

Impacts of climate change around the Noto Peninsula on the density stratification in Nanao Bay

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Stratification is one of major physical factors leading to hypoxia in coastal seas, while its strength may change due to climate change. In this study, the climate changes around the Noto Peninsula were analyzed using meteorological data observed over the past 90 years by Japan Meteorological Agency. The long-term variation of temperature, salinity and density stratification in Nanao Bay over the past 50 years was then investigated using hydrological data measured by Ishikawa Prefecture Fisheries Research Center. Decreasing trend in precipitation was detected in winter, although an increasing trend in precipitation and in the frequency of heavy rain (daily precipitation > 50 mm) were detected in summer. The density stratification from winter to spring is getting weakened over the last 50 years, associated with the decreasing trend in precipitation in winter. It is suggested that the long-term change in the strength of density stratification in winter at the shallow area of Nanao Bay was mainly controlled by salinity rather than water temperature.

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