Abstract

The summer stratification of the surface layer of much of Hood Canal (a Puget Sound fjord) results in a surface layer low in nutrients and a deep layer low in dissolved oxygen and enriched in nutrients. Deviations from the dissolved oxygen:nutrient linear relationships are manifestations of several chemical and biological processes. The low dissolved oxygen concentrations (50 μmol) result in the redistributions of Fe in the sediment column while Mn is redistributed within the water column. Trace metals are also taken up by organisms in the surface layer and regenerated in the deep layer in the order Zn>>Cd>Cu=Ni

Regenerated Zn is adsorbed on to resuspended bottom sediments that are enriched in Fe oxyhydroxides while Cd is adsorbed throughout the water column. Particulate distributions of Cu and Ni indicate these metals are also participating in biogeochemical cycles, albeit to a lesser extent.