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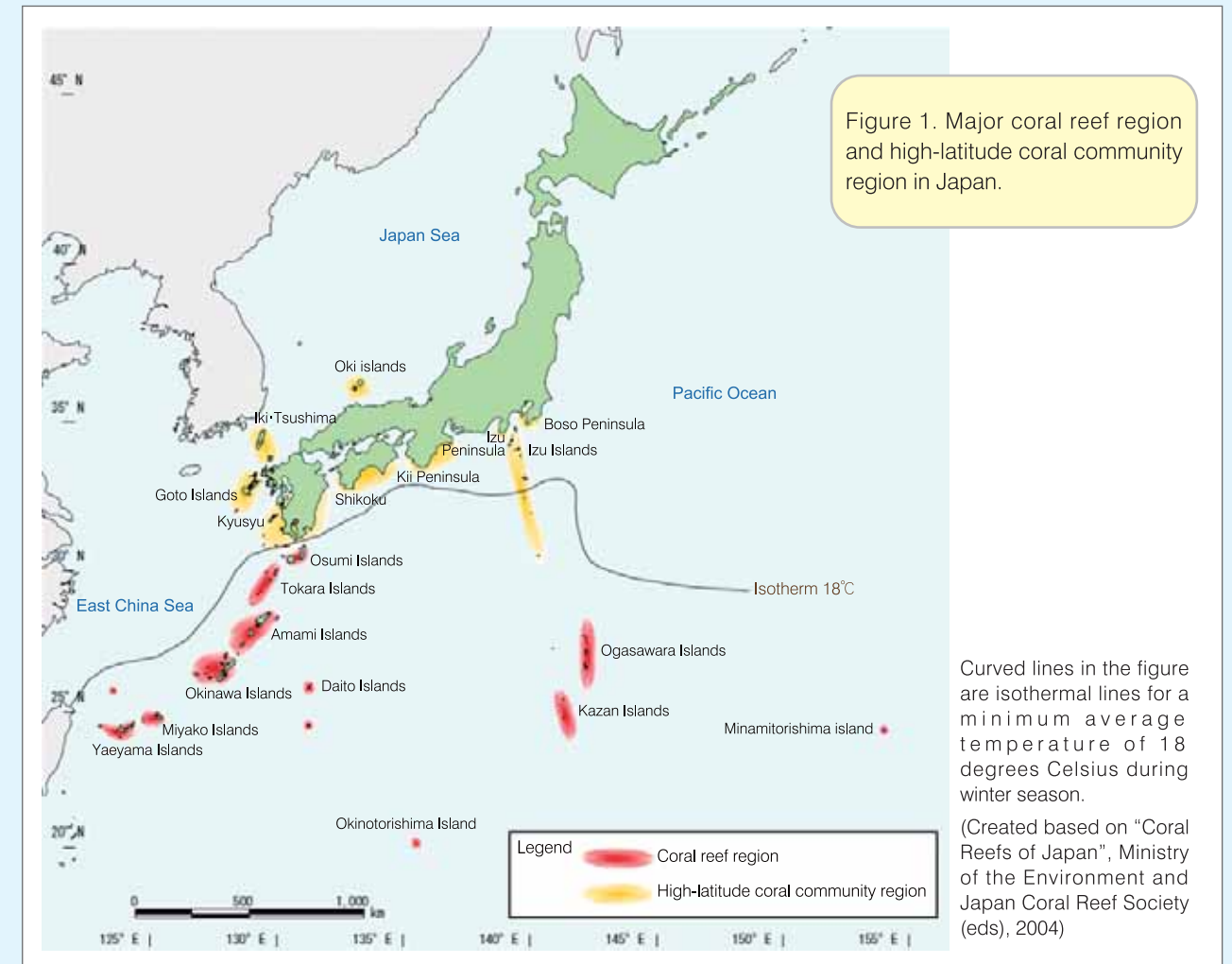
Ministry of the Environment  
Government of Japan



# Coral Reef Ecosystem in Japan and the Action Plan

## Coral Reef Ecosystem in Japan

Japan is located at the northern limit of coral and reef distribution; however, there are relatively many different coral species from a world-wide perspective, as the warm waters of Kuroshio current runs from south to north off the coast of mainland Japan in the North Pacific Ocean. Most coral species can be seen in Ryukyu Islands (in Okinawa Prefecture, and Amami Islands in Kagoshima Prefecture) in the southern part of Japan, then lesser towards north, in the areas such as Kyushu, Shikoku, and Honshu (mainland Japan). Ryukyu Islands and northern areas are estimated to have approximately 415 and 200 coral species, respectively.



### Value of Coral Reef Ecosystem

Coral reef ecosystem is important from a global biodiversity view, accommodating a variety of coral species, fish, shellfish, and many other marine organisms.

For humans, coral reefs in the tropical and subtropical areas provide fishery and tourism resources, along with the protection from waves as reefs serve as natural breakwaters in shallow coastal waters. Coastal Residents have been blessed with a long-term relationship with the coral reef ecosystem, creating unique cultures involving foods and folk customs influenced by and derived from reefs.

According to an estimate by the Ministry of the Environment (MOE), annual economic values provided by the ecosystem services derived from coral reef region in Japan were calculated at minimum as 1) 239.9 billion JPY (2.8 billion USD) for tourism and recreation, 2) 10.7 billion JPY (123 million USD) for commercial fishery, and 3) 7.5 – 83.9 billion JPY (86.4 – 964.4 million USD) for coastal protection (1 USD = 87 JPY), respectively.

### Status of Coral Reef Ecosystem

In coral reef region (e.g., Nansei- and Ogasawara Islands), the ecosystem has been seriously impacted by the sediment (red soil in Okinawa) and polluted water from inland, overexploitation by fishery and tourism industries, coastal development, outbreak of crown-of-thorns starfish, coral bleaching caused by the warmer ocean temperatures as a major factor, and disease such as white syndromes.

Sekisei Lagoon in Okinawa, for example, has lost a lot of its high coral coverage which covered more than 50% since the designation of the area as a national park in the 1970s. Fishery resources that are part of coral reef ecosystems are also declining at a rapid pace, due to degradation of coral reef ecosystem and overexploitation; statistics show the total catch of today as 1/3 to 1/5 of the peak yields in the older days.

# Overview of the Action Plan to Conserve Coral Reef Ecosystem in Japan

– For the Prosperity of Current and Future Communities Derived from a Lasting Healthy Natural Environment –

## Goal and objectives

The Action Plan aims to promote conservation (including restoration) of the coral reef ecosystem, while balancing their sustainable use and sustainable development of the local communities. Three objectives and supporting actions to address the abovementioned goal are as follows:

- a. Establish networks and organize information infrastructure among various interested and responsible parties domestically and internationally, in order to promote conservation and sustainable resource use of the coral reef ecosystem,
- b. Contribute to the establishment of local socioeconomic framework that benefits from appropriate use and management of healthy coral reef ecosystems, and
- c. Encourage further reef conservation efforts, including establishment of Marine Protected Areas (MPAs).

## Target Area

- Coral reefs and high-latitude coral communities in Japan.
- Coral reefs and related ecosystems such as seagrass beds, tidal flats, and mangroves.

## Stakeholders to the Action Plan

The Action Plan was developed by the Working Group of Action Plan for Coral Reef Conservation (WG-APCRC) organized by MOE, in cooperation with other national and local government agencies and academic societies. All participating organizations in the Working Group will commit to the proposed actions from their respective sides; cooperate for concerted conservation efforts; and pursue raising more awareness and understanding of the issues regarding coral reef ecosystem among various people, such as those engaged in the local economic activities including agriculture, forestry, fisheries, tourism, and other relevant private companies; committees and economic groups; schools, public community centers; researchers and academic societies, NGOs, media, and visitors. It is expected that each of the involved group acknowledges their close relationship with the coral reef ecosystem and take action accordingly, including participating in the outreach, conservation and restoration activities.

## Basic Policies

Three basic policies have been identified to pursue conservation efforts and sustainable use of coral reefs as follows:

### 1) Encourage Local Communities to Live in Harmony with Coral Reef Ecosystem

In order to slow down the degradation process of coral reefs while continuously receiving the ecosystem services, it is important to conserve the resources, and create a socioeconomic framework where people could continue to develop their communities with the natural blessings they receive from coral reef ecosystem.

### 2) Cooperative Efforts and Linkage among Organizations

For effective and smooth conservation efforts, facilitating cooperation among different ministries and agencies surely is a key to success. In local communities, it is necessary to promote implication and cooperation both in a community and among communities. In addition, coral reef ecosystem is fragile to climate change, which degradation and loss thereby is a worldwide concern. International cooperation and collaboration has become more and more important; for Japan, partnership among Asia-Oceania region is one of the essential ties.

### 3) Scientific Recognition, Preventive and Adaptive Attitude

Understanding coral reef ecosystems and awareness of its importance based on the scientific recognition is a vital part in balancing their conservation and sustainable use. Considering that life forms and ecosystems are dynamic, following are important based on the concept of "ecosystem approach":

- Preventive attitude that provides measures at an early phase based on the existing valuable information, while continuously expanding scientific knowledge base.
- Adaptive attitude that allows us to capture changes in the ecosystems with appropriate monitoring programs, and reflecting the results flexibly in the review of current management and resource use schemes.

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## Taking Action

### 1) Framework for Conservation of Coral Reef Ecosystem

<i>Promote cooperation among organizations for a community living in harmony with coral reef ecosystem</i>	Promote cooperation among various local conservation groups and responsible organizations in different areas, and establish networks so as to share information on their efforts and common challenges.
<i>International cooperation</i>	Promote international cooperation by collaboratively working on the establishment of foundation for various regional activities in East Asia, including networks for Marine Protected Areas (MPAs) for coral reefs, effective management schemes, and remedial action against impacts from climate change.
<i>Outreach and capacity building</i>	Promote customized outreach and education programs and ecotourism activities that go along reef conservation in order to raise more awareness and understanding about the importance of coral reef ecosystem in the local communities, further encouraging those informed citizens to take action from their respective sides. Support capacity building of those engaged in the relevant fields, including training for environmental interpreters.
<i>Collect and disseminate information and construct a framework of information</i>	Continue the existing survey and monitoring programs that aim to capture the status and transition of coral reef ecosystem, as well as collect, analyze, and disseminate the information obtained through such programs.

### 2) Sustainable Use of Coral Reef Ecosystem

<i>Appropriate management and use of biological resources</i>	Promote balanced approach in performing appropriate resource management and conservation activities, in order to conserve coral reef ecosystem and at the same time use the fishery resources in a sustainable way. Raising awareness about the role and value of coral reef ecosystem as well as the significance of fisheries in the local economy and culture is important in fulfilling this goal.
<i>Appropriate resource use for tourism</i>	Support establishing local rules and resource management schemes regarding tourism (including ecotourism) through participation from various groups, in order to use local resources in a sustainable way while balancing local development and environmental educational activities.

### 3) Conservation of Coral Reef Ecosystem

<i>Designation and management of significant areas</i>	Pursue conservation efforts by establishing Marine Protected Areas for corals of biologically significant areas, along with provision of restoration projects and appropriate management schemes where necessary. In establishing MPAs, more effective conservation methods will be explored considering the connection of coral communities in different geographic areas.
<i>Integrated watershed management connecting land and sea</i>	Pursue conservation efforts by tackling point- and nonpoint source pollution from the land (i.e., sediment and polluted water), one of the factors negatively affecting coral reef ecosystem; and further coordinate integrated watershed management approach that considers the connection between land and sea.
<i>Implement measures tackling different factors</i>	Continue to support programs involving removal of crown-of-thorns starfish and coral reproduction, along with sharing information obtained from such efforts, and pursue effective cooperation among different organizations.

