



## **The vulnerability of the Strait of Georgia (Canada) to future hypoxia and ocean acidification**

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The Canadian Pacific coast is filled with fjords and islands. Circulation in the region is dynamic, so that large changes in acidity (pH) and oxygen may occur both in space and time. The Strait of Georgia (Canada) is a large (200 X 30 km) semi-enclosed basin, that has relatively low pH with respect to the adjacent outer coast and yet hosts a lucrative aquaculture industry. On the other hand this region is relatively well oxygenated due to gas exchange in the turbulent (tidal) flow in the narrow Straits with sills connecting it with the outer coast. We investigate the role that this intense gas exchange plays in protecting the Strait of Georgia from future hypoxia and ocean acidification. Finally, we contrast surface water properties (including dissolved inorganic carbon and total alkalinity) measured on large ships with those measured nearshore and at shore-based aquaculture sites within the Strait.