

## Aftereffects of Hypoxia Exposure on *Ruditapes philippinarum* in Omaehama Beach, Japan

Yasunori Kozuki<sup>1</sup>, Ryoichi Yamanaka<sup>1</sup>, **Maya Matsushige**<sup>2</sup>, Azusa Saitoh<sup>2</sup>, Sosuke Otani<sup>3</sup> and Tatsunori Ishida<sup>1</sup>

<sup>1</sup>Ecosystem Design, Institute Technology and Science, The University of Tokushima, JAPAN

<sup>2</sup>Department of Ecosystem Engineering, Graduate School of Engineering, The University of Tokushima, JAPAN

<sup>3</sup>Research Center for Environmental Quality Management, Kyoto University, JAPAN

The objective of this study is to examine the aftereffects of hypoxia exposure on the suspension feeding activities of *Ruditapes philippinarum* and recovery of that. Hypoxic condition which usually means a dissolved oxygen concentration of less than 2-3 mg/L has occurred from every late spring until late summer in eutrophied Osaka bay, Japan. *Omaehama beach has remained one of the few natural coasts in the northern part of Osaka bay and plays the water purification functions because a lot of suspension-feeding bivalves such as *R. philippinarum* inhabit in shallow coastal areas (< DL-2 m in depth). A large amount of hollow shells of *R. philippinarum* were washed ashore of Omaehama beach after hypoxia occurrence. We could notice that the monthly variation of cohort group and the rate of *R. philippinarum* loss in Omaehama beach depended on the hypoxia exposure duration and the DO concentration of hypoxic water. There are very few descriptions of the after effects of hypoxic conditions on the suspension feeding activities of *R. philippinarum*, while a number of reports describe catastrophic mortality of benthic clams was caused by hypoxic waters in the eutrophicated bays.*

We conducted monthly investigation of *R. philippinarum* density along with measurement of DO, temperature and salinity at Omaehama beach in 2008. Moreover, exposure experiments of *R. philippinarum* to hypoxic water were carried out to measure the suspending feeding activity using the diatom *Skeletonema costatum*. In recovery experiments, hypoxia exposed *R. philippinarum* were put in the water with oxygen enough and feeding activity was measured every few days. Consequently, once *R. philippinarum* was exposed the hypoxic condition, the suspension feeding activities was reduced and recovered it after 60 days. In case of anoxic condition (DO=0.0-0.5mg/L), the number of *R. philippinarum* dying increased and the activity could never recovered.

Contact Information: Yasunori Kozuki, Ecosystem Design, Institute Technology and Science, The University of Tokushima, JAPAN, Tokushima, 770-8506 Japan; Phone: +81-(0)88-656-7335, Fax:+81-(0)88-656-7335, Email:kozuki@eco.tokushima-u.ac.jp