沿岸潟湖の有機炭素貯留に人工的な湖口開削が与える影響
Construction of an artificial outlet channel affects organic carbon accumulation in a coastal lagoon

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Organic carbon (C_{org}) storage is one of the important functions of vegetated coastal ecosystems for mitigating the adverse effects of climate change. The artificial alteration of landforms by coastal constructions would impact on habitats, hydrological conditions, and sediment loads. However, how the coastal constructions change C_{org} accumulation in vegetated coastal ecosystems is poorly understood. In this study, the sediment profiles of geological and biogeochemical characteristics were measured in Komuke Lagoon, Hokkaido. Stable isotope ratios and ^{210}Pb profiles were used to investigate the origin of C_{org} and sediment age. We showed that C_{org} accumulation rates and the origin of accumulated C_{org} significantly changed after the construction of an artificial outlet channel. C_{org} accumulation was enhanced, the contribution of terrestrial-derived C_{org} decreased, and that of microalgae- and seagrass-derived C_{org} increased after the coastal construction at the site. These findings indicate that the construction of an artificial outlet channel alters the frequency of seawater exchange and affects habitat types and C_{org} accumulation.

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