社会生態系として島根県高津川沿岸地の評価

Analyzing Rivermouth Environment in Takatsu River Basin as a Socioecological System with a Special Focus on the Decline of Hamaguri Clams

*Chakraborty Abhik[1]、佐々木 隆志
*Abhik Chakraborty[1], Takashi Sasaki

1.伊豆半島ジオパーク
1.Izu Peninsula Geopark

This poster presents the intriguing case of the Hamaguri clams (*Meretrix lusoria)* as an indicator of the complexity of socioecological systems. The Takatsu River is located at the Shimane Prefecture in west Japan, and flows into the Sea of Japan after cutting through narrow valleys through mountains. The mountains in the watershed have a rich broadleaf forest cover that is seen as an essential part of the complex nutrient flow through the basin that connects mountainous landscapes to coastal ecosystems. However, during the latter part of the 20th century, the coastal ecosystems started to undergo perceptible change, as evidenced by a dramatic decline of the Hamaguri clam (*Meretrix lusoria).* Over-collection of clams by fishermen is unlikely as local fishermen catch hamaguri by low impact methods focused on capturing a single clam at a time in this area. The decline therefore could be associated with a change in the complex web of nutrient flow, connectivity of the mountains and the sea and the capacity of the river as a flow corridor. The number of weirs increased on the river during the latter part of the 20th century, and a perceptible increase in the area of impervious concretized surface in the coastal areas took place. There is no reliable dataset on the long term trend of the hamaguri population, but according to reports by local fishermen, seabed conditions (seagrass beds, water turbidity level) have changed in a perceptible manner, and species not seen in the sea for generations have appeared recently. These trends suggest that the overall system is changing in a complex and interconnected way. The researchers conducted surveys to understand what conditions allow hamaguri clams to inhabit the coastal areas, which conditions could be detrimental, and the age profile of these clams. The findings indicate a slow recovery of the population in the recent years, but the threshold level of clam populations and their limiting factors remain quite poorly understood. As these factors are likely influneced by human interactions with the ecosystems, a socioecological framework is used to refect on the recent changes in population of this species ad its associated environment.