

“Conclusions” slide from the end of Dr. Burke Hales’ presentation at 1st Presbyterian Church of Newport, January 31, 2010.

Dr. Hales is an Oceanographer at Oregon State University.

His presentation addressed oceanic effects of rising CO₂ levels in the atmosphere.

EOC refers to “Enhanced Ocean Corrosivity”, or the increased capacity of ocean water to be corrosive, especially to organisms with calcium-based shells. Hypoxia refers to concentrations of oxygen that are close to, or have reached, zero.

Conclusions

- EOC is underway, and impacting coastal settings before open-ocean effects are predicted to happen.
- Oregon coastal waters are particularly sensitive to EOC because of natural processes, and rising atmospheric CO₂ levels may be pushing us past important biological thresholds.
- Hypoxia and corrosivity go hand in hand. O₂ consumption leads to CO₂ production. Hypoxic events are also unavoidably corrosive events. If there is a climate-change link to hypoxia, it will also be a link to enhanced corrosivity.
- The OR coastal ocean, when functioning ‘properly’ supports massive productivity and fisheries, sequesters atmospheric CO₂, while avoiding extreme hypoxia and EOC.
- The natural variability of ocean-water corrosivity may be giving us opportunities to study future environments and adaptive strategies.