

The Significance of Tidal Flats for Environmental Preservation

**Tohru Seiki⁽¹⁾, Etsuji Date⁽¹⁾, Jeoung Gyu Lee⁽²⁾,
Wataru Nishijima⁽³⁾, Tetsuo Mukai⁽³⁾, Kazuto
Takimoto⁽³⁾, Mitsumasa Okada⁽³⁾**

⁽¹⁾ *Hiroshima Prefectural Institute of Public Health and Environment center, 1- 6-
29, Minami-machi, Minami-ku, Hiroshima 734-0007, Japan.*

Tel +81-82-2557131 Fax +81-82-2528641

⁽²⁾ *Korea Ocean Research & Development Institute, Ausan P O. Box29, Seoul,
Korea. Tel +82-345-4085934 Fax +82-345-4006211*

⁽³⁾ *Hiroshima University, 1-4-1, Kagamiyama, Higashihiroshima 739-8528, Japan.
Tel +81-824-247622 Fax +81-824-227192*

Abstract

Physicochemical and biological characteristics in 19 tidal flats over areas of 5 ha in northern Hiroshima Bay were investigated and purification abilities for organic material were also examined in the three different types of tidal flats. Biomass of benthos in the 19 tidal flats were in the range of 0~34.0 g C · m⁻². Net purification rate (NPR) can be estimated from metabolism of organic material by microorganisms and benthos, assimilation by benthos and the primary productivity by benthic microalgae. The NPR by tidal flats were calculated to be 65-235 g-C · m⁻² · yr⁻¹ from material balance of this research. Total purification for organic material by tidal flats in the northern Hiroshima Bay corresponded to 4.7~12.7% of TOC external loadings.