

Carbon flows in estuarine and shallow waters: blue carbon study

KUWAE, Tomohiro^{1*} ; TOKORO, Tatsuki¹ ; WATANABE, Kenta¹ ; MIYOSHI, Eiichi¹ ; MOKI, Hirotada¹ ; TADA, Kazufumi²

¹Port and Airport Research Institute, ²Chuden Engineering Consultants Co., Ltd.

Blue Carbon, which is carbon captured by marine living organisms, has recently been highlighted as a new option for climate change mitigation initiatives. In particular, coastal ecosystems have been recognized as significant carbon stocks because of their high burial rates and long-term sequestration of carbon. However, unlike sequestration in terrestrial ecosystems, coastal carbon burial does not lead directly to an uptake of atmospheric CO₂. This is because the water column separates the atmosphere from benthic systems, and buried sedimentary carbon is composed of allochthonous sources in addition to autochthonous sources. Our research project is aiming to in situ measurements of carbon flows, including air-sea CO₂ fluxes, dissolved inorganic carbon changes, net ecosystem production, and carbon burial rates in estuarine and shallow waters.

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