

Projected coastal hypoxia in a coupled bio-physical model of the California Current System.

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Recent observations have shown an increase of the hypoxic area on the shelf in the California upwelling system. Climate projections suggest this increase would continue over the 21st century. However, the low-resolution ocean component of today's climate models in this region are hampered by the flawed representation of upwelling and coastal processes. To achieve a more realistic solution, we ported the NOAA-GFDL biogeochemical model COBALT into the regional ocean model ROMS permitting a seamless representation of the biogeochemistry across scales. With the 7km California Current implementation, we carry out sensitivity experiments for the projected changes in biogeochemical and physical drivers of coastal hypoxia : oxygen and nutrients in source waters, solubility and upwelling-favorable wind. We describe here the results obtained and assess the relative impact of drivers of coastal hypoxia in this system.