

Trans-disciplinary Approach of Marine Protected Area Designation in Tsushima

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Marine Protected Areas (MPA) are attracting attention not only for protecting biological diversity and conserving the natural environment, but also for promoting sustainable fisheries and tourism on the local level. Bottom-up style decision-making that respects each stakeholder's independence is needed to manage a protected area in a busy part of the sea subject to a host of various uses; it also promotes harmony among stakeholders.

Information about various weather phenomena known for generations by local fishers and coastal residents (e.g. traditions, experience, wisdom, historical documents, local history) fused with scientific knowledge and the latest technology can result in marine management methods well adapted to local conditions.

Surveys were conducted in Tsushima City (Nagasaki prefecture) and its adjoining seas, where marine protected area policy has been ongoing since 2010. As part of our consideration of "Collaborative oceanographic monitoring grounded in local knowledge," We checked for correspondance between good fishing grounds (marine area known to be ecologically important by fishers) and physical oceanographic findings.

Transdisciplinary approach as 1)collaborative oceanography, 2)Fish ecology assisted by environmental DNA meta-barcoding, 3) Ocean GIS mapping of local knowledge and status of sea weed bed, 4)Meteorological disaster risk reduction of fishery. activities. Trans-disciplinary research is essential to link latent oceanographic, ecological local knowledge to utilize in the process of MPA in changing climate situations.

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