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Mud shrimp burrows as traps of tidal-flat organic matters

The burrows of *Upogebia major* were examined in terms of bacterial abundance, electron transport system activity (ETSA) and organic matter content (total organic carbon [TOC], total nitrogen [TN] and chlorophyll *a* [chl *a*]). The values of each parameter in burrow sediment tended to decrease outwardly from the wall, while bacteria abundance was highest in the subsurface of the burrow wall. The levels of TOC and TN on the burrow wall were up to 3-times higher than those in non-burrow sediments, whereas no significant difference in chl *a* content was found between burrow wall and non-burrow sediments. These results suggest that fresh organic matter in the burrow wall is supplied from the tidal-flat surface, making the burrow environment a suitable niche for microbial populations (including both procaryotes and eucaryotes) in the sediment. The mud shrimp burrow functions as a trap for organic matter and thus, helps prevent the outflow of carbon and nitrogen from the tidal flat.