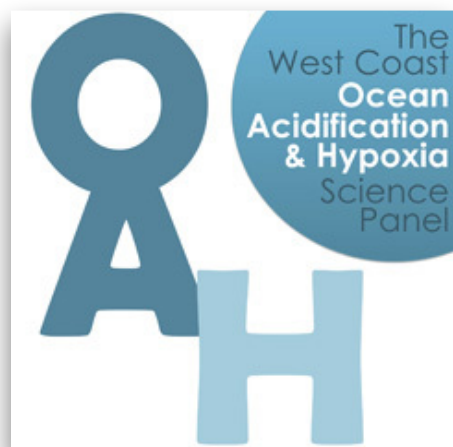


The West Coast Ocean Acidification and Hypoxia Science Panel



In marine science, no issue is currently receiving more attention than ocean acidification (OA), a progressive increase in the acidity of the ocean over an extended period.

Over the past 250 years, rapid growth in fossil fuel burning, and land use changes have caused a dramatic rise in CO₂ emissions. About 1/4 of these human-generated emissions – some 550 billion tons of CO₂ - have been absorbed by the oceans. Through a well-understood series of chemical reactions, CO₂ has an acidifying effect when dissolved in seawater. As a result the average acidity of the surface ocean has increased about 30% since 1750.

OA can be more severe in areas where decaying algal blooms- sometimes exacerbated by human impacts such as nutrient runoff- contribute to high CO₂, low-oxygen conditions (hypoxia) further increasing acidity.

Many life processes, including photosynthesis, growth, respiration, reproduction, and behavior are sensitive to CO₂ and pH. Ocean acidification leads to conditions that are chemically corrosive and especially problematic for shellfish but also has the potential to affect a wide range of other ocean organisms, from seagrasses to fish, in many different ways. The current rate of acidification is nearly 10 times faster than any time in the past 50 million years, outpacing the ocean's capacity to restore oceanic pH and carbonate chemistry. This rate of change also gives marine organisms, marine ecosystems, and humans less time to adapt, evolve, or otherwise adjust. At current rates of global CO₂ emissions, the average acidity of the surface ocean is expected to increase by 100–150 % over pre-industrial levels by 2100.

In summer 2013, Governor Kitzhaber's office formally aligned Oregon with California efforts to implement the West Coast Ocean Acidification and Hypoxia (OAH) Science Panel. The Institute for Natural Resources (INR) is working with the California Ocean Science Trust (CalOST) to convene 18 experts from Oregon, California, and Washington. The panel is charged with synthesizing and interpreting knowledge from the scientifically diverse and rapidly evolving OA and hypoxia field of research, and identifying research and monitoring priorities critical to the West Coast's future. The Governor's Office, DLCD, DEQ, ODFW, ODA, and the Research Office at Oregon State University are supporting Oregon's participation.

For additional information, contact Jeff Behan at Jeff.Behan@oregonstate.edu