

## Understanding the coastal natural environment

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The tenth meeting of the Conference of the Parties (COP 10) was held in Nagoya, Aichi Prefecture, Japan. In this meeting, a target of 10% of the coastal and marine areas was set as marine reserves in Japan by 2020. In response to this, Marine Protected Area (MPA) in Japan has been clearly defined by “Marine Biodiversity Conservation Strategy” in 2011.

The crucial points are how to manage MPA, where to specify MPA, how to take appropriate measures and how to integrate management system (Shirayama et al., 2012). I would like to pay attention, especially, to the area specified as MPA.

Japan is surrounded by the sea from where we can benefit from fishery resources. Therefore, Japan's MPA are frequently intended for fishery resource management (see Minami, 2015). Consequently, there are a lot of places, such as tidal flats and seagrasses, put outside the adequate protection of the law.

My main object of study is gobiid fishes associated with mud shrimps living in tidal flats. The mud shrimp of the family Upogebiidae constructs almost permanent burrows with two surface openings. Their burrows are inhabited by a variety of organisms, such as bivalves, annelids, copepods, shrimps, crabs, and gobiid fishes (e.g. Itani, 2001). Most of such symbiotic animals are listed in Red List of Threatened Species in Japan. My research has elucidated details of the burrow utilization by the threatened gobies, which offer fundamental knowledge to conserve the gobies.

Coastal natural environment has highly important roles that maintain high biodiversity and productivity, ecological processes including water purification function, and so on. However, we have lost a large area of coast including tidal flats, seaweed beds, coral reefs, mangroves and the like due to

reclamation of the foreshore and seawall embankment work. It is required to maintain the ecosystem service by considering together the utilization and protection of the marine ecosystems. In addition, in order to understand the ecosystem of the coastal zone it is also important to continue investigations of species interaction in these habitats.

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