all vegetation within the area graded, eliminates and fragments habitat, alters hydrology, and can act as a vector for human-caused fire and the spread of noxious weeds. Road use can cause roadkill and disturb wildlife during critical periods (winter, nesting, etc.). Thus, the nature and location of the road network to be used and constructed is critical to understanding this Project's impacts.

Thank you for this opportunity to comment. If you have any questions, please contact us at the email below.

Sincerely,

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FOOTNOTES:

1 Blakey, Rachel & Webb, Elisabeth & Kesler, Dylan & Siegel, Rodney & Corcoran, Derek & Johnson, Matthew. 2019. Bats in a changing landscape: Linking occupancy and traits of a diverse montane bat community to fire regime. Ecology and Evolution. 9. 10.1002/ece3.5121.

2 Buchalski, M.R., J.B. Fontaine, P.A. Heady III, J.P. Hayes, and W.F. Frick. 2013. Bat response to differing fire severity in mixed-conifer forest, California, USA. PLOS ONE 8: e57884

3 Burnett, R.D., P. Taillie, and N. Seavy. 2010. Plumas Lassen Study 2009 Annual Report. U.S. Forest Service, Pacific Southwest Region, Vallejo, CA

4 Burnett, R.D., M. Preston, and N. Seavy. 2012. Plumas Lassen Study 2011 Annual Report. U.S. Forest Service, Pacific Southwest Region, Vallejo, CA

5 Campos, Brent R. and Ryan D. Burnett. 2015. Avian monitoring of the Storrie and Chips Fire Areas: 2014 report 6 Campos, Brent R. and Ryan D. Burnett. 2016. Bird and Bat Inventories in the Moonlight, Storrie, and Chips Fire Areas: 2015 report to the Lassen and Plumas National Forests

7 Campos, B.R., R.D. Burnett and Z.L. Steel. 2017. Bird and bat inventories in the Storrie and Chips fire areas 2015- 2016: Final report to the Lassen National Forest. Point Blue Conservation Science, Petaluma, CA.

8 Fogg, Alissa M., Zachary L. Steel and Ryan D. Burnett. 2015. Avian Monitoring of the Freds and Power Fire Areas

9 Fogg, Alissa, Zack Steel, and Ryan Burnett. 2016. Avian Monitoring in Central Sierra Post-fire Areas

10 Hanson, C. T. and M. P. North. 2008. Postfire woodpecker foraging in salvage-logged and unlogged forests of the Sierra Nevada. Condor 110: 777-782

11 Hanson, C.T. 2014. Conservation concerns for Sierra Nevada birds associated with high- severity fire. Western Birds 45: 204-212

12 Hanson CT, Bond ML, Lee DE. 2018. Effects of post-fire logging on California spotted owl occupancy. Nature Conservation 24: 93-105. https://doi.org/10.3897/natureconservation.24.20538

13 Loffland, H.L., J.S. Polasik, M.W. Tingley, E.A. Elsey, C. Loffland, G. Lebuhn, and R.B. Siegel. 2017. Bumble bee use of post-fire chaparral in the central Sierra Nevada. The Journal of Wildlife Management 81:1084-1097.

14 Roberts, L.J.; Burnett, R.; Fogg, A. 2021. Fire and Mechanical Forest Management Treatments Support Different Portions of the Bird Community in Fire-Suppressed Forests. Forests 12, 150.

15 Seavy, N.E., R.D. Burnett, and P.J. Taille. 2012. Black-backed woodpecker nest-tree preference in burned forests of the Sierra Nevada, California. Wildlife Society Bulletin 36: 722-728

16 Siegel, R.B., M.W. Tingley, and R.L. Wilkerson. 2012. Black-backed Woodpecker MIS surveys on Sierra Nevada national forests: 2011 annual report. Report to U.S.D.A. Forest Service Pacific Southwest Region. The Institute for Bird Populations, Point Reyes Station, CA

While species like black-backed woodpeckers immediately utilize severely burned forests, many other species that rely on severely burned areas[mdash]such as the cavities [mdash] show up several to many years post-fire. Siegel et al. 2012 explains: "Many more species occur at high burn severity sites starting several years post-fire, [hellip]. and these include the majority of ground and shrub nesters as well as many cavity nesters. Secondary cavity nesters, such as swallows, bluebirds, and wrens, are particularly associated with severe burns, but only after nest cavities have been created, presumably by the pioneering cavity-excavating species such as the Black-backed Woodpecker.

Consequently, fires that create preferred conditions for Black-backed Woodpeckers in the early post-fire years will likely result in increased nesting sites for secondary cavity nesters in successive years."

17 Siegel, R.B., M.W. Tingley, R.L. Wilkerson, M.L. Bond, and C.A. Howell. 2013. Assessing home range size and habitat needs of Black-backed Woodpeckers in California: Report for the 2011 and 2012 field seasons. Institute for Bird Populations

18 Siegel, R.B., M.W. Tingley, and R.L. Wilkerson. 2014. Assessing home-range size and habitat needs of Black-backed Woodpeckers in California: report for the 2013 field season. Report to U.S.D.A. Forest Service Pacific Southwest Region. The Institute for Bird Populations, Point Reyes Station, CA

19 Siegel, R.B., R.L. Wilkerson, M.W. Tingley, and C.A. Howell. 2014. Roost sites of the Black-backed Woodpecker in burned forest. Western Birds 45:296-303

20 Siegel, R.B., M.W. Tingley, R.L. Wilkerson, C.A. Howell, M. Johnson, and P. Pyle. 2016. Age structure of Black-backed Woodpecker populations in burned forests. The Auk: Ornithological Advances 133:69-78 Siegel et al. states that its "results indicate that natal dispersal is the primary means by which Black-backed Woodpeckers colonize recently burned areas in western forests, and that breeding dispersal is uncommon. The

decline of Black-backed Woodpecker populations 6-10 yr after fire likely reflects the lifespan of individual birds that colonized the burned area, or of offspring that they produced in the early postfire years."

21 Stillman, A.N., R.B. Siegel, R.L. Wilkerson, M. Johnson, and M.W. Tingley. 2019. Age-dependent habitat relationships of a burned forest specialist emphasise the role of pyrodiversity in fire management. Journal of Applied Ecology 56:880-890

22 Stillman, A.N., R.B. Siegel, R.L. Wilkerson, M. Johnson, C.A. Howell and M.W. Tingley. 2019. Nest site selection and nest survival of Black-backed Woodpeckers after wildfire. The Condor: Ornithological Applications XX:1-13

23 Taillie, P. J., R. D. Burnett, L. J. Roberts, B. R. Campos, M. N. Peterson, and C. E. Moorman. 2018. Interacting and non-linear avian responses to mixed-severity wildfire and time since fire. Ecosphere 9(6):e02291. 10.1002/ecs2.2291

24 Tingley, M.W., R.L. Wilkerson, M.L. Bond, C.A. Howell, and R.B. Siegel. 2014. Variation in home range size of Black-backed Woodpeckers (Picoides arcticus). The Condor: Ornithological Applications 116: 325-340

25 Tingley, M.W., V. Ruiz-Guti[eacute]rrez, R.L. Wilkerson, C.A. Howell, and R.B. Siegel. 2016. Pyrodiversity promotes avian diversity over the decade following forest fire. Proceedings of the Royal Society B 283:20161703.

26 White, A. M.; Manley, P. N.; Tarbill, G. L.; Richardson, T. W.; Russell, R. E.; Safford, H. D.; Dobrowski, S. Z. 2016. Avian community responses to post-fire forest structure: implications for fire management in mixed conifer forests. Animal Conservation. 19(3): 256-264

27 White, A.M., G.L. Tarbill, B. Wilkerson, and R. Siegel. 2019. Few detections of Black-backed Woodpeckers (Picoides arcticus) in extreme wildfires in the Sierra Nevada. Avian Conservation and Ecology 14:17