



August 22, 2022

Re: Request for information on Federal Old-growth and Mature Forests EO 14072 Submitted via Jamie Barbour, Assistant Director, Ecosystem Management Coordinator via roy.barbour@usda.gov;
<https://cara.fs2c.usda.gov/Public/CommentInput?project=NP-3239>

Wild Orca is a non-profit whose mission is to translate science into action to save the Southern Resident killer whales (SRKW) from extinction. Dr. Deborah Giles, Science and Research Director, is one of the world's leading experts on these orcas and has studied this endangered population almost exclusively since 2005. Despite being one of the most studied and well-known species on the planet, the decline of the SRKWs continues. Wild Orca works to redress this by filling knowledge gaps through high-impact, non-invasive field-based conservation research. In doing so, we arm policymakers with the latest available science—underpinned by the urgency for recovery—while engaging the public with accessible and digestible information, as well as initiating opportunities for direct engagement with key decision-makers to create accountability.

Wild Orca applauds President Biden's Executive Order 14072 of April 22, 2022 Strengthening the Nation's Forests, Communities, and Local Economies. Deforestation, and its impacts (increased carbon into the atmosphere) on our oceans, is of major concern. We cannot recover our endangered Southern Resident killer whales unless we halt threats to their marine environment and halt the threats to their major prey, Chinook salmon, which is also endangered.

The Southern Resident killer whales evolved over 1000s of years as the original fishers of Chinook salmon in the Pacific Northwest (PNW). Before the arrival of European colonizers, the PNW was almost completely forested (virgin stands of old growth) and provided pristine habitat for Chinook salmon. Streams ran cold from the mountains to the sea allowing these anadromous fish to complete lifecycles which started in the mountains, leading next to spending the majority

of their lifespan in the oceans, and then returning to natal waters to spawn and die, thus completing a cycle, that is also beneficial to the continuation of PNW forests by providing needed nutrients to the soil.

Salmon, as a keystone species in the PNW, suffer from continued loss of forests by current timber practice management that has had, and continues to have, a profound impact. These timber practices include clearcutting entire forests, which results in hotter temperatures in streams and lack of oxygen in streams due to mud and debris slides. Logging roads and culverts also degrade salmon habitat. Forests that have been clearcut continue to emit carbon into the atmosphere for years, and it is estimated that replanted areas do not start to sequester carbon for roughly 15 years. Continuing these practices will result in losing these fish, which will imperil the ecosystem for the SRKWs, and the over 137 species that depend upon PNW salmon.

Deforestation impacts salmon and SRKWs by directly contributing to ocean acidification and ocean warming. Carbon used to be stored in forests – with logging, the excess carbon is now being taken up in the oceans. A warming ocean has less oxygen, which impacts survival of aquatic species. A prime example of this happened in 2014, when a large mass of warm water in the North Pacific Ocean, known as “The Blob” decimated northern copepods, leading to lower returns of Columbia Basin salmon. Copepods are tiny, energy-rich organisms full of lipids. Their presence, or lack of, are vitally important to the food chain. Salmon feasting on forage fish, that have feasted on copepods, are larger and more nutritious to Southern Resident killer whales.

Regarding the input being sought by the USDA Forest Service and the Bureau of Land Management, specifically seeking answers to various questions on how to determine and define old-growth forests on Federal Lands, Wild Orca concurs with and supports the comments submitted by Dr. Dominck DellaSala on behalf of Wild Heritage. Comments are attached. We also urge you to adopt and use his recently completed mapping of old-growth forests of the conterminous United States, which can be [found here](#). The mapping of old-growth is a requirement of the President’s Executive Order. Using work already completed will free time and money for other needed work to mitigate climate change.

In addition to using Dr. DellaSala’s work, we respectfully request that an immediate moratorium on all logging on Federal Lands be put into place during the year that the agencies are responding to President Biden’s Executive Order. Without a moratorium, old-growth forests will continue to be logged and we

simply do not have 80+ years to wait for replanted areas to mature in order to equal the carbon sequestration already taking place in our old-growth and mature forests. Once these forests are gone – due to the impacts (unprecedented drought in the western United States, interruption of the water cycles, etc.) already felt from climate change – there is no guarantee that the trees will regrow. (In the PNW, we are losing our Western Red Cedars due to drought.) We also strongly urge that the agencies rethink their current logging practices and stop clearcutting of forests, which also destroys the mycorrhizal sublayer, another important carbon sink; and we demand that newer logging practices of allowing for longer rotations be adopted. Longer rotations have been proven to store more carbon.

We also wish to stress that we do not need new technology to remove excess carbon from the atmosphere – instead, we simply need to stop deforestation and let the forests sequester carbon. Therefore, funds from the Inflation Reduction Act should not be used to fund research and development of this technology, especially since effects are not well understood and might pose their own devastating problems, and we do not have the time. Instead, these funds should be used to turn our Federal Timber Lands into carbon reserves. This is the most immediate action we can take if we truly wish to mitigate climate change.

Unless we save the forests, reducing fossil fuel usage will simply not be enough – to save endangered salmon, endangered Southern Resident killer whales, and ultimately, ourselves. We are at T-7.5 years. We must get this right – now.

Sincerely,

Teri Wright

Teri Wright
Legislation and Policy Organizer
Wild Orca

References

Climate change impact on oceans

Herbert-Read, J.E., Thornton, A., Amon, D.J. *et al.* A global horizon scan of issues impacting marine and coastal biodiversity conservation. *Nat Ecol Evol* (2022). <https://doi.org/10.1038/s41559-022-01812-0>

Effects of altered nutritional content of fish due to climate change. Essential fatty acids (EFAs) are critical to maintaining human and animal health and fish consumption provides the primary source of EFAs for billions of people. In aquatic ecosystems, phytoplankton synthesize EFAs, such as docosahexaenoic acid (DHA), with pelagic fishes then consuming phytoplankton. However, concentrations of EFAs in fishes vary, with generally higher concentrations of omega-3 fatty acids in slower-growing species from colder waters. Ongoing effects of climate change are impacting the production of EFAs by phytoplankton, with warming waters predicted to reduce the availability of DHA by about 10–58% by 2100; a 27.8% reduction in available DHA is associated with a 2.5 °C rise in water temperature. Combined with geographical range shifts in response to environmental change affecting the abundance and distribution of fishes, this could lead to a reduction in sufficient quantities of EFAs for fishes, particularly in the tropics. Changes to EFA production by phytoplankton in response to climate change, as shown for Antarctic waters, could have cascading effects on the nutrient content of species further up the food web, with consequences for marine predators and human health.

Tanaka KR, Van Houtan KS (2022) The recent normalization of historical marine heat extremes. *PLOS Clim* 1(2): e0000007. <https://doi.org/10.1371/journal.pclm.0000007>

While the prediction of future climate change impacts remains challenging, facilitating constructive climate change dialogue may face fewer barriers when drawing from historical climate records. Using the methods applied here, we find that extreme climate change is not a hypothetical future possibility, but a past historical event that has already occurred in the global ocean. Though this occurred earlier in some regions, 50% of the ocean's surface experienced extreme heat in 2014, and this has steadily increased thereafter

Habitat Loss and salmon

Bennett, M. (2019). Wild Salmon: Protecting the Icon of the Pacific Northwest. D.U.Quark, 4 (1). Retrieved from <https://dsc.duq.edu/duquark/vol4/iss1/7>

The biggest threat facing Northwestern Pacific salmon was once severe overharvesting by humans, but it is now habitat loss. This is especially prevalent in places that have developed rapidly, such as Japan, California, Oregon, and Washington (Wild Salmon Center). Salmon habitat can be destroyed by deforestation, agriculture, urban development, and coastal development (EPA). In addition to decreasing the resources available to salmon, land use changes by humans can directly affect the conditions of salmon habitats. Deforestation reduces the shading in wetland ecosystems and warms the streams that Chinook inhabit, making the water unsuitable to their habitat requirements. As wetland deforestation increases the temperature of coldwater fish habitats, climate change is likely to exacerbate the problem. Scientists propose that habitat restoration could reduce the effects of climate change, but all salmon ecosystems will likely be affected to some degree.

Carbon and deforestation

Law, B.E., Berner, L.T., Buotte, P.C. *et al.* Strategic Forest Reserves can protect biodiversity in the western United States and mitigate climate change. *Commun Earth Environ* **2**, 254 (2021). <https://doi.org/10.1038/s43247-021-00326-0>

Forest preservation is crucial for protecting biodiversity and mitigating climate change. Here we assess current forest preservation in the western United States using spatial data and find that beyond the 18.9% (17.5 Mha) currently protected, an additional 11.1% (10.3 Mha) is needed to achieve 30% preservation by 2030 (30 × 30). To help meet this regional preservation target, we developed a framework that prioritizes forestlands for preservation using spatial metrics of biodiversity and/or carbon within each ecoregion. We show that meeting this preservation target would lead to greater protection of animal and tree species habitat, current carbon stocks, future carbon accumulation, and forests that are important for surface drinking water. The highest priority forestlands are primarily owned by the federal government, though substantial areas are also owned by private entities and state and tribal governments. Establishing Strategic Forest Reserves would help protect biodiversity and carbon for climate adaptation and mitigation.

Wild Heritage Comments



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