

From: [Sea Lion](#)
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Subject: Warming Water
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Hello, I question how the Senate republican walk out and refusal to adopt a progressive climate change bill will affect salmon in the future. The fact that the Oregon senate republicans think it is OK to walk off the job and not address climate change is shameful. The House committee meeting today to discuss how climate change will affect cold water fish in our bio region is a one legged attempt--- because many industries that contribute Oregon's waters warming do not want to adopt a climate change policy and only want to continue to conduct cold water fish killing business as usual.

If the Columbia River estuary and the Pacific Ocean continue to turn into a giant "blob" of warm water; creating a giant algal bloom which is believed to be caused by a combination of factors, dams, clear cuts, burning fossil fuels, large scale animal agriculture, human nutrient overload, toxic road run off, waste water, pesticides, herbicides, insecticides, and agricultural run-off contributing to the loss of the planet's ice causing global-- ocean climate change. Salmon spend half their lives in the ocean returning as adults to their natal rivers and streams. Warming ocean and river water temperatures above 68 degrees make cold water fish more susceptible to disease, disorientation and death.

In addition, 2019, set another record for Ocean warming according to NOAA. The study conducted by an international team of 14 scientists from 11 institutes around the world declared the past ten years have been the warmest on record for global ocean temperatures, with the last five years holding the highest record. In the last 25 years the amount of heat that we have put into our oceans would be equal to 3.6 Billion Hiroshima atom- bomb explosions, says Lijing Cheng lead author on the paper published their results on Jan 13 2020 in *Advances in Atmospheric Sciences*. "This measured ocean warming is irrefutable and is further proof of global warming. There are no reasonable alternatives aside from the human emissions of heat trapping gasses to explain this heating," says Cheng. Two independent data sets indicate that the past five years have been the warmest on record for global ocean temperatures. Dubbed the "blob" one such marine heat wave first detected in 2013 and lasted through 2016 devastated the North Pacific causing major loss of marine life from phytoplankton to zooplankton, seabirds, fish, and thousands of marine mammals starved according to Kevin Trenberth, co-author and senior scientist at the National Center for Atmospheric Research in the USA. "These manifestations have major consequences"

Unfortunately, 2019 broke the previous record set in prior years for global ocean warming and the effect can already be felt in the form of more extreme weather, rising sea levels, and harm to ocean animals, the scientist share. "It is critical to understand how fast things are changing," says John Abraham, co-author and professor of mechanical engineering at the University of St. Thomas in the USA. "The key to answering this question is in the oceans—that is where the vast majority of the heat ends up. If you want to understand global warming you have to measure ocean warming."

Altogether, the scientist will study the impacts beyond warming ocean temperature. They will study how water temperatures affect the water's buoyancy which directly affects nutrient distribution, and heat says the author. "The price we pay is the reduction in of ocean dissolved oxygen, the harmed marine lives, strengthening storms and reduced fisheries and ocean-related economies," Cheng said.

Therefore "global warming is real, and it is getting worse," Abraham says "This is just the tip of the iceberg for what is to come. Fortunately, we can do something about it: we can use energy more wisely and we can diversify our energy sources. We have the power to reduce this problem." In 2020, scientists also measured record warm water temperatures in Antarctica. The water flow was more than two degrees above freezing beneath the Thwaites-Glacier, which is part of the Western Antarctic Sheet causing concern about sea level rise around the globe. "Warm waters in this part of the world as remote as they may seem, should serve as a warning to all of us about the potential dire changes to the planet brought about by climate change," says David Holland director of New York University's Environmental Fluid Dynamics Laboratory and NYU Abu Dhabi's Center for Global Sea Level Change conducted the research. "If these waters are causing glacier melt in Antarctica, resulting changes in sea level would be felt in more inhabited parts of the world." This is one of the most significant glaciers in the world in the terms of global sea level rise—its melting will raise global sea levels by nearly one meter possibly flooding populated areas causing millions of people and animals to be climate refugees.

Therefore, migrating cold water fish need silt free, cold, clean living water and shady, diverse lush cool, coastal and mountain forests the PNW bioregion has had to offer. And in turn the forests and streams need the salmon a nutrient rich symbiotic mutual relationship that has allowed wild salmon and the ancient forests to thrive in the Pacific Northwest Bioregion for millions of years. If you make the trees sick and clear cut the forests it harms and kills salmon. Wild salmon and clear cuts have nothing in common. So stream bed buffers, forest, watershed, and aquatic habitat protection are crucial for cold water fish survival.

According to page two of the Agenda Item Summary of the January 17 2020 Fish and Wildlife Commission Meeting document reads-- **Aquatic habitat is not listed as a priority for protection or restoration in ODFW Aquatic Habitat Prioritization, Species Conservation, or any other ODFW management plan. (pg 2 of 4)**
https://www.dfw.state.or.us/agency/commission/minutes/20/01_Jan/B/Attachment%201_Agenda%20Item%20Summary.pdf

In closing, scientists warn that climate catastrophe is on the horizon if we do not lower our emissions of green house gasses and methane production somebody tell Oregon's senate Republicans. "We must begin to pull CO2 out of the atmosphere," says Ralph Nader * Climate Scientists are warning that in less than eight years there will no longer be any ice atop of the Himalayas and that there will no longer be glaciers and no huge sheets of ice in Greenland and that we might be experiencing ice free winters in the Arctic in less than five years. At that time there will be no way to block the Earth's oceans from the rays of the sun; leading to increased ocean temperatures, increasing ice melt and thus leading to increased sea rise and coastlines underwater and drinking water aquifers contaminated by saltwater.

Thank You for your time and consideration.

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Sources

1. Record-Setting Ocean Warmth Continued in 2019 (Institute of Atmosphere Physics, Chinese Academy of Sciences by Jiang Zhu
 - 2.. <https://aslopubs.onlinelibrary.wiley.com/doi/pdf/10.1002/lol2.10137>
 3. https://www.researchgate.net/publication/326063101_Tire_Abrasion_as_a_Major_Source_of_Microplastics_in_the_Environment
 4. <https://doi.org/10.1016/j.scitotenv.2020.136610>
 5. <https://video.nationalgeographic.com/video/news/00000155-0cbb-d75d-ab75-6cfbc86e0000>
 6. "The End of Ice," Dahr Jamail. 2019. <http://www.dahrjamail.net/2018/10/08/the-end-of-ice>
 7. <https://www.readcube.com/articles/10.7554/eLife.02245>
 - 8 https://ralphnaderradiohour.com/?powerpress_pinw=4478-podcast
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