Effect of benthic filtering on abundance of primary producers in water column along an open sandy beach system

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Sandy beach is the commonest environment type in coastal settings facing the open ocean and comprises about 30% of the icefree coastlines worldwide. However, interactions between benthic organisms and the seafloor environment are less well understood for sandy beach ecosystems. In particular, interactions among benthic invetebrates and environments in the nearshore zone (water depths of <30 m and 2 - 3 km offshore from the coastline) remain poorly understood. We aimed to investigate the effect of benthic filtering by the suspension feeding shrimp *Austinogebia narutensis* (Decapoda: Upogebiidae) on the abundance of primary producers (chlorophyll *a* concentration) in the water column along the Kashimanada coast, central Japan, facing the northwestern Pacific Ocean. Chlorophyll *a* concentration in the bottom water decreased significantly with increasing population density of *A. narutensis* (density of the shrimp burrows), suggesting that suspension feeding of the shrimp reduces the abundance of primary producers may be abunded that the filtering effect of the shrimp has a profound impact on coastal marine ecosystems, and may have occurred in nearshore settings since the Mesozoic.

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