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February 7, 2020
The Honorable Brad Witt, Chair
House Committee on Agriculture and Natural Resources
Oregon State Legislature

Good afternoon Chairman and Members of the Committee.

My name is Francis Chan. I am an Associate Research Professor and the director of the Cooperative Institute for Marine Resources Studies at Oregon State University. As a scientist working to understand how our ocean is changing, I very much appreciate the committee's attention to the challenges that Oregon's vibrant coastal ecosystem and economies are facing.

Oregon's coastal oceans are on the frontlines of ocean acidification and hypoxia or low oxygen conditions. It was the Dungeness crab fleet who first alerted scientists like me to the appearance of hypoxic zones when they discovered dead crabs in their pots. It was Oregon shellfish growers who first made clear the direct costs of rising acidity when they could not grow seed oysters that's the basis of a \$100 million plus industry. We've learned a lot more since those events. We now know that just as we have a wildfire season on land, we have a hypoxia season that returns each summer in the sea. As these low oxygen zones form, Dungeness crabs are in poorer condition, and fish like halibut can move away from traditional fishing grounds. We also know that ocean acidification is not just an oyster problem. The shells of young Dungeness crabs including those collected from Oregon waters are already showing signs of dissolution from ocean acidification. The list of marine life we now know to be impacted by ocean acidification in the scientific literature grows every month and now includes rockfish, salmon, and shrimp.

Our coastal ocean is moving into uncharted territory. Tomorrow's ocean will be more acidified, and more oxygen-poor. But, there's much that Oregonians can do to prepare for what is ahead for us. We need to know where things are changing and how fast. Already, coastal residents up and down the coast are working with scientists like myself to detect and track ocean acidification in sentinel sites like marine reserves. With information comes solutions. OSU scientists are working with Oregon's high tech sector to provide the commercial Dungeness crab fleet with smart and rugged crab pot mounted oxygen sensors that tell them if they are dropping pots into a low oxygen zone, so they can avoid wasting fuel and resources. In turn, they're also our partners in ocean monitoring. From the OAH Coordinating Council we have a road map, with the Oregon Ocean Science trust we have an institution. HB3114 is a key remaining piece. It represents an investment in partnerships to arm fishermen, coastal residents and managers with the best possible information so that we can all be effective stewards of the state's unique ocean resources. I thank this committee and the chief sponsors of the bill, Representative Gomberg, Representative Brock Smith, Representative Wright, and Senator Anderson for their leadership in helping Oregonians to be ready for the sea changes ahead.

Sincerely,

A handwritten signature in black ink, appearing to read "Francis Chan".

Francis Chan, PhD

Associate Professor Senior Research

Director, Cooperative Institute for Marine Resources Research

Oregon State University