Japanese-types of MPAs and self-organized MPAs by local communities in Japan

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Table of Contents

1. Japan‘s Ocean Policy and Characteristics of Japanese-types of MPAs
2. Some Examples of Japanese type MPAs: Shiretoko, Taketomi and Tsushima
3. Current and new Challenges

One of Aichi Targets aims to set MPA

Each country must set MPA to cover 10% of its EEZ by 2020

Types of MPAs in Japan covering 8.3% of the territorial sea and EEZ at present

Asian countries such as Japan have coastal areas with high population density and use them as fisheries grounds

Marine Biodiversity Conservation Strategy in Japan defined MPAs in 2011

The definition of MPAs is “Marine areas designated and managed by law or other effective means, in consideration of use modalities, aimed at the conservation of marine biodiversity supporting the sound structure and function of marine ecosystems and ensuring the sustainable use of marine ecosystem services.”

Base of Japanese-type MPAs

In water around Japan, about 1,900 species are identified as endemic to Japan.

50 species of Marine Mammals

Around 3,700 species of marine fish

122 species of sea birds

Japan‘s Ocean Policy on MPAs decided in 2013

Coastal fisheries areas commonly shared by local fishermen and managed under self-managements by them for sustainable use of coastal marine resources : Japanese-type MPAs

In Japan’s Ocean Policy To promote Japanese-type MPAs on which management plans are set for sustainable use of marine bioresources.

Japanese-type of MPAs as ”Common Fishery Right“ areas based on Fishery Act

Common Fishery Rights： Rights to fishery which jointly utilize certain water surface designated by the Agriculture, Forestry and Fisheries Minister as follows:

For example

1. Fisheries gathering algae, shellfishes, or other aquatic animals fixed on the sea bottom
2. Fisheries using fixed fishing nets or gears such as set nets
3. Seine fisheries without use of a powered fishing boat

Set-net fishery　net hauling

Off-shore trawler　net hauling

Small (coastal) trawler　fish sorting

Provide photos : Hideyuki Takahashi

Characteristic of Japanese-type MPAs

Areas under traditional self-management by local fishermen to maintain resources by flexible ways that regulations can't define

These areas are classified into "VI Managed Resource Protected Area" categorized by IUCN for a sustainable use of resources

Bottom-up management by local fishermen and community

It is impossible to set a no-take zone in coastal waters even in national park areas due to fisheries

Three common fishery right areas included in national parks are introduced as typic examples of Japanese type MPAs.

Example of Japanese-type MPAs

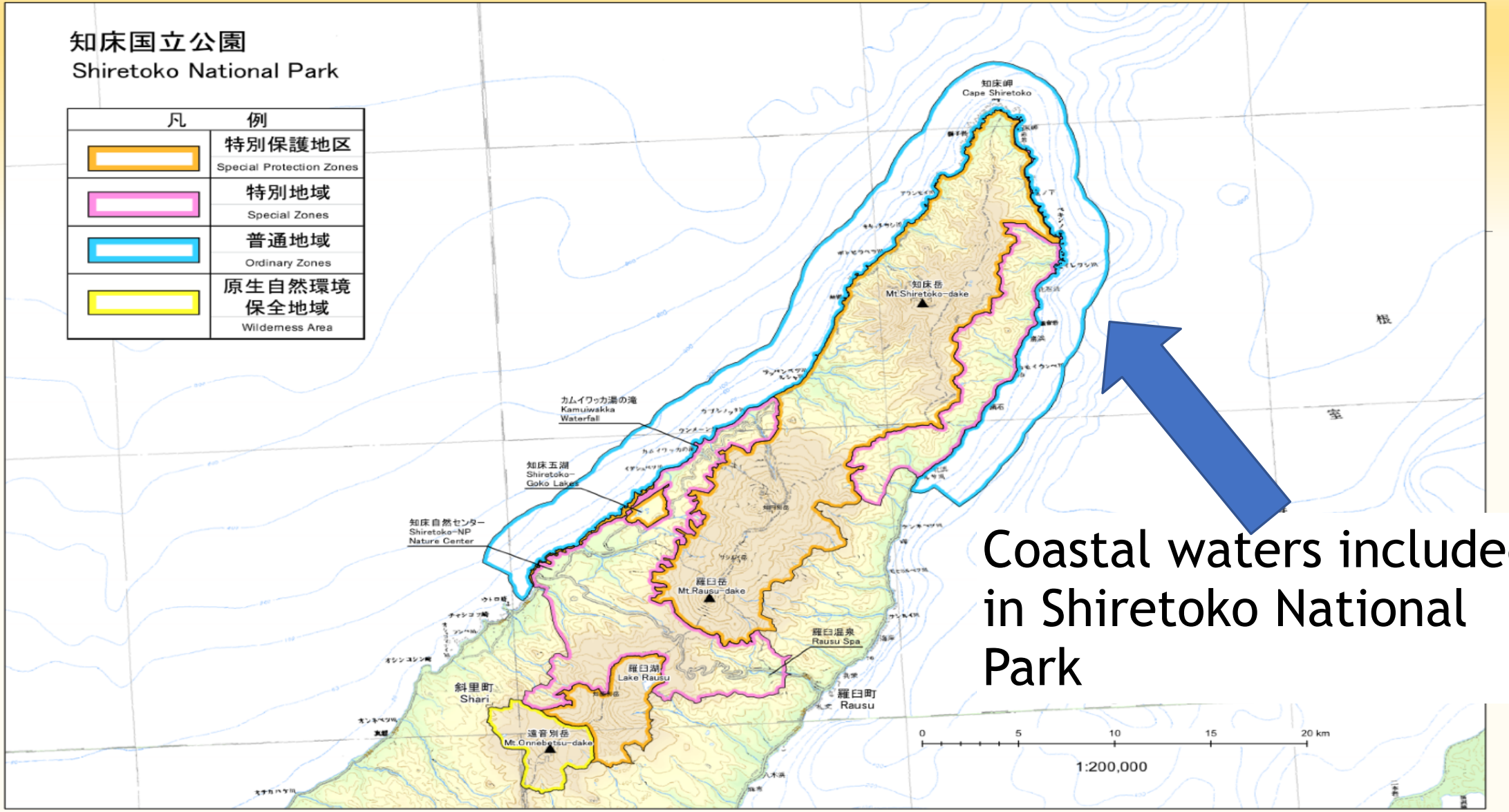
1 Shiretoko: MPA consisting of common fishery right area in World Natural Heritage Site in a boreal zone

2 Taketomi: MPA consisting of common fishery right area under the community marine policy in a sub-tropical zone

3 Tsushima : MPA consisting of common fishery right areas managed by fishermen's cooperative and local communities in a temperate zone

1 Common fishery right area in Shiretoko was listed as a World Natural Heritage Site in 2005

"Shiretoko System" gives fisheries roles to conserve ecosystem functions and structures under a cooperative management of fisheries in 2005 (Makino et al., 2009) and has been highly appreciated by UNESCO



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serce: Ministry of the Environment HP　*Available at*　http://www.env.go.jp/park/shiretoko/intro/files/area.pdf (last visited Nov. 1, 2017).


知床国立公園の見どころ
ゴマフアザラシ
Drift ice
知床岬
ヒグマ
オオワシ
知床半島
オホーツク海
観光船
シャチ
ホエールウォッチング
カムイワッカ湯の滝
流氷ウォーク
知床五湖
根室海峡
羅臼岳
フレペの滝
熊越の滝
流氷クルージング
羅臼湖

Adaptive management in Shiretoko marine ecosystem

The plan classified marine organisms into indicator species groups: keystone species, predators of higher trophic levels, endangered species and other characteristic species constituting the food web in the waters surrounding Shiretoko.

By monitoring these indicator species, a marine ecosystem in Shiretoko is continuously and adaptively managed.

it is necessary that stakeholders share information, and agree on the conservation on Shiretoko marine ecosystem to decide a policy for its conservation.

Examples of indicator species groups forming important ecological roles

Salmonoids: ex. securing natural spawning grounds

Marine mammals: monitoring and management of population

Sea eagles and seabird: protection

Alaska pollack (*Theragra chalcogramma*): resource

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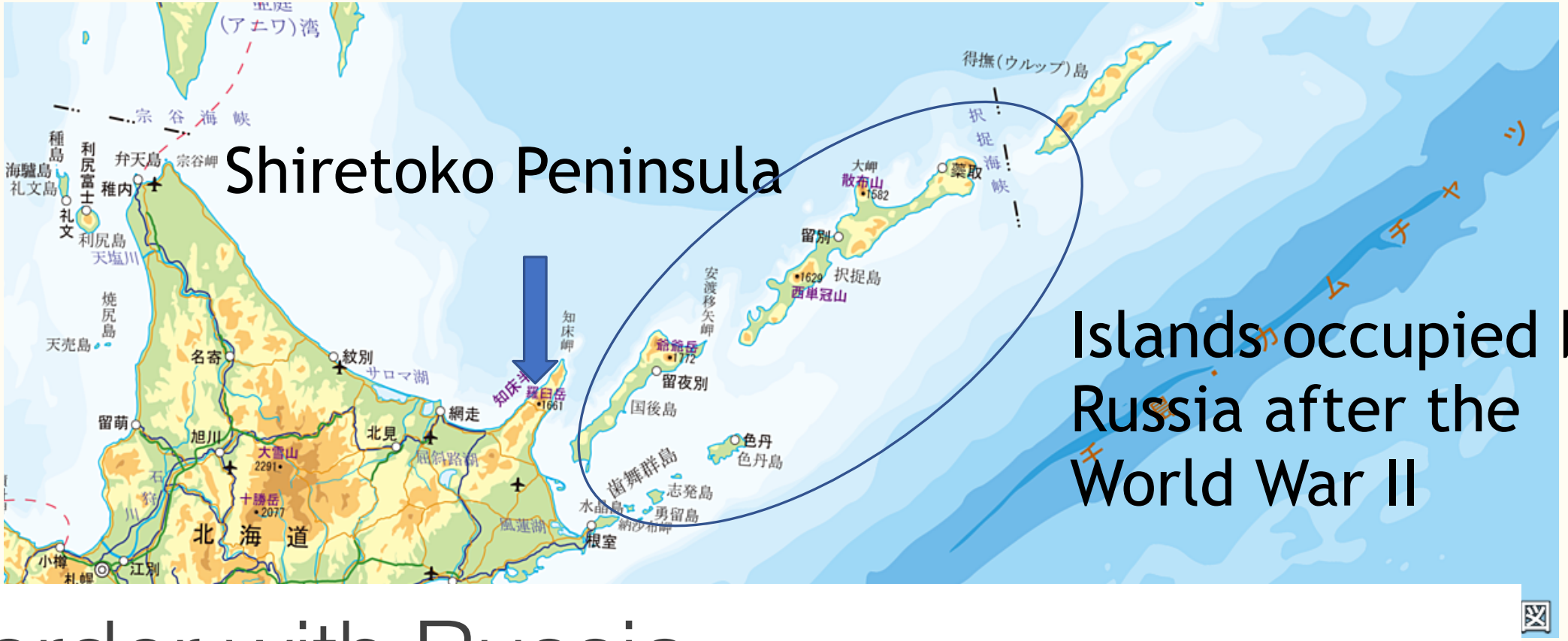
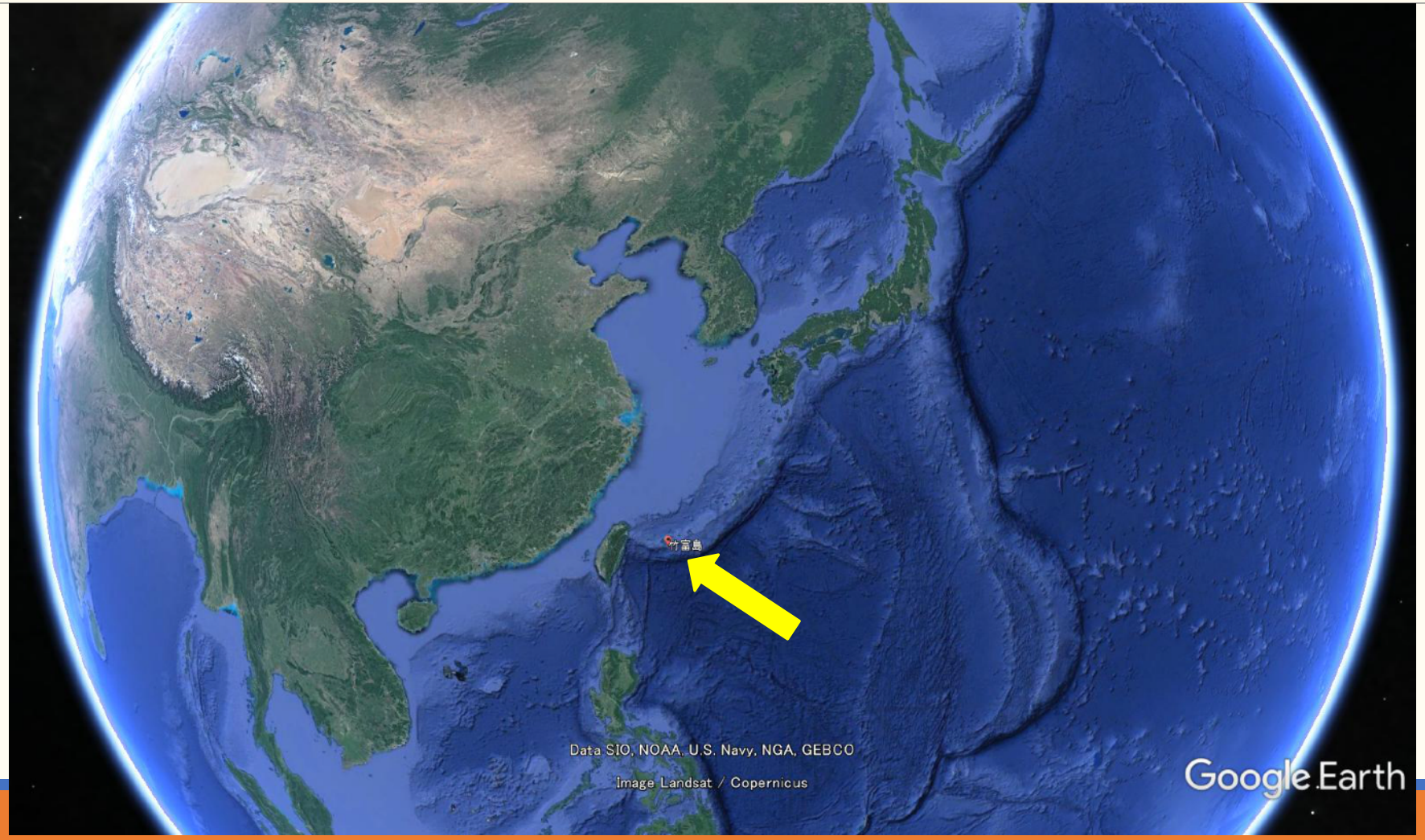
Alaska pollack (*Theragra chalcogramma*) needs adaptive resource management across the border



2 Teketomi Island and Sekisei Lagoon



Taketomi Island

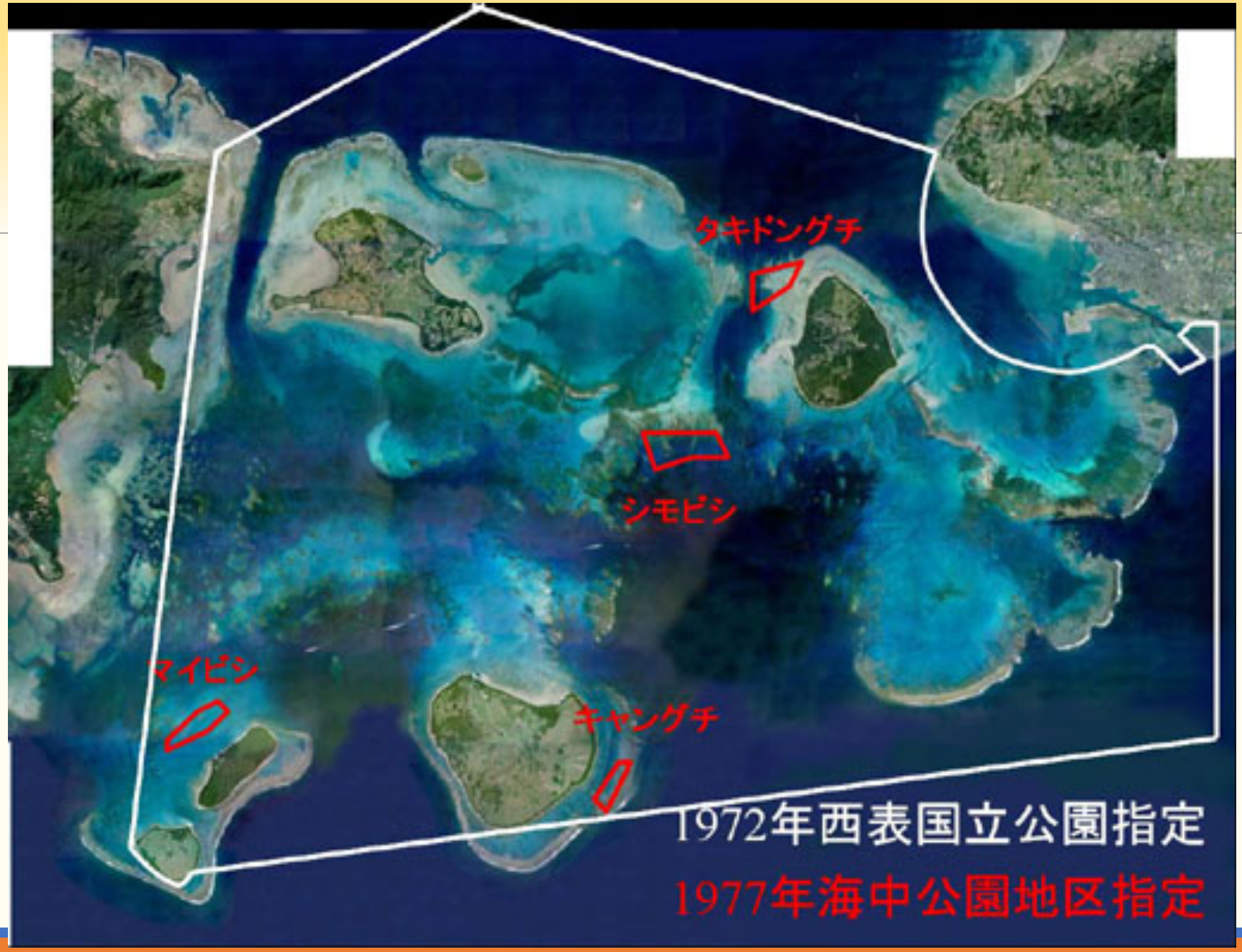
Preserve traditional houses

Taketomi MPA is included in Iriomote-Ishigaki National Park

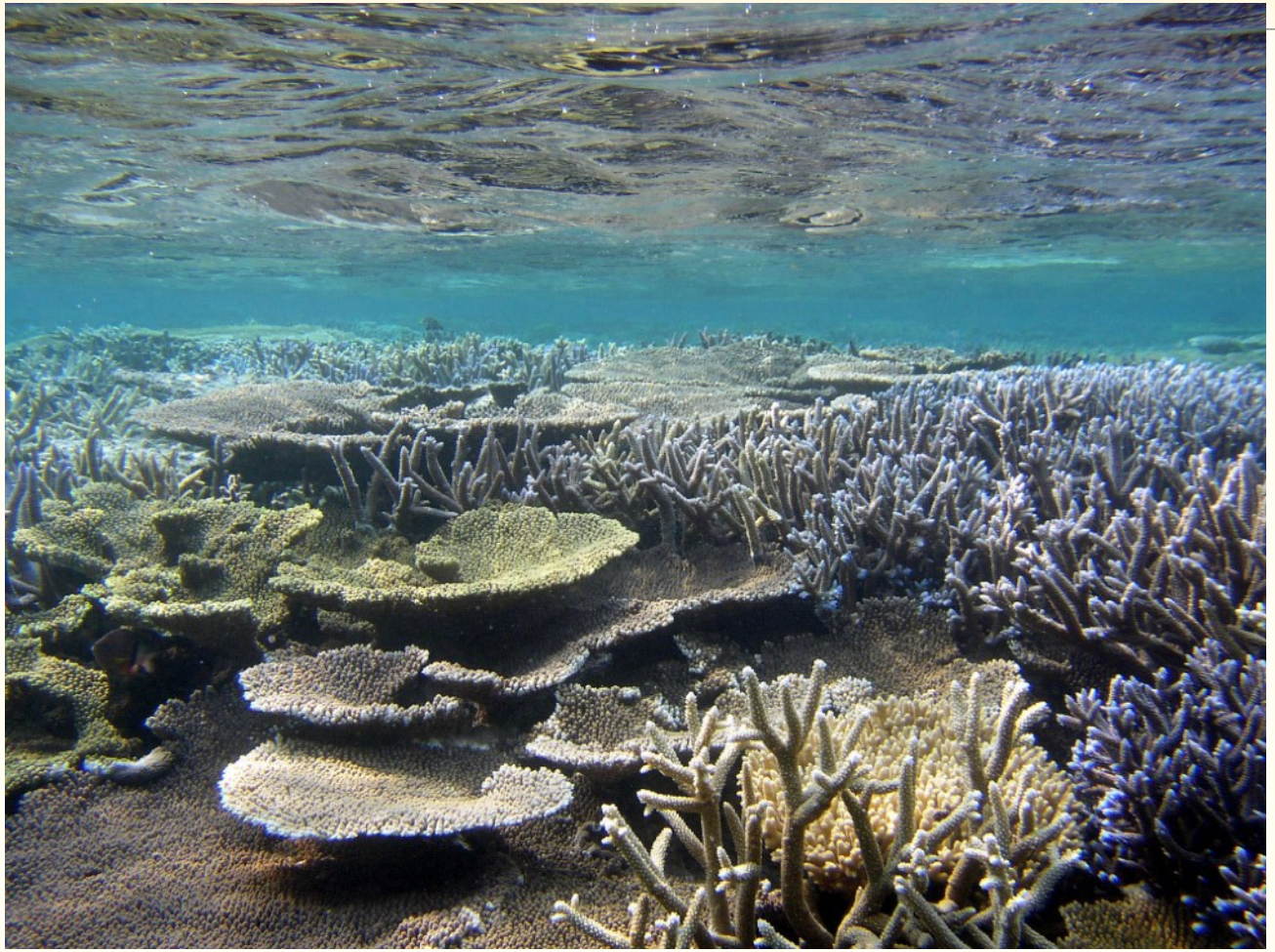
The largest coral reef in Japan

Ishigaki Isalnd

Taketomi Town consists of islands west of Ishigaki Isalnd


タキドングチ
シモビシ
マイビシ
キャングチ
1972年西表国立公園指定
1977年海中公園地区指定

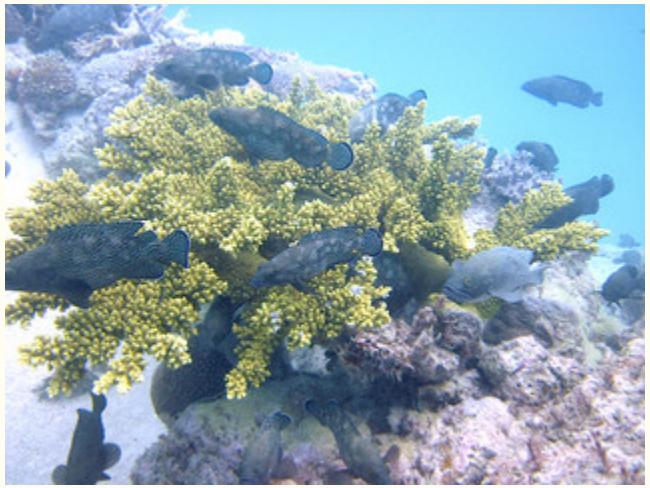
Coral reefs: habitat for biodiversity



Coral ecosystem must be conserved including fish because of interaction among species

fishery regulations decided by fishermen's cooperative

closure and open of fishing areas decision of prohibited areas
Penalty is payment equivalent to five times of catch

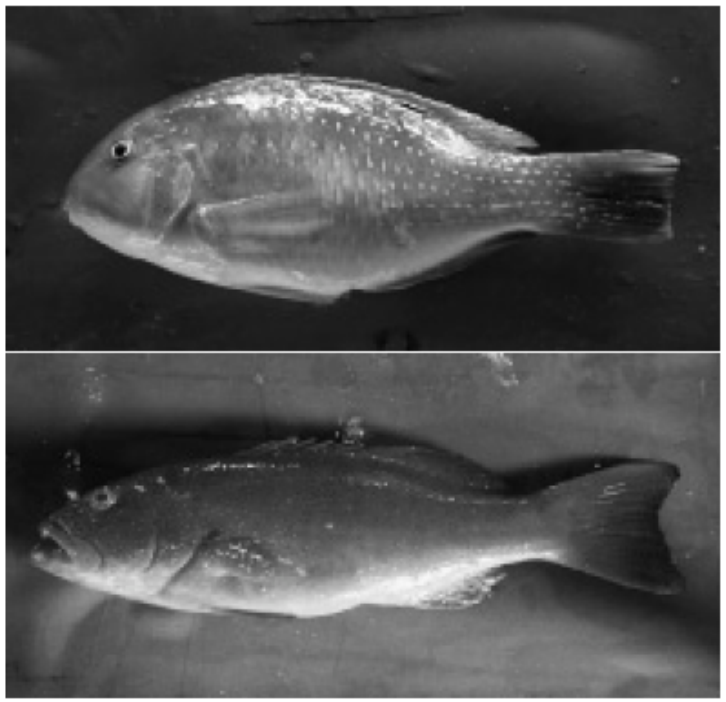


Sea bass *Epinephelus ongus*

http://www.y-mainichi.co.jp/news/27118/

fishery regulations

limiting the body length of fish by fishermen's cooperative



漁獲体長が制限されているシロクラベラ（上、尾叉長30㎝未満漁獲禁止）とスジアラ（下、同35㎝）。

Fishermen’s cooperative checks sizes of fish at the fish market for selling fish to brokers

Choerodon shoenleinii

Plectropomus leoparadus

Taketomi Town: MPA consisting of common fishery right area under the community marine policy

In 2011, Taketomi Town established the marine policy called community “Ocean Basic Plan” as the first attempt in Japan, which prescribed MPA.

In October 2017, 2nd committee for the community marine policy was held to discuss plans for more effective measures to conserve marine environments and to use fishery resources in a sustainable way.

3　Tsushima　: MPA consisting of common fishery areas managed by local communities

Squid, young bluefin tuna, yellowtail, scabbard fish, shellfish, seaweed, and so on, however they are declining

Setting restricted areas has no effects, and the catch continues to decline.

Common view on the crisis of fishery resources among fishermen

Tsushima; Borders with South Korea

History of MPA around Tsushima Island

In 2014, Scientific Committee on Tsushima MPA presented the report on Tsushima MPA to share objective information on marine environments, ecosystem and biodiversity among stakeholders and discuss on MPA from a point of view of science.

Tsushima MPA ≠ No Take Zone

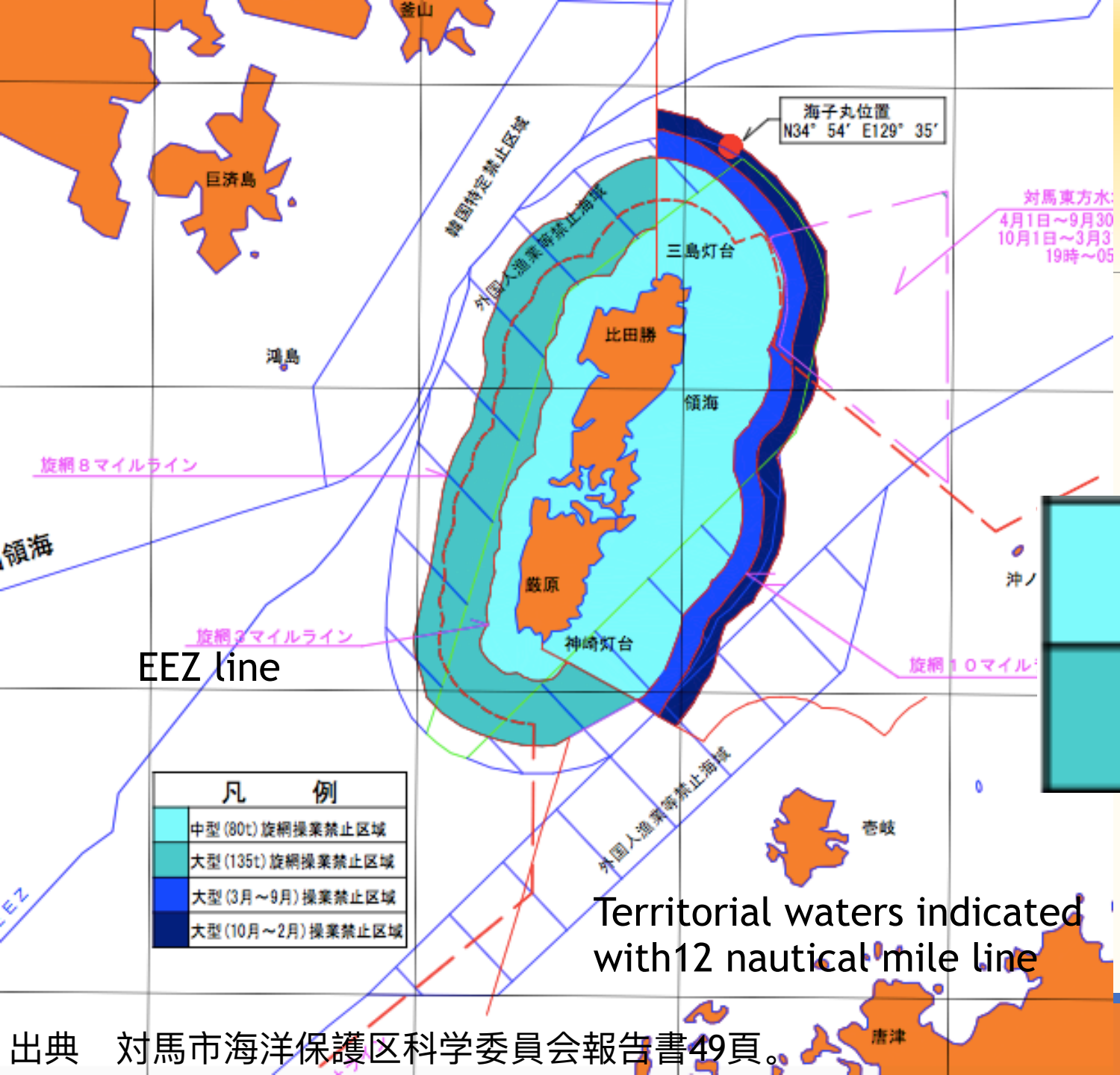
Asou Bay (ria coast)

Port of Fishing Vessel

Bottom-up management based on Common Fishery Right

Sea urchin fishing period is about several weeks in a year.
Open day, start and end time, tools and clothing are decided.

Setting of prohibited areas depending on fishing methods ; Prohibited area



EEZ line

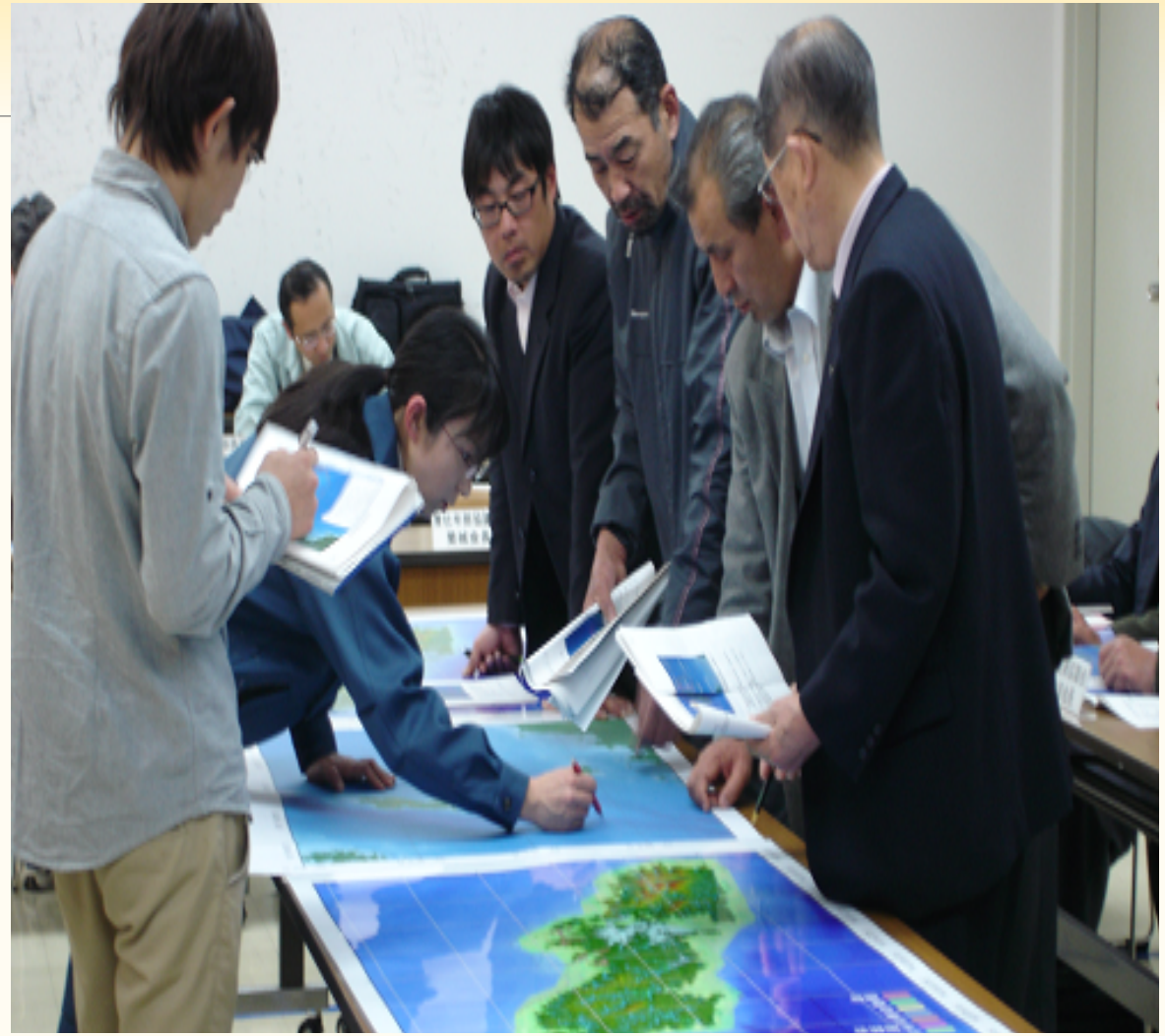
Territorial waters indicated with12 nautical mile line

operation of big purse seine vessels more than 80 ton

operation of big purse seine vessels more than 135 ton

出典　対馬市海洋保護区科学委員会報告書49頁。

Scientific Committee on Tsushima MPA



Current issues that must be overcome

1 Securing the effectiveness of management and preventing excessive overfishing outside MPAs

2 Coordinating MPA with other regional activities for conservation of biodiversity

3 Cooperating with neighboring foreign countries to prevent

foreign fishing vessels from conducting illegal fisheries and endangering local fishermen in MPAs located in borders

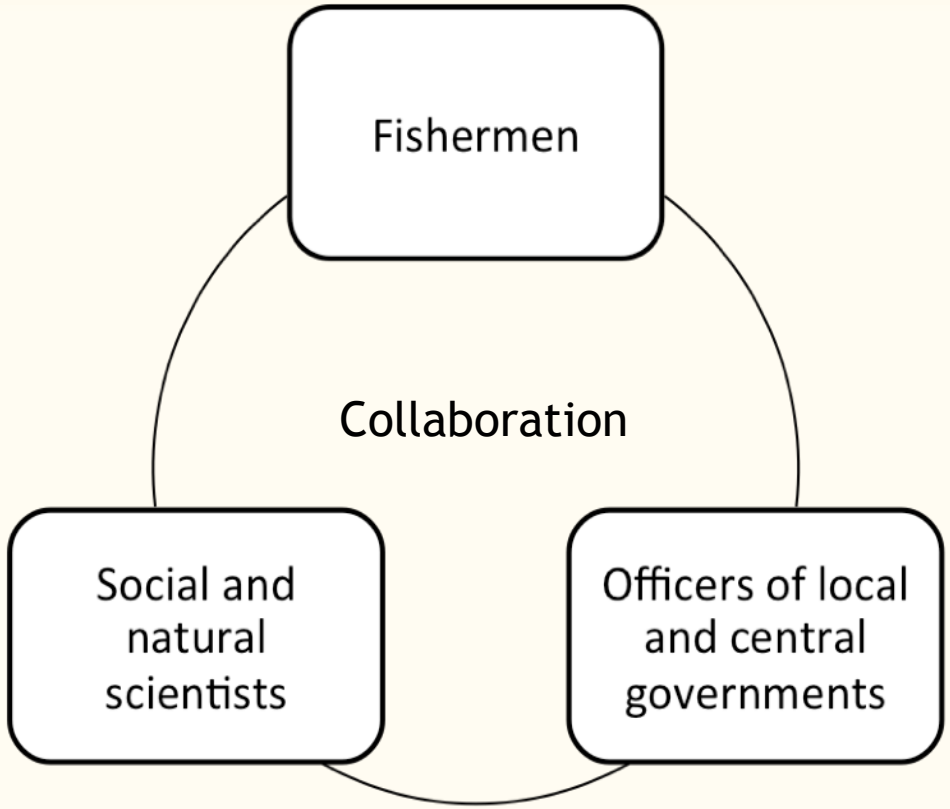
Future of Japanese-type MPAs

Experiences obtained by model MPAs introduced here must be transferred into other coastal common fishery right areas

Supports from central government to MPAs are needed to set and maintain MPAs.

Not only natural science but also social and human sciences are requested to support to set and maintain MPAs

Co-design, co-production and co-delivery: Future Earth!



Thank you for your attention !
Merci beaucoup de votre attention!

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