Dense occurrence of invertebrate burrows in the nearshore zone of sandy beaches: effect of benthic filtering on seafloor ecosystems

*Koji Seike[1,2], Kotaro Komori[1,2], Toru Tamura[1,2]

1. Geological Survey of Japan, National Institute of Advanced Industrial Science and Technology (AIST), 2. Department of Natural Environmental Studies, Graduate School of Frontier Sciences, The University of Tokyo

Sandy beach is the commonest environment type in coastal settings facing the open ocean and comprises ~30% of the ice free coastlines worldwide. However, interactions between benthic organisms and the seafloor environment are less well understood for sandy beach ecosystems. In particular, organism-environment interactions in the nearshore zone (water depths of <30 m and 2-3 km offshore from the coastline, sensu Short, 1999) remain poorly understood. Recently, Seike et al. (2020) revealed that 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. Suspension feeding of the shrimp reduces the abundance of primary producers in the bottom water. Here, we report a similar phenomenon from the nearshore zone of the Kujukuri coast, central Japan. Burrows of a filter feeding upogebiid shrimp occurred densely in the sea bottom where chlorophyll a concentration was remarkably low. We concluded 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.

References

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