To: Chair Dembrow, Vice-chair Olsen
Members of Senate Committee on Environment and Natural Resources
Chair Helm, Vice-Chair Power, Vice-Chair Reschke
Members of House Committee on Energy and Environment

From: Bob Van Dyk, Wild Salmon Center
Chandra Ferrari, Trout Unlimited
Brad Warren, Working Group on Seafood and Energy
Bob Rees, Association of Northwest Steelheaders

Re: Cap and Invest Legislation

Date: February 7, 2018

My name is Bob Van Dyk, and I am the Oregon and California Policy Director for Wild Salmon Center. I am pleased to offer these comments today on behalf of several organizations who are concerned with the health and sustainability of our fisheries.

Our organizations support action by Oregon to both reduce our contribution to climate change and to proactively address the harmful effects of climate change on Oregon's natural resources.

The Cap and Invest legislation before you today represents a strong step in the right direction, and we encourage you to pass this bill in 2018. We continue to work with the committee on amendments to ensure the bill puts a strong focus on addressing the effects of climate change on Oregon's natural resources.

Climate Change Will Harm our Natural Resource Economy

Climate change threatens very negative consequences for both the economy and the environment in Oregon. No longer is climate change a potential threat in a distant future. In fact "Oregon's climate has already warmed considerably, and the cause is most likely rising greenhouse gases."[1]

Among the most important effects on Oregon will be increased pressure on our water resources. The timing and character of precipitation and stream flows will change.[2] There will be larger floods. Less snow will fall, and it will melt earlier. Sea levels will rise. And of course there will be more demand for water as more people move to Oregon. Significant changes are in store for our forests, too, as the fire season lengthens and habitat types shift.

Many of the impacts from these changes will be most acutely felt in rural areas that rely more on our natural resources. Farming, ranching, forestry all face new challenges, as do our valuable fisheries.

[1] Dalton, M.M., et. al. (2017) The Third Oregon Climate Assessment Report, Oregon Climate Change Research Institute, College of Earth, Ocean and Atmospheric Sciences, Oregon State University, Corvallis, OR.

[2] The Third Oregon Climate Assessment Report finds that "**The 2015 snow drought foreshadows mid-century normal conditions.**" At page 6. Bold in original.

Effects on Fisheries

Oregon's fisheries have been a sustainable economic anchor for decades. A 2011 report estimated our sportfisheries supported more than 11,000 jobs and generated $1.2 billion in economic output.[3] The personal income from Oregon's commercial fisheries in 2015 was estimated to be $489 million by ODFW.[4] These economic drivers are threatened by climate change. Freshwater[5] and marine environments[6] both face harmful changes.

Need for Investments to Adapt for Sustainable and Resilient Natural Resources

Substantial investments are needed to protect and sustain our natural resources, including our fisheries, in the face of climate change pressures.[7] Our organizations thus request that the Cap and Invest legislation be amended in two ways.

First, we suggest that the bill direct an immediate start to cooperative planning by our natural resource agencies to develop strategies for adaptation and resilience in the face of climate change. Such planning should direct the completion of a periodic multi-agency report that can identify investments and policies needed to help sustain our rich natural resources in the face of climate change.

Second, we suggest a clearer and larger dedication of proceeds from the bill to fund the kind of conservation measures identified in climate planning. We are confident that many of the investments will not only assist our fisheries, but also help rural Oregon.

Thank you again for the opportunity to testify, and we look forward to continuing to work with you to pass this important legislation this session.

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[3] American Sportfishing Association, 2011 estimate. http://asafishing.org/wp-content/uploads/Economics_of_fishing_in_Oregon_Rev.pdf

[4] http://www.dfw.state.or.us/agency/docs/OR%20Comm%20Fish%20Ec%20Impacts%20Brief%202015.pdf

[5] *Freshwater Effects*:

- Warmer temperatures will mean less snowpack and less water for fish, especially in the summer.
- Earlier snowmelt will change streamflow timing that salmon have evolved to use.
- Higher winter streamflows increase the risk of scouring of the streambeds where salmon spawn.
- Increased temperatures will create more lethal conditions for salmon, steelhead, and bull trout, which are coldwater fish.

[6] *Marine and Coastal Effects*:

- Loss of estuarine habitat due to sea level rise.
- Warmer oceans that provide less food for salmon and more predators.
- Broad potential disruptions in the food chain due to ocean acidification (OA) and hypoxia (low oxygen levels).
- Crab, mussel and clam harvests disrupted by increasing toxic algae blooms linked to warm, high-CO2 water.
- Acidification forces costly adaptive maneuvers to protect young oysters from acidified seawater.
- Overheated river waters kill returning adult salmon.

[7] Examples of investments for salmon and steelhead include protecting cold water sources, protecting and restoring key habitats, installing climate resilient fish passage, replacing tide gates, and restoring estuary eel grass.