

報告番 -	※ -	第
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主 論 文 の 要 旨

論文題目 Effects of groins on habitat environments and trophic relations in river estuary with references to *Corbicula* bivalve populations

論文題目(日本語) 河川感潮域におけるシジミ属二枚貝の個体群に着目した水制群が生息場環境と栄養関係に及ぼす影響

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論 文 内 容 の 要 旨

Groin was a structure extending outward from the bank with functions of deflecting the currents and waves and preventing from its erosion along coasts or rivers. Recently, other ecological functions have also been watched. It has been considered as one of the most effective methods to create diverse landscapes and to restore natural river ecosystem by changing hydrodynamic fields with geomorphic processes. On the other hand, river estuary is one of the most productive fields by providing the material and energy sources from both of the terrestrial and seaward ecosystem where the catches of dominant benthic organism, *-Corbicula* bivalves have been decreased tendency in the last several decades. A lot of groin structures have been installed in estuaries of alluvial rivers in order to protect and sustain adjacent urban and rural human societies. However, few studies have concentrated on *Corbicula* bivalves in the formed diverse landscapes due to the groin installations in the river estuaries.

Corbicula bivalves.

Potential food sources (suspend particulate organic matters) in upper and lower reaches were collected and were tried to relate to some types of *Corbicula* bivalves with species and size differences, in order to clarify the effects of different landscapes caused by groin installations on *Corbicula* bivalves' food sources variations. Based on signatures of carbon and nitrogen stable isotope ($\delta^{13}\text{C}$ and $\delta^{15}\text{N}$), it could be understood that the origins and dispersions of suspend particulate organic matters are relatively different in each of the location. Adopting the "Isosource" mixing model with these signatures, I could evaluate the food sources in each of the landscapes as follows: groin terrain and riparian vegetation probably influence the origin and distribution of suspend particulate organic matters (POMs); *Corbicula japonica* is selective filter feeder, mainly depended on terrestrial POMs; and *Corbicula leana* is opportunistic filter feeder, mainly depended on the suspended POM derived from neighbor water column. Therefore, the groins could effect on *Corbicula japonica* by trapping transported materials included their preferable food source.