Proceedings of the Eighteenth (2008) International Offshore and Polar Engineering Conference
Vancouver, BC, Canada, July 6-11, 2008

ISBN 978-1-880653-70-8 (Set); ISBN 1-880653-68-0 (Set)

STUDY ON CONSERVATION OF HABITAT NETWORK OF FIDDLER CRAB *Uca lactea* IN HYOGO PREFECTURE IN JAPAN

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ABSTRACT

The ecological network formation of fiddler crab *Uca lactea* which is one of the Vulnerable species in Red-data Book published by Japan Environment Ministry was considered. Study site is the tidal flats in Awaji Island which is located between Harima-Nada which is an open sea, Osaka Bay, Kii Channel and around there. In this study, first, to confirm the habitat distribution of *Uca lactea* in Awaji Island and main land, field observations were carried out. Secondary, to examine the possibility of the ecological network formation of *Uca lactea* around Awaji Island, the numerical simulations were run. Main results are as follows; 1) The habitats of *Uca lactea* in Awaji Island distributes on both east and west sides of Awaji Island. 2) In some of the habitats of *Uca lactea* in Awaji Island, the alternation of generations might be proceeding. 3) There is limited possibility that the movement of *Uca lactea*'s larvae can reach to other habitats which is located across-the-sea neighbor in one month.

KEY WORDS: *Uca lactea*; tidal flat; ecological network; Habitat Suitability Index

INTRODUCTION

In The National Biodiversity Strategy of Japan (The Ministry of Environment, 2002), nature restoration with the objective of recovering the ecosystems and other natural environments that have been damaged or destroyed in the past is one of the main subjects to be resolved. Keeping the local specific biota in good condition or restoring the damaged biota, it is necessary to select some core habitats where target species have been flourishing and conserve these habitats with due consideration for the formation ecological network.

Photo-1 *Uca lactea*

Especially, it is important to keep spatial continuity between water area and land for benthic animals which live in shallow water area, because most of them have several life stages in both water area and land.

Uca lactea, a kind of fiddler crab (Photo-2), which is the target species in this study was initially selected the Near Threatened species in Red-data Book published by Japan Environment Agency. However, this species has been selected Vulnerable species since 2006 due to be at increased risk of their extinction caused by habitat degradation.

The habitat of *Uca lactea* is sensitive to environment change of the coastal zone, they can be a characteristic species which indicate the significant of tidal flats which has been remained in the well developed closed water area. This species could be seen from anywhere in the coastal zone in western Japan, however, post world war II development