

COST-BENEFIT ANALYSIS ON THE FIXATION OF CARBON IN ARTIFICIAL LAGOON UNDER DOMINANCE OF *CORBICULA JAPONICA*

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Studies on the carbon flux in lagoons under dominance of *Corbicula japonica* have been carried out since May 2000 to evaluate the fixation of carbon dioxide (CO_2) by *C. japonica*. Previous studies on *C. japonica* found that the filter-feeding bivalves, *C. japonica*, transfer organic carbon from the water column to the bottom as phytoplankton through ingestion and fixate calcium carbonate in their valves.

It has been pointed out, however, that the fixation of calcium carbonate decreases the solubility of carbon dioxide in the water and increases carbon dioxide in the air. So we evaluated the yearly carbon dioxide balance in an artificial lagoon, through estimation of the amount of carbon dioxide release and dissolution. The results indicate that *C. japonica* plays a role in dissolving carbon dioxide in the water.

In Japan, *C. japonica* is a very popular foodstuff, and its high commercial value has led to widespread fishery of it in Japan. We evaluated the cost and the benefits on the lagoon carbon dioxide budget by *C. japonica* to examine the conservation of lagoons under dominance of *C. japonica* and the construction designs of artificial lagoons for cultivating *C. japonica*.