February 12, 2020

RE: Comments on Mt. Hood National Forest proposed Zigzag Integrated Resource Plan (IRP) and Timber Sale

Dear Mr. James Roden,

Thank you for this opportunity to provide scoping comments on the proposed Zigzag IRP and Timber Sale. Members of our organizations enjoy and value the Mt. Hood National Forest (MHNF), the public lands and water lands encompassed by the project area and the fish and wildlife that are supported by this area. Audubon Society of Portland represents 17,000 members. The Oregon Chapter, Sierra Club has 20,000 members and 60,000 supporters. 350PDX enjoys the support of 9,000 individuals. Oregon Physicians of Social Responsibility represents over 2,000 health professionals and public health advocates.

We appreciate the restoration work that has been a priority for the Zigzag Ranger District during the past two decades. It was an appropriate response to a legacy of extreme clear-cutting and habitat loss in this area and in the MHNF. It is cause for deep concern that extensive and expensive work to support salmon recovery and recreation is now threatened by the size and scope of the proposed Zigzag timber sale located in the Upper Sandy and Upper Salmon River watersheds.

Our members and the public place a very high value on carbon sequestration. We appreciate the stability that undisturbed forests provide to our threatened climate. Please see: https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full We also value clean water, recreation, wildlife, federally designated Wilderness, roadless areas with potential to be designated as Wilderness, Wild & Scenic Rivers, new candidates for designation of Wild & Scenic Rivers, National Recreation Areas (NRA) and candidates for NRA designation, habitat for northern spotted owls, endangered Chinook, coho and steelhead, Special Emphasis watersheds identified in the Mt. Hood National Forest Plan, Riparian Reserves identified in the NW Forest plan, and Survey & Manage species identified in the NW Forest Plan.

All of these values are at risk in the proposed Zigzag IRP and Timber Sale, which includes logging units, including some clearcutting, in 2,700 acres of the Horseshoe and Mud Creek areas. For example, this sale proposes logging in 642 acres of Riparian Reserves, logging in 79 acres of Wild & Scenic River corridors, activities that could degrade 7 acres of Special Interest Areas including Old Maid Flat, logging in 1,340 acres of Scenic Viewshed areas and in 30 acres of Roaded Recreation areas. Logging may also negatively impact areas with large numbers of recreational visitors including Trillium Lake, Ramona Falls, Burnt Lake, Top Spur Trail and the Pacific Crest Trail.

We believe there will be multiple negative "significant impacts" associated with implementation of this controversial project and therefore request that the USFS prepare an Environmental Impact Statement (EIS).

Climate
Valuable mature forests in this 2,700 acre project area sequester a vast amount of carbon. Logging, road building, and log trucks will create significant carbon pollution. Recent studies demonstrate that we have approximately 10 years to stabilize our climate. Why would we support logging of mature forests that beautifully perform that function now?

Logging and roads will reduce carbon storage and increase carbon emissions, exacerbating both global climate change and ocean acidification. Please see:
William R. Moomaw, Susan A. Masino, and Edward K. Faison. 2019. Intact Forests in the United States: Proforestation Mitigates Climate Change and Serves the Greatest Good Front. For. Glob. Change, 11 June 2019
| https://doi.org/10.3389/ffgc.2019.00027; https://www.frontiersin.org/articles/10.3389/ffgc.2019.00027/full;
Oregon Governor's Natural Resource Office. Oregon's Ocean Acidification and Hypoxia Action Plan. August 2019. https://www.oregonocean.info/index.php/ocean-documents/oah-hypox/june-2018-oah-action-plan-public-comment-documents/1924-draft-oregon-s-oah-action-pan-2019/file.

Global studies have shown that the cumulative impact of forest management practices around the world is a major contributor to rising atmospheric CO2 and the loss of terrestrial carbon sequestration capacity. A recent study from Oregon State University shows that the forests of the Pacific Northwest have some of the highest carbon sequestration rates in the world, and that leaving high-value forests un-logged can help offset the carbon emissions of the region. Please see:
https://www.opb.org/news/article/climate-change-study-carbon-offset-logging-northwest-forests/
and
http://opb-imgserve-production.s3-website-us-west-2.amazonaws.com/original/buotte_eap.2039_accepted_1576697573797.pdf

In the Oregon Global Warming Commission (OGWC) study on Forest Carbon Accounting, they reported that heavily thinned forests require 25-40 years to recover their pre-thin carbon storage levels. Please note:
"The 2011 OSU study (Clark et al, 2011) from which the figure on the following page is taken, looked at the carbon consequences of different levels of thinning. Carbon accumulations continue under a "no thin" policy, while light thinning requires 15 years to recover pre-thin carbon levels. The analysis continues through an intermediate "financial break-even" thin (remove all trees less than 7" DBH24 and 20 percent of trees 7"-20" DBH) that required a 25 to 40 year carbon recovery period; and a heavy thin that fails to recover pre-thin carbon levels over a 50 year (or longer) period." OGWC Forest Carbon Accounting Project Report, 2018

As the proposed project will negatively contribute to the global trend, please disclose in

an EIS how the US Forest Service (USFS) justifies its decision to use its authority to implement a project that contributes to, rather than mitigates, global climate change.

Additionally, many of the anticipated negative impacts we discuss below will interact unfavorably with global climate change - making effects much worse than they would be in the absence of climate change. Please see:
Dalton, M.M., K.D. Dello, L. Hawkins, P.W. Mote, and D.E. Rupp (2017) The Third Oregon Climate Assessment Report, Oregon Climate Change Research Institute, College of Earth, Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR. http://www.occri.net/media/1042/ocar3_final_125_web.pdf;

Please 1) quantify all carbon emissions associated with implementation of this project and 2) disclose the impacts of a warming climate on the project area and dependent species with logging and without logging.

Wilderness
A conservation coalition will soon be publicly recommending new inclusions in the national Wilderness system within the project area. Please see the attached map.
Then please view the following map
https://usfs.maps.arcgis.com/apps/MapJournal/index.html?appid=4f3944a7616d4f4db83943691018ca64,
and determine and disclose which units are located within potential new Wilderness areas. This should be disclosed in an EIS as a "significant impact."
Then please remove these units from consideration for logging, roadbuilding and any activity that would jeopardize their inclusion in the Wilderness system.

Please do not log in scenic viewsheds as seen from existing or potential Wilderness and existing trails.

Wild and Scenic Rivers
A conservation coalition will soon be publicly recommending new designations for Wild & Scenic Rivers within the project area. Please see the attached map.
Senator Ron Wyden is accepting public recommendations for rivers suitable for federal designation as Wild & Scenic Rivers. The MHNF has a process in place as well. Please identify which stretches of which rivers are eligible for future designation and for which values they could be designated. This should be disclosed in an EIS as a "significant impact." Please do not log units within existing Wild & Scenic River corridors and within eligible Wild & Scenic River corridors.

Clean Water
Please identify which designated Special Emphasis Watersheds will be impacted and degraded. Please disclose plans for so-called "regeneration harvest" or complete conversion from forest to non-forest in one or more of these watersheds. Disclose how logging will impair each of these watersheds. Identify and quantify by maps and narrative the mileage of new roads and new temporary roads proposed to be built in Special Emphasis watershed, and in salmon and steelhead and coho habitat. Disclose the potential

impacts of rain-on-snow events in the project area and in Special Emphasis watersheds. Identify the location and risks of landslides and debris flows to water quality.

Logging and roads will increase peak flows immediately after logging. Artificial peak flows cause erosion, turbidity, and adverse impacts on fish populations. Please see: Grant, Gordon E.; Lewis, Sarah L.; Swanson, Frederick J.; Cissel, John H.; McDonnell, Jeffrey J. 2008. Effects of forest practices on peak flows and consequent channel response: a state-of-science report for western Oregon and Washington. Gen. Tech. Rep. PNW-GTR-760. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 76 p. http://www.fs.fed.us/pnw/pubs/pnw_gtr760.pdf;

With thinned forests and hotter, drier, longer summers, please disclose the potential impacts on water quantity for these watersheds and for endangered fish. Artificially low summer stream flows cause adverse effects on stream temperature, reduced water availability, and reduced quantity and quality of fish habitat. Please see: Perry, T. D., and Jones, J. A. (2016) Summer streamflow deficits from regenerating Douglas-fir forest in the Pacific Northwest,USA. Ecohydrology,doi: 10.1002/eco.1790. http://onlinelibrary.wiley.com/doi/10.1002/eco.1790/full;

This project proposes to build 10.5 miles of temporary roads. It is well-documented that road construction vastly elevates erosion levels for many years, particularly in the first two years when the construction causes a persistent increase in erosion relative to areas in a natural condition. Specifically, major reconstruction of unused roads can increase erosion for several years and potentially reverse reductions in sediment yields that occurred with non-use. Please disclose these potential negative impacts to clean water and dependent species.

Endangered Species

This project, through logging and road building, will degrade habitat designated as critical under the Endangered Species Act for threatened Coho and Chinook salmon and steelhead, species which have seen significant recovery following proactive habitat restoration by the USFS. It will put at risk the millions of dollars invested by taxpayers, the USFS and City of Portland to recover these valuable species in the Sandy and Salmon River watersheds. This should be disclosed in an EIS as a "significant impact."

Logging and roads in and adjacent to stream buffers will degrade the microclimate in Riparian Reserves, reduce wood recruitment in and near streams, degrade water quality and fish habitat. Please see: 1993 FEMAT Report, pp V-13, V-25; Anderson, Paul D.; Larson, David J.; Chan, Samuel S. 2007. Riparian Buffer and Density Management Influences on Microclimate of Young Headwater Forests of Western Oregon. Forest Science, Volume 53, Number 2, April 2007, pp. 254-269(16). http://www.ingentaconnect.com/content/saf/fs/2007/00000053/00000002/art00012; Pollock, M. 2013. An analysis of the effects of riparian forest harvest on the development of late-successional forest structure and instream wood production - A review of timber

harvest in Riparian Reserves proposed by the Bureau of Land Management for federal lands in the Coquille watershed in southwest Oregon as part of the Lone Pine Biological Assessment; v.08.23.2013. NMFS; Thomas Spies, Michael Pollock, Gordon Reeves, and Tim Beechie 2013. Effects of Riparian Thinning on Wood Recruitment: A Scientific Synthesis - Science Review Team Wood Recruitment Subgroup. Jan 28, 2013, p 36. http://www.mediate.com/DSConsulting/docs/FINAL%20wood%20recruitment%20document.pdf;

According to the NW Forest Plan, logging in Riparian Reserves is only allowed if it is necessary to improve riparian habitat and water quality. *(NWFP, C-31,2).* Proposed roadbuilding and logging on steep slopes and in 642 acres of Riparian Reserves pose a significant threat to protected species. Please disclose and analyze these risks.

Northern Spotted Owls (NSO)
Logging and roads will adversely affect listed species. Removal or degradation of suitable habitat for the spotted owl will increase adverse competitive interactions with barred owls. To mitigate for the invasion of the barred owl into the entire range of the spotted owl, scientists recommend retention of more suitable habitat, not just the small subset of *high quality* suitable habitat. Please see: Forsman, E.D., Anthony, R.G. et al "Population Demography of Northern Spotted Owls." DRAFT COPY 17 December 2010. This draft manuscript is in press at the University of California Press with a projected publication date of July 2011. It will be No. 40 in Studies In Avian Biology, which is published by the Cooper Ornithological Society. http://www.reo.gov/monitoring/reports/nso/FORSMANetal_draft_17_Dec_2010.pdf
See also: Wiens, J.D., Anthony, R.G., and E.D. Forsman. 2014: Competitive Interactions and Resource Partitioning Between Northern Spotted Owls and Barred Owls in Western Oregon. Wildlife Monographs 185:1–50; 2014; DOI: 10.1002/wmon.1009. https://ir.library.oregonstate.edu/xmlui/bitstream/handle/1957/48214/AnthonyRobertFisheriesWildlifeCompetitiveInteractions.pdf.

Logging and roads will adversely impact spotted owl prey base, e.g., flying squirrel, red tree vole. Please see: Wilson, Todd M.; Forsman, Eric D. 2013. Thinning effects on spotted owl prey and other forest-dwelling small mammals. In: Anderson, Paul D.; Ronnenberg, Kathryn L., eds. Density management for the 21st Century: west side story. Gen. Tech. Rep. PNW-GTR-880. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 79
https://www.fs.fed.us/pnw/pubs/pnw_gtr880.pdf

While there is no designated critical habitat for northern spotted owls in the Zigzag Timber Sale, there are at least 6 historic territories within the project areas, and dispersal/foraging habitat currently exists there. Bark's field surveys lead us to believe that several stands include structure necessary to provide suitable habitat for NSO. The EIS should include detailed information about how the relative quality of NSO habitat in the project area was determined, a detailed map that supports conclusions, and a thorough explanation of how this project complies with the Spotted Owl Recovery Plan. The EIS

should also disclose the effects of thinning on spotted owl prey (flying squirrel, red tree voles) as well as predator/competitors (barred owl) both of which have significant implications to the future survival of northern spotted owls within the Zigzag project area.

Concerns Regarding Other Species

Logging and roads will reduce recruitment of snags and dead wood and all the ecosystem services they provide. One of the most significant and lasting effects of stand replacing disturbance, including regeneration logging, is to bring the process of snag recruitment to a virtual standstill for many decades. Especially, when trees are removed by logging, the snag population is reduced to ensure safe conditions for workers and remains low for many decades because the pool of green trees available for snag recruitment is greatly reduced. This results in a multi-decade "snag gap" that has serious adverse consequences for habitat and many other ecological processes.

Please see: Rose, C.L., Marcot, B.G., Mellen, T.K., Ohmann, J.L., Waddell, K.L., Lindely, D.L., and B. Schrieber. 2001. Decaying Wood in Pacific Northwest Forests: Concepts and Tools for Habitat Management, Chapter 24 in Wildlife-Habitat Relationships in Oregon and Washington (Johnson, D. H. and T. A. O'Neil. OSU Press. 2001) http://web.archive.org/web/20060708035905/http://www.nwhi.org/inc/data/GISdata/docs/chapter24.pdf;

Please disclose and analyze the status of Survey and Manage species and surveys in the proposed logging units and the proposed road system. Identify if and how this project could negatively impact Neotropical Migrants.

Invasive Species

New roads and logging equipment provide new vectors for introduction of invasive species. Logging and roads will spread weeds by exposing mineral soil, transporting seeds, and removing native vegetation thus giving more light and nutrients to weeds. Inventories show that weeds are closely associated with roads and recently logged areas. Consider alternatives that avoid creating the conditions that spread weeds. Please see: Parendes, L. A. and J. A. Jones. 2001. Role of Light Availability and Dispersal in Exotic Plant Invasion along Roads and Streams in the H. J. Andrews Experimental Forest, Oregon. Conservation Biology. Vol. 14, No. 1 (Feb., 2000), pp. 64-75. https://doi.org/10.1046/j.1523-1739.2000.99089.x
Also see: Gray, Andrew N. 2005 Nonnative Plants in the Inventory of Western Oregon Forests. In: McRoberts, Ronald E.; Reams, Gregory A.; Van Deusen, Paul C.; McWilliams, William H.; Cieszewski, Chris J., eds. Proceedings of the fourth annual forest inventory and analysis symposium; Gen. Tech. Rep. NC-252. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Research Station. 11-16. http://ncrs.fs.fed.us/pubs/gtr/gtr_nc252/gtr_nc252_011.pdf;

Please disclose the status of invasive species and treatment for invasive species in the

project area now. With over 10 miles of new road proposed, disclose how (and how much money will be required) to permanently prevent illegal entry, including off-highway vehicles (OHVs), into logging units.

Recreation
A conservation coalition will soon be publicly recommending new designations for National Recreation Area (NRA) in the project area. Please see the attached map. All logging units proposed for this project are located within the proposed NRA. This should be disclosed in an EIS as a "significant impact."

Logging and roads will degrade the quality of the recreation experience in the area. People who recreate on USFS land tend to seek a recreation setting that is dominated by natural features and natural processes, not logging, weeds, stumps, eroded soils, and degraded streams.

The economic health of local communities depends on reliable, high-quality recreation experiences within the Zigzag project area and the district at large. Please disclose all potential impacts to recreation, including road closures, trail closures, visual quality impairment and the length of time public access would be disrupted and quantify the associated loss of revenue to local shops, restaurants, businesses, and services.

Additionally, please disclose the impacts to recreation from the Eagle Creek fire. With trail and road closures in that area, many hikers and bikers moved into the Zigzag Ranger District. More people appreciate and look to continued access to this forested area than ever before. Please disclose the current number and type of recreational users and provide projections for future recreational use 1) if the forest is not degraded by logging and roadbuilding and 2) if it is.

Tribal Treaty Rights
Has formal nation-to-nation consultation with interested Tribal governments taken place? Please disclose this information in an EIS.

Public Engagement
Unfortunately, we were unable to visit some units of the Horseshoe Sale and all units of Muddy Creek sale proposed for logging in the Zigzag Timber Sale. Members of the timber industry were given a tour in July of 2018, long before any members of the public became aware of the plan to increase logging in the district. Had the USFS notified us in July of 2018, we certainly would have had an opportunity to see the entire project area. The poor timing of this 30 day comment period (Jan. 13-Feb. 12, 2019) was inappropriate given members' inability to visit proposed logging units in bad weather. Please see: https://www.bark-out.org/sites/default/files/bark-docs/AFRC-Mt.-Hood-Meeting-and-Field-Trip-July-24-2018.pdf

To our knowledge, none of our members have been able to physically visit/access all of the units of this sale. Of those units that have been visited by our members and partners, we understand that these units of the Horseshoe area should not be logged under any

circumstance: **Units 24, 26, 28, 18, 2, 68, 64, 62.** Some demonstrate valuable late-successional forest characteristics within a scenic viewshed. Others are within Wild & Scenic River corridors. Others provide large trees, high quality habitat and important connectivity.

We also **oppose logging of Unit 7**, which is immediately adjacent to the Bull Run Management Unit. Logging and road building required to access this unit will bring

- increased risk of blow-down to the BRMU forest;
- increased risk fire in the BRMU from logging operations;
- increased risk of invasive species entry into the BRMU on logging equipment and/or through OHV entry post-logging; and
- increased risk of fire from campfires/garbage dumping/target practice from those gaining access through new "temporary" road.

In general, thinning of existing young plantations should be a reasonable activity to meet stated objectives. However, if temporary roadbuilding, skid trails, road reconstruction and road construction is required to access plantations through areas of unstable soils, steep slopes, Riparian Reserves, Wild & Scenic corridors, valuable wildlife habitat, roadless areas and/or native forest, the risks may outweigh benefits. These risks and benefits must be identified and analyzed in an EIS.

While the USFS claims "[a] primary purpose of this project is to improve the health and increase the diversity of forested stands," please do not plan any commercial logging in mature, native, and fire-originated forest stands. These forests are already structurally complex with mixes of plant species of varying ages. They sequester a tremendous amount of carbon. Logging older stands will virtually always lead to net negative effects on the public interest. Any land allocation or "Purpose-and-need" to obtain timber volume from logging older stands must be reconsidered in light of the urgent need to address the climate crisis by retaining carbon in the forest and avoid carbon emissions from forest degradation. (See Moomaw et al 2019 cited above).

Again, many of the negative effects listed above will interact unfavorably with global climate change - making effects much worse than they would be in the absence of climate change. Please see:
Dalton, M.M., K.D. Dello, L. Hawkins, P.W. Mote, and D.E. Rupp (2017) The Third Oregon Climate Assessment Report, Oregon Climate Change Research Institute, College of Earth, Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR. http://www.occri.net/media/1042/ocar3_final_125_web.pdf;

The amazing values at risk here are unlikely to be adequately identified and analyzed in a Preliminary Assessment and Environmental Assessment. We anticipate that there will be multiple significant impacts that simply cannot be mitigated should the USFS implement this sale, including destabilization of our climate, loss of listed fish species, loss of forests suitable for designation as Wilderness, loss of land suitable for designation as National

Recreation Area and loss of eligibility of river stretches for inclusion in the national Wild & Scenic River system. For these reasons, **we strongly urge the USFS to initiate the development of an Environmental Impact Statement.**

Thank you for consideration of our comments.

Bob Sallinger
Conservation Director
Audubon Society of Portland
5151 NW Cornell Road
Portland, OR 97210
503.380.9728

Jessica L. Beckett
Conservation & Political Director
Oregon Chapter, Sierra Club
1821 SE Ankeny Street
Portland, OR 97214
503-451-0648
Jessica.beckett@sierraclub.org

Chris Palmer
Volunteer & Communications Manager
Felice Kelly, PhD
Co-Chair Forest Defense
350PDX
1820 NE 21st Avenue
Portland, OR 97212
503.281.1485

Damon Motz-Storey
Healthy Climate Program Director
Oregon Physicians for Social Responsibility
1020 SW Taylor Street, Suite 275
Portland, OR 97205
503.274.2720
Damon@oregonpsr.org