

Impact of Tohoku Earthquake on Macrobenthic Fauna: Sanriku Waters

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Sanriku experienced the impacts of the Tohoku earthquake, Mw 9.0, and associated tsunami on March 11, 2011. This study investigates the effect of the Tohoku earthquake on the macrobenthos of the Sanriku area (depth range: 120m to 5600m). Core samples were taken 4.5 months after the earthquake struck. Turbidites were prominent in the core samples (Ikehara et al., 2014). To begin with, the macrobenthos in the cores were examined. This was followed by a comparison of this macrobenthic fauna with those before the earthquake (Kojima and Ohta, 1989). The decreasing macrobenthos abundance with water depth at Sanriku is a common observation around the globe (Rex et al., 2006). Post earthquake examinations of the Sanriku small macrobenthos (0.5mm to 1mm) show increased abundance in depths greater than 2000m. In addition, although the thickness of turbidites are not related to the water depth, observations from the current study show that as the thickness of the layer increases the abundance of macrobenthos decreases. There was an absence of large Nematoda (>1mm) in areas covered by more than 3cm thick turbidite layers. While large Arthropoda and mollusks (>1mm) were absent from areas covered by 5cm thick turbidite layers. It is inferred that these may have been transported by erosion or buried by the turbidities.