

Bioremediation of the organically enriched sediments by a polychaete, *Capitella*

**Hiroaki Tsutsumi⁽¹⁾, Kiyo Araki⁽²⁾, Hitomi
Nakamura⁽¹⁾, Kenichiro Hamada⁽³⁾, Naoko Ueda⁽³⁾,
Takako Tokuda⁽⁴⁾ and Shigeru Montani⁽⁵⁾**

⁽¹⁾ *Prefectural University of Kumamoto, Tsukide, Kumamoto 862, Japan*
Tel +81-96-3832929 Fax +81-96-3846765
e-mail: hiro@pu-kumamoto.ac.jp

⁽²⁾ *Graduate School of Kyoto University, Kitashirakawa Oiwakemachi, Kyoto,
Japan*

⁽³⁾ *Aqua Research Center, Tobata, Kitakyushu 804, Japan*

⁽⁴⁾ *Marine Bio, Inc., Sanraku, Yatsushiro, Japan*

⁽⁵⁾ *Kagawa University, Miki, Kita, Kagawa-ken, Japan*

Abstract

The environment of Dokai Bay in Kyushu, Japan, has been suffered from occurrence of dissolved oxygen depletion of the bottom water in the sea floor with organically enriched sediments which was accompanied with extreme eutrophication of the water. We have conducted the field experiments to treat the organically enriched sediments with biological activities of a deposit feeding polychaete, *Capitella* sp. I, aiming at further recovery of environmental conditions of the bay. Since the winter in 1996, we cultured dense colonies of *Capitella* in a factory, and put 1 to 3 kg WW of *Capitella* on the organically enriched sediments every winter. Due to the addition of the cultured colonies, the field population of *Capitella* increased more rapidly in early winter, and reached two to four times denser patches in the fields than before. The oxidation of the reduced sediments was enhanced by the increase of *Capitella*. This polychaete has a potential for biological agent to treat the organically enriched sediments.