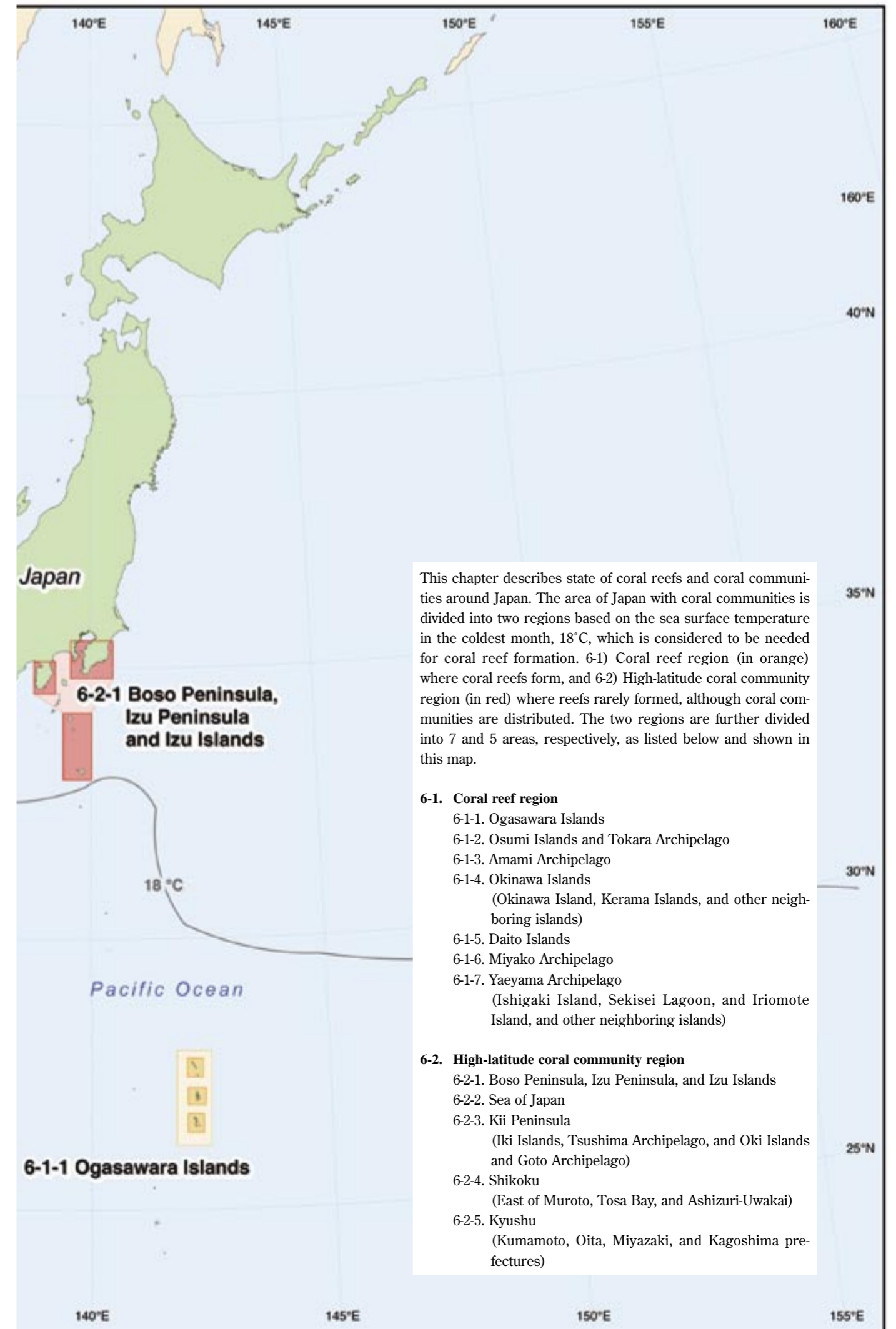
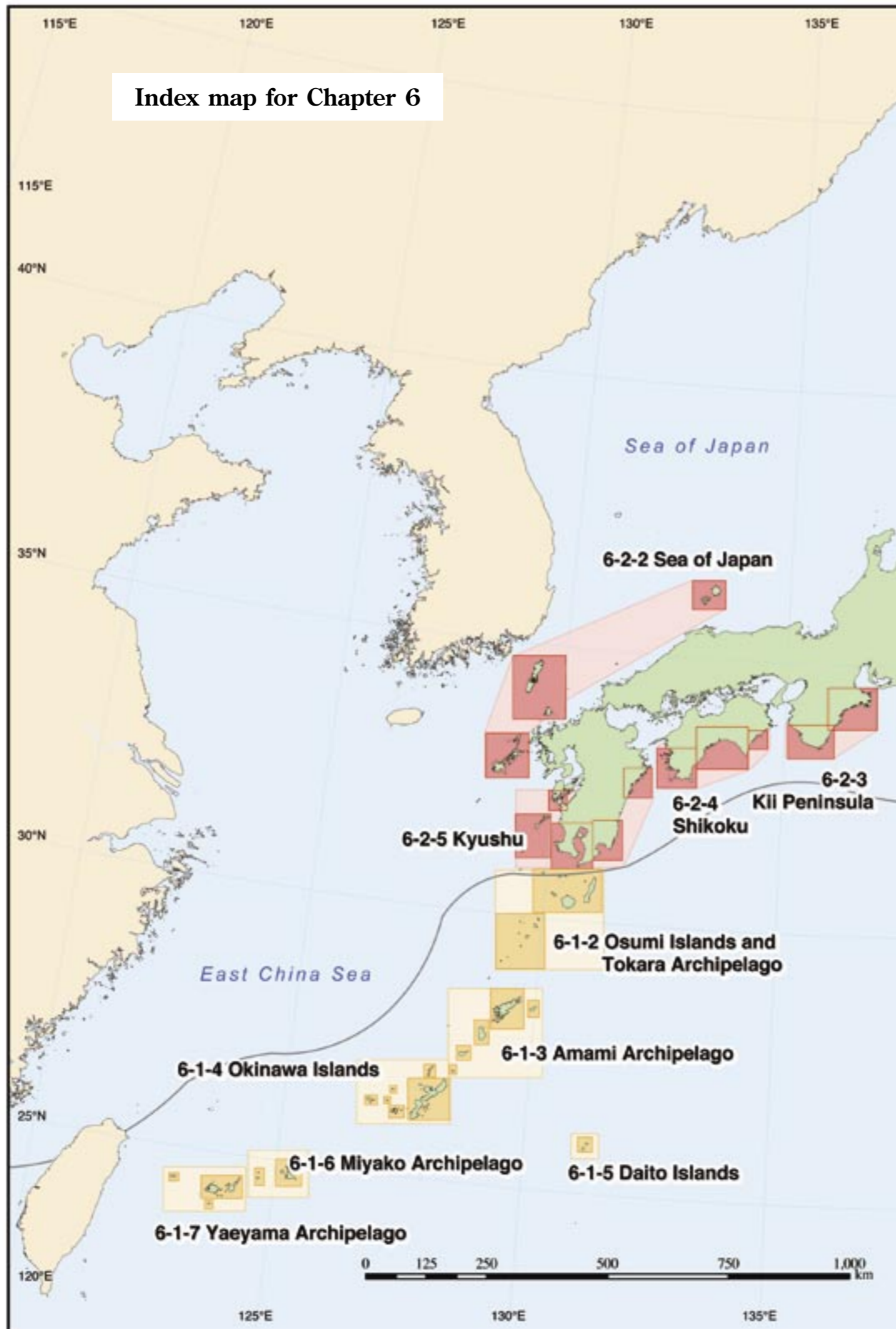


Chapter

Status of coral reefs around the country

Coral reefs in Japan develops on various environments, therefore many of the communities, to greater or lesser degree, are under influence of human activities. This can be said as a privileged environment for us coral reef researchers because it enables to conduct researches from various angles. However, the situation in recent years is not that light-hearted, suffering various disturbances. We are on the point of urgent discussion on how we should be involved with coral reefs through better understanding of its characteristics. In this chapter, various types of coral reefs and coral communities throughout the country will be explored, showing the uniqueness of each nature, their relationship with human activities including disturbances, and what measures are to be made on them. Hope that by this exploration, containing various locations and situations, will give readers a clue to think about how we should be involved with coral reefs in the future.

Index map for Chapter 6



This chapter describes state of coral reefs and coral communities around Japan. The area of Japan with coral communities is divided into two regions based on the sea surface temperature in the coldest month, 18°C, which is considered to be needed for coral reef formation. 6-1) Coral reef region (in orange) where coral reefs form, and 6-2) High-latitude coral community region (in red) where reefs rarely formed, although coral communities are distributed. The two regions are further divided into 7 and 5 areas, respectively, as listed below and shown in this map.

6-1. Coral reef region

- 6-1-1. Ogasawara Islands
- 6-1-2. Osumi Islands and Tokara Archipelago
- 6-1-3. Amami Archipelago
- 6-1-4. Okinawa Islands
(Okinawa Island, Kerama Islands, and other neighboring islands)
- 6-1-5. Daito Islands
- 6-1-6. Miyako Archipelago
- 6-1-7. Yaeyama Archipelago
(Ishigaki Island, Sekisei Lagoon, and Iriomote Island, and other neighboring islands)

6-2. High-latitude coral community region

- 6-2-1. Boso Peninsula, Izu Peninsula, and Izu Islands
- 6-2-2. Sea of Japan
- 6-2-3. Kii Peninsula
(Iki Islands, Tsushima Archipelago, and Oki Islands and Goto Archipelago)
- 6-2-4. Shikoku
(East of Muroto, Tosa Bay, and Ashizuri-Uwakai)
- 6-2-5. Kyushu
(Kumamoto, Oita, Miyazaki, and Kagoshima prefectures)

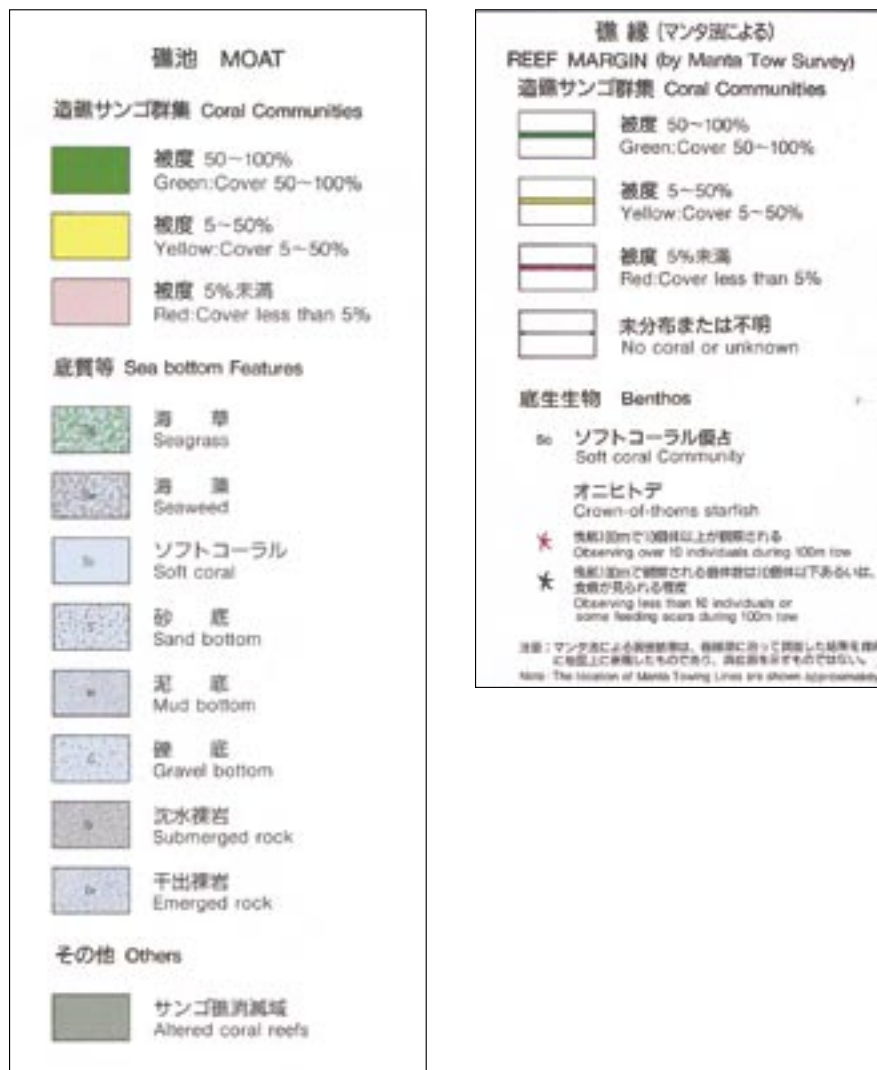


Fig. 1. Legend for the coral distribution map of the Coral reef region.

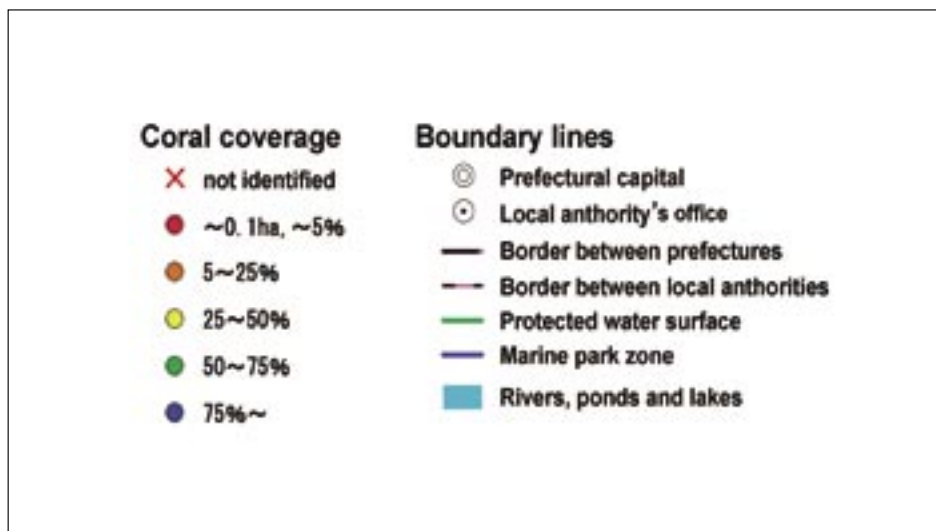


Fig. 2. Legend for the coral distribution map of the High-latitude coral community region.

In each area, general information is shown in the first two (or four) pages with the base maps, followed by detailed information written by scientists and researchers who are familiar with the area.

The general information includes coral distribution, meteorological condition, human population, and protected areas with their number, along with the base maps that show coral distribution and the location of protected areas. The legends for the maps are indicated in Figs. 1 and 2. Detailed statistics such as the number of tourists and the transition of fish catch are listed at the end of the book as Appendix 1.

The detailed information basically includes 1) Corals and coral reefs, 2) Situation of usages, 3) Threats and disturbances, 4) Monitoring, 5) Conservation, and 6) Necessary measures.

Source for the general information

Maps

The base maps of the Coral reef region are from the Marine Biotic Environment Survey (1989-1992) in the 4th National Survey on the Natural Environment (Nature Conservation Bureau, Environment Agency 1994), while the maps for the High-latitude coral community region are newly drawn for this book based on the data from the Marine Biotic Environment Survey.

Coral distribution

Coral distribution data is cited from the 4th National Survey on the Natural Environment (Nature Conservation Bureau, Environment Agency 1994). The survey was undertaken in 15 prefectures and one metropolis (Okinawa, Kagoshima, Miyazaki, Kumamoto, Oita, Nagasaki, Kochi, Ehime, Tokushima, Shimane, Wakayama, Mie, Shizuoka, Kanagawa, Tokyo and Chiba), where hermatypic corals are distributed (see index map in the previous page).

In the Coral reef region, except for Ogasawara, coverage of coral communities on reef flats were estimated by color aerial photography, and total length of the reef edge and colony morphologies was accessed by the manta tow method. In the High-latitude coral community region and in Ogasawara, the location of coral communities and the total community coverage were described only at the sites with > 5 % coral cover and > 0.1-ha area of coral communities.

Meteorological condition

All the meteorological data are from the Japan Meteorological Agency. Annual average (during 1971-2000) of the air temperature, precipitation and seawater temperature at each area are indicated.

Human population

The population data are based on the national census (in fiscal 2000).

Protected areas

Natural Parks, some of which have the Marine Park (MP) Zones in it, Nature Conservation Areas, and Protected Waters are indicated.