Identification of "Marine Area of Particular Importance" in Japan

Japan's experience in applying the EBSA criteria

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Background

1992 Convention on Biological Diversity

2008 Basic Plan on Ocean Policy of Japan

2008 EBSA Criteria (CBD COP9)

2011 Marine Biodiversity Conservation Strategy of Japan

2011-2014 Identification of
"Marine Area of Particular Importance"

Intended application

- Enhancement of Marine Protected Areas and networking thereof
- Adaptation to the predicted effects of climate change
- Appropriate management and environmental consideration in open ocean
- Promotion of public awareness and involvement of various actors

Approach and Process

Fiscal year 2011

- Establishment of an expert panel
- Decision on work plan, principles, scope, criteria, method, etc.

Fiscal year 2012

- Collection and analysis of GIS data
- Integration of data for multiple criteria

Fiscal year 2013

- Collecting opinions from outside experts, academic societies and NGOs/NPOs
- Determination and description of areas

Establishment of expert panel

Name	Organization	Area of specialization
Dr. Yoshihisa Shirayama (Chair)	JAMSTEC (Japan Agency for Marine-Earth Science and Technology)	Taxonomy and Meiobenthos
Prof. Hidetaka Takeoka	Ehime University	Physical Oceanography
Prof. Hiroshi Mukai	Kyoto University	Marine ecology (Benthos and Seagrass)
Dr. Kaoru Nakata	Fisheries Research Agency	Fisheries science and Planktology
Prof. Yasunori Sakurai	Hokkaido University	Fisheries science and Marine ecology

Scope

■ Horizontal range

From the high tide line to the outer limit of the EEZ

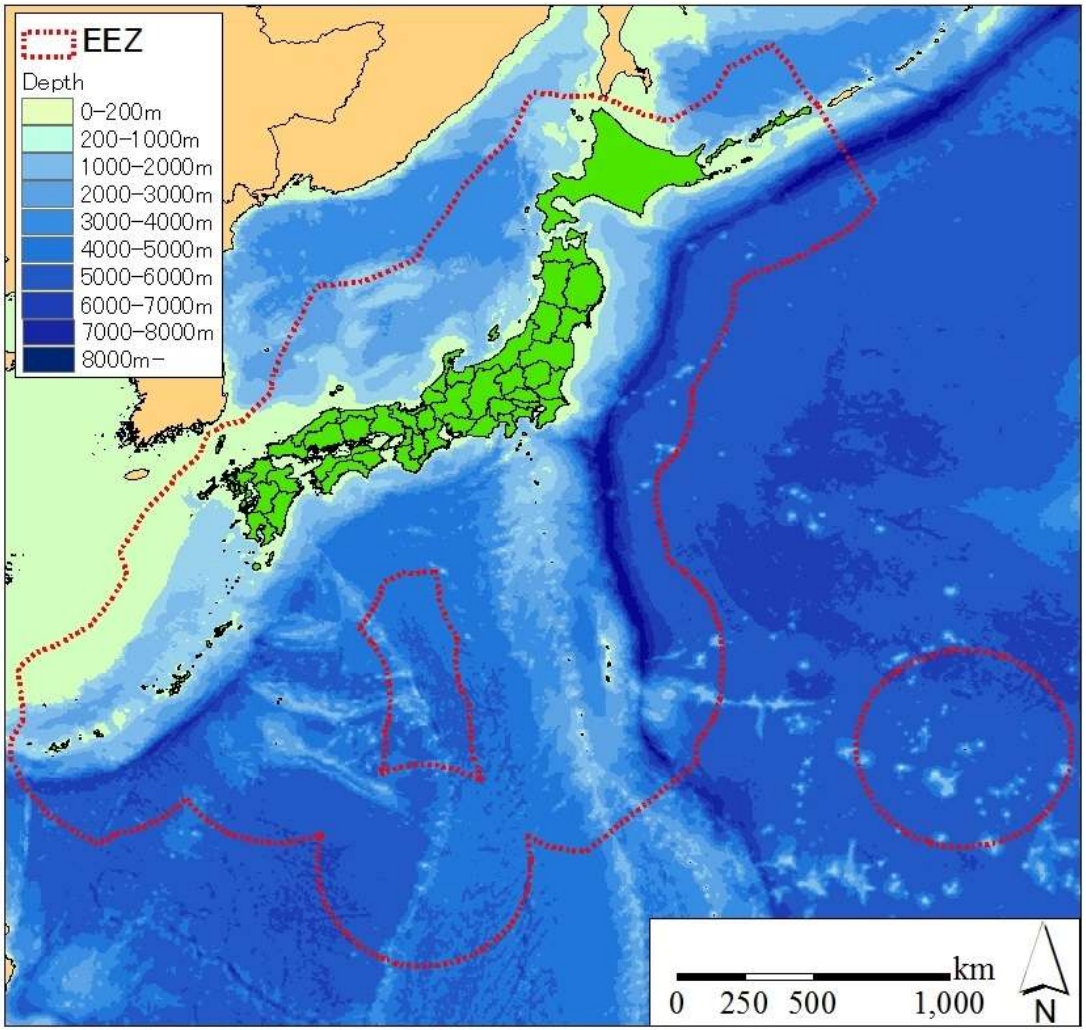
■ Vertical range

From the surface to the bottom (can be 3D)

■ Evaluation Unit Size

Coastal Area: 5km Grid

Open Ocean: 50km Grid (30 Arc minute)



Criteria（EBSA + Representativeness or Typicality）

	EBSA Criteria (UNEP/CBD/COP/DEC/IX/20)
1	Uniqueness or rarity
2	Special importance for life-history stages of species
3	Importance for threatened, endangered or declining species and/or habitats
4	Vulnerability, fragility, sensitivity, or slow recovery
5	Biological productivity
6	Biological diversity
7	Naturalness
	Additional criterion
8	Representativeness or Typicality Area containing representative or typical feature of ecosystem and/or biotic community of Japan

GIS data applied in each criterion

Best available scientific information are used

Biological data

Distribution data
- Marine Mammals
- Birds
- Sea turtles and snakes
- Fish
- Cnidaria /Mollusca / Others
- Deep Sea Corals
- Chemosynthetic community

Red List Species
IBA, Marine IBA
National monument

etc.

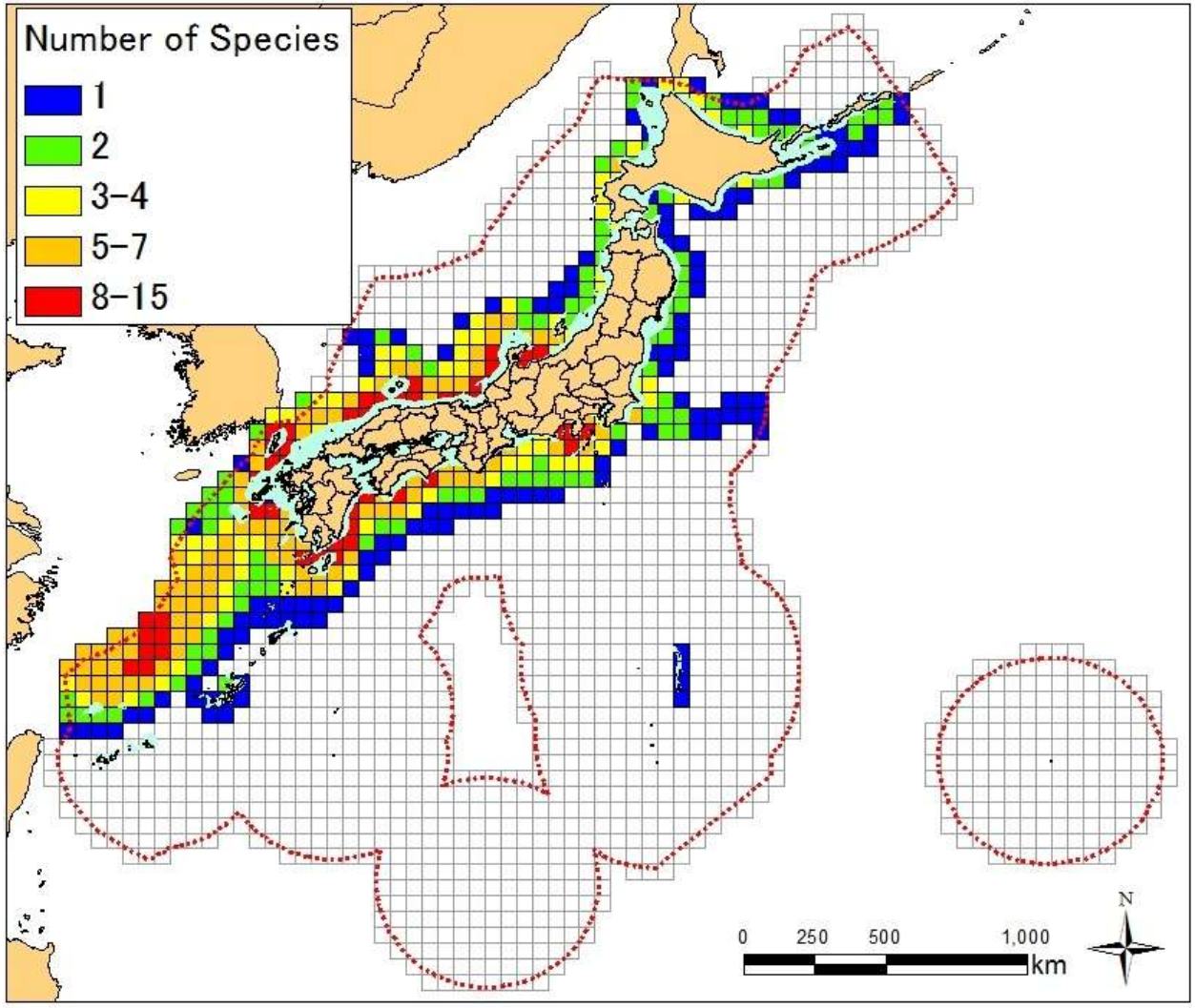
Physical data

Bathymetry
Chlorophyll a concentration
Distribution of canyons
Front and upwelling current
Ocean current
Sea Ice
Sand bank
Seamount Locations
Trench
Hydrothermal vents and seeps

etc.

Sample data

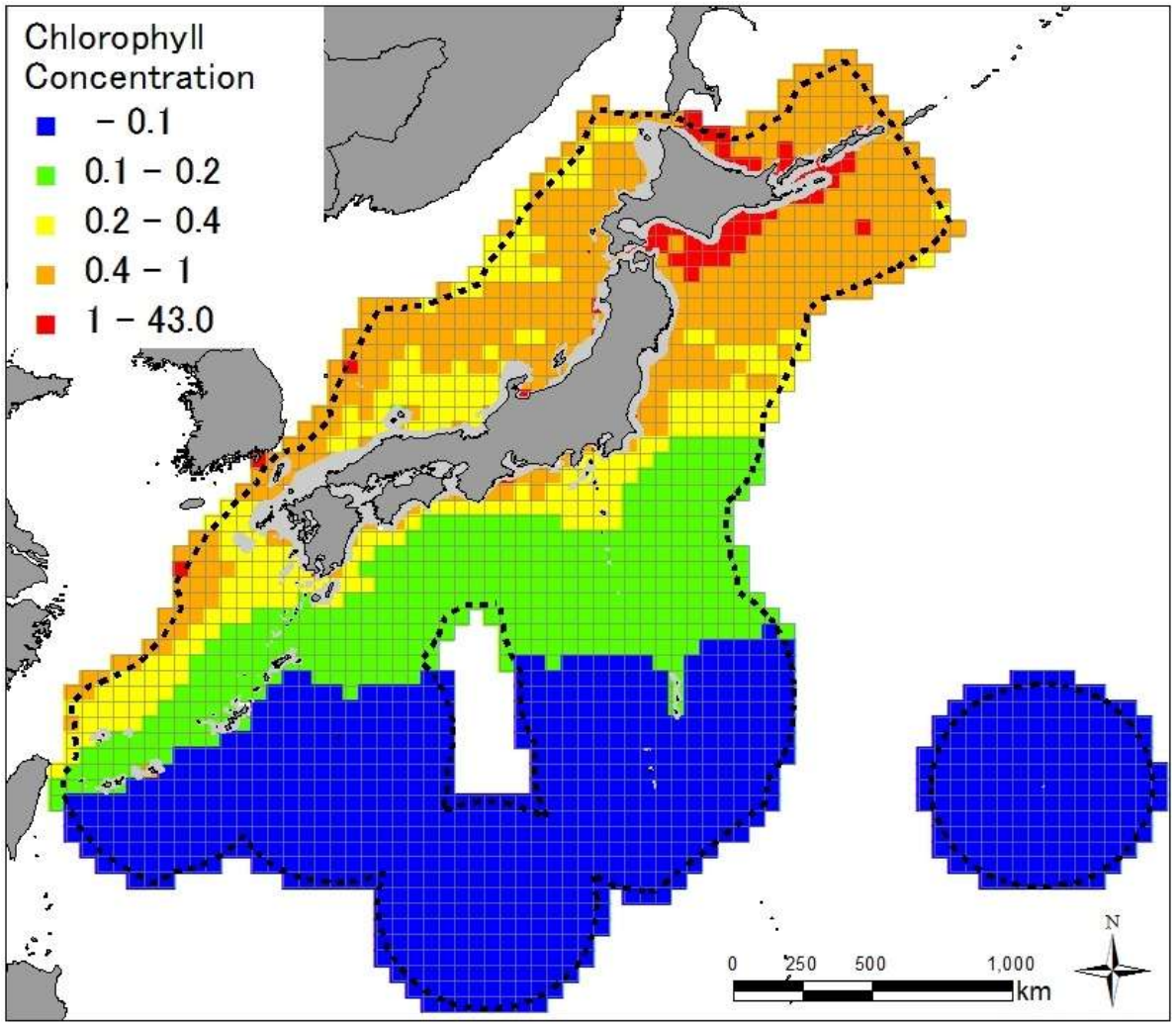
Special importance for life history of species



Data
Spawning areas of the 52 fish species subject to stock assessment of the Fisheries Agency, Japan

Sample data

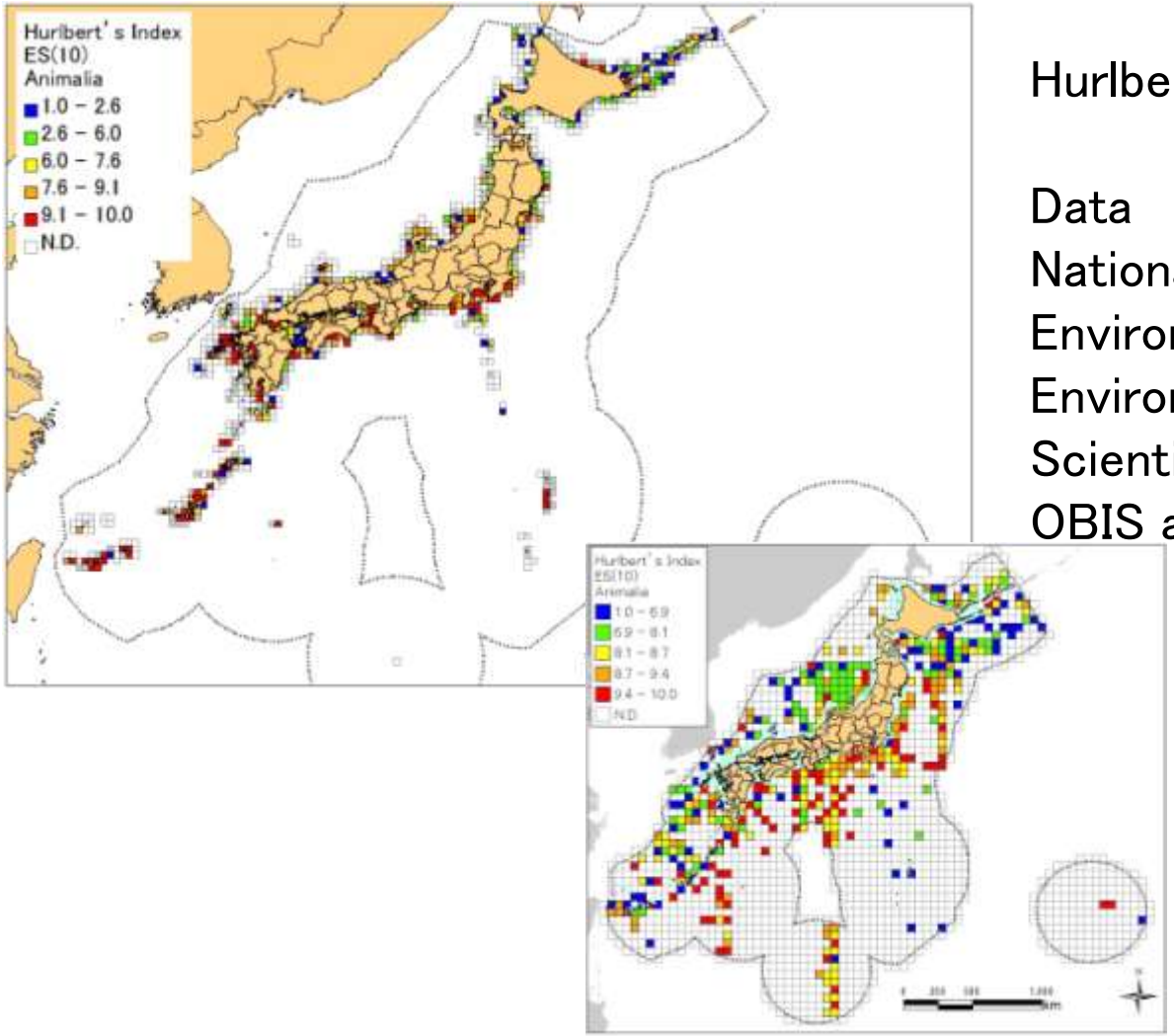
Biological productivity



Data
Chlorophyll Concentration
Aqua/MODIS (mg/m3)
2008-2012 Average
NASA Earth Observations

Sample data

Biological diversity



Hurlbert's Index ES(10)

Data
National Survey on the Natural Environment, Ministry of the Environment Japan
Scientific Reports and Papers
OBIS and GBIF

How to integrate

How can we / should we integrate eight CRITERIA?

- MARXAN
(Complementarity Analysis)

+

- Evaluated “high” in each criterion

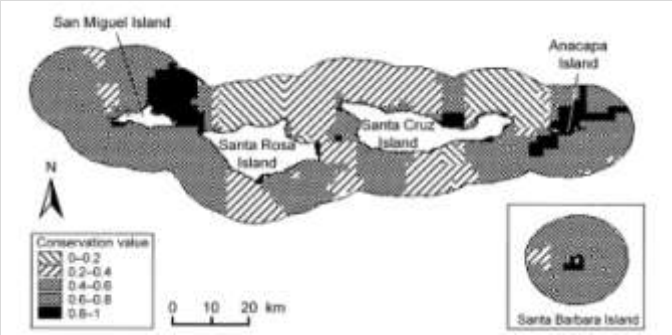
+

- Expert opinion

What is MARXAN?

MAXAN is freely available conservation planning software.

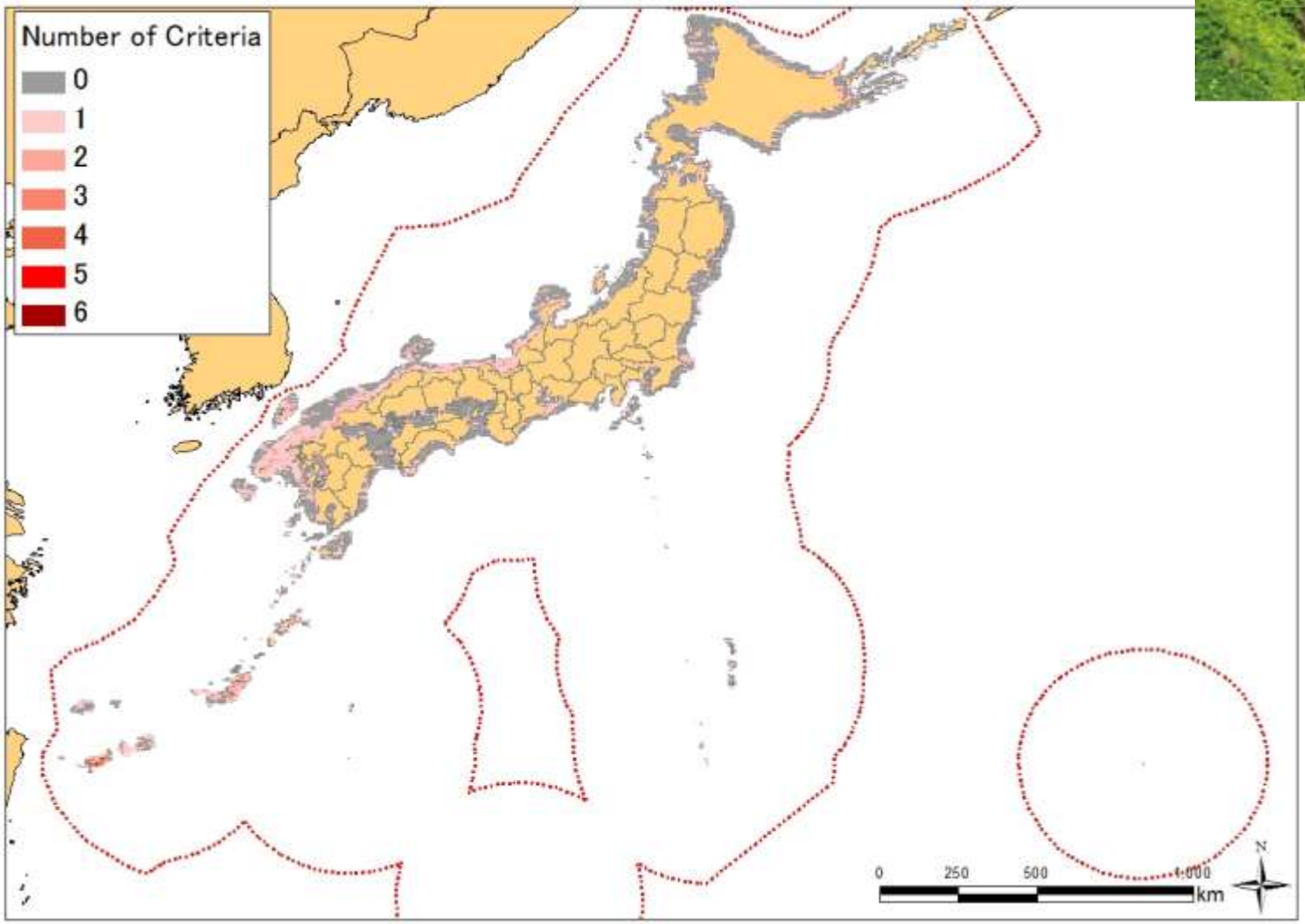
- It provides decision support to a range of conservation planning problems
- developing multiple-use zoning plans for natural resource management
- the design of new reserve systems



Priority areas for conservation in the Channel Islands National Marine Sanctuary.(Airame et al., 2003)

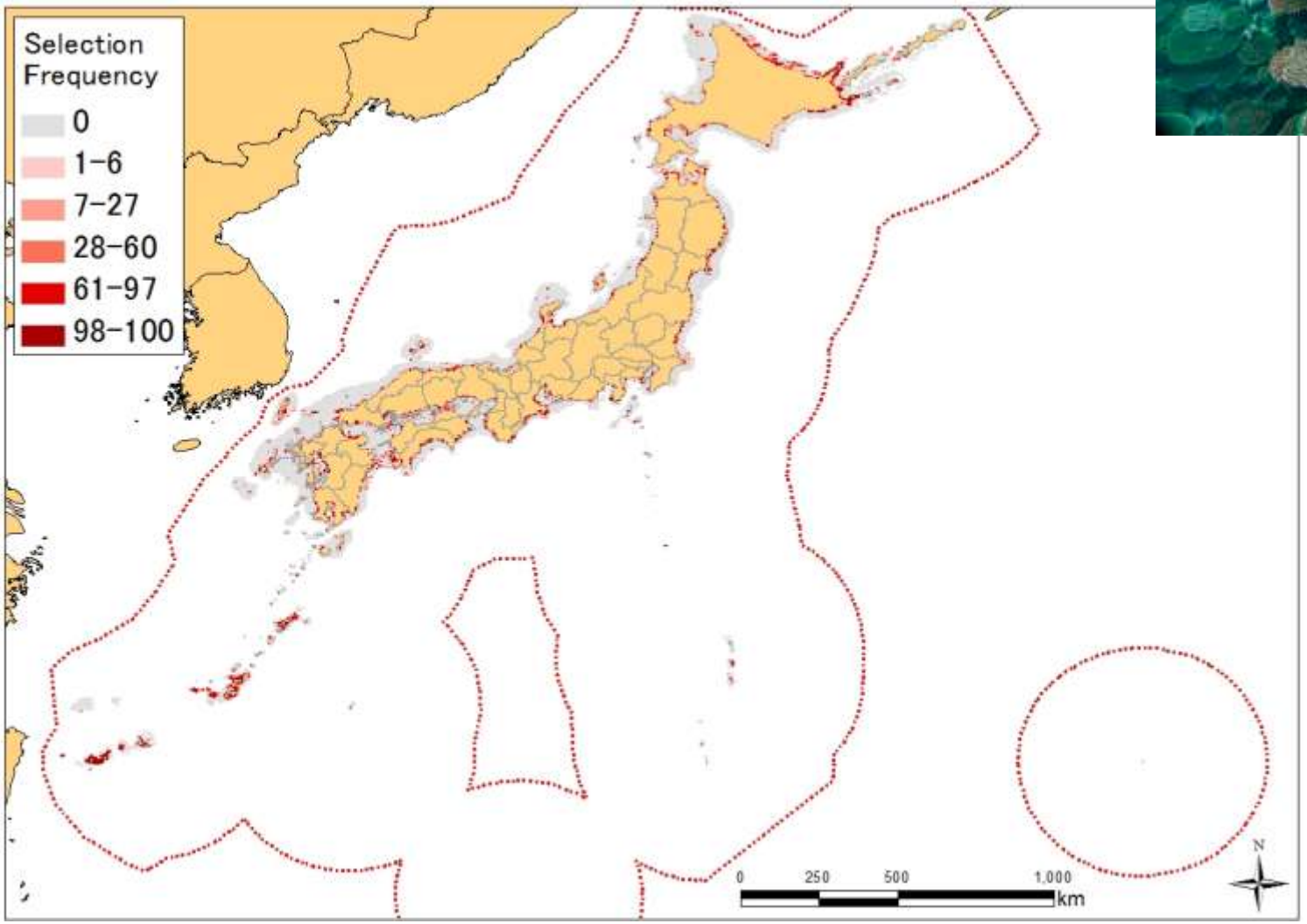
Result of “high” score (tentative)

Evaluated ”high“ in each criterion in coastal area



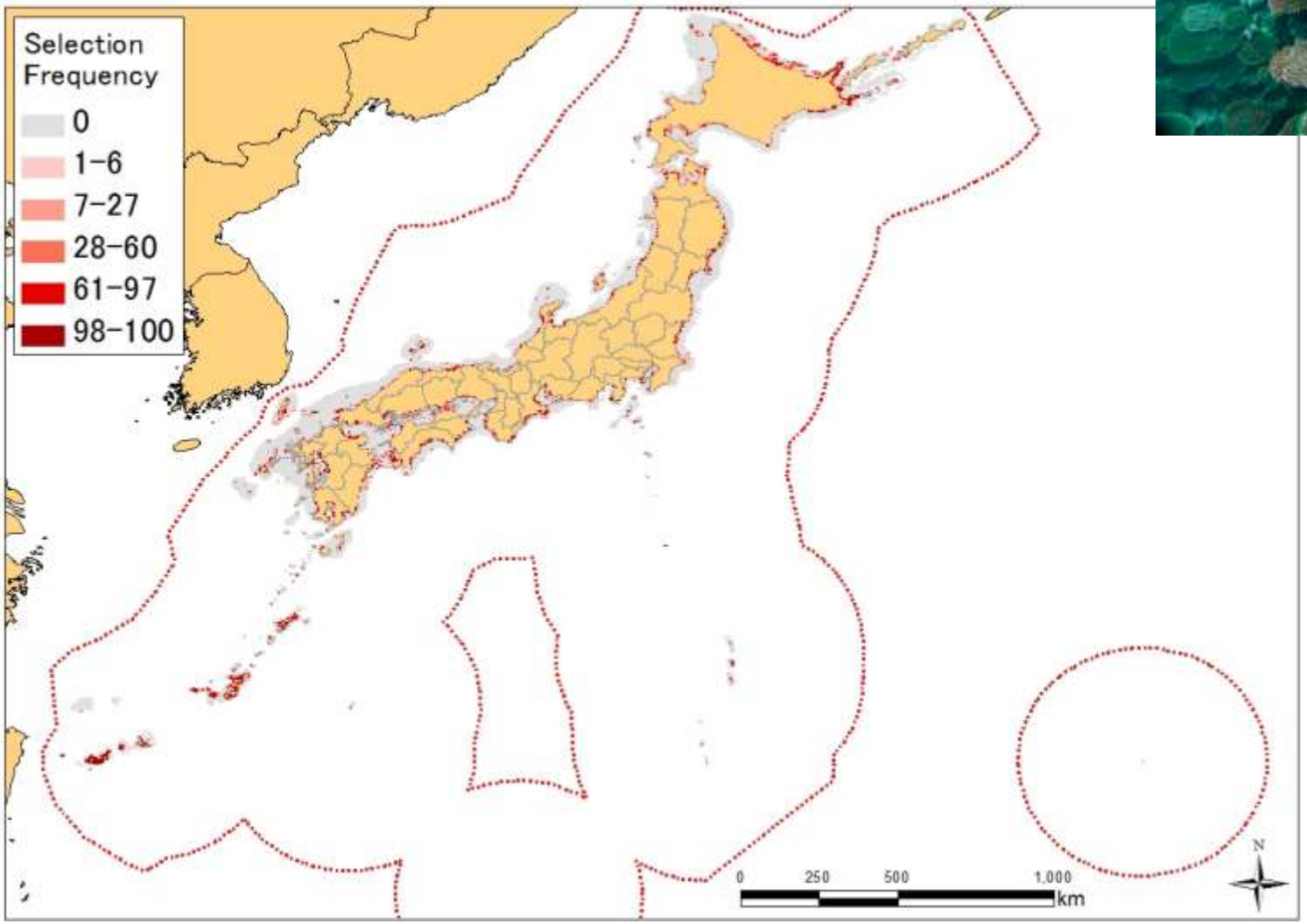
Result of MARXAN(tentative)

MARXAN solution in coastal area



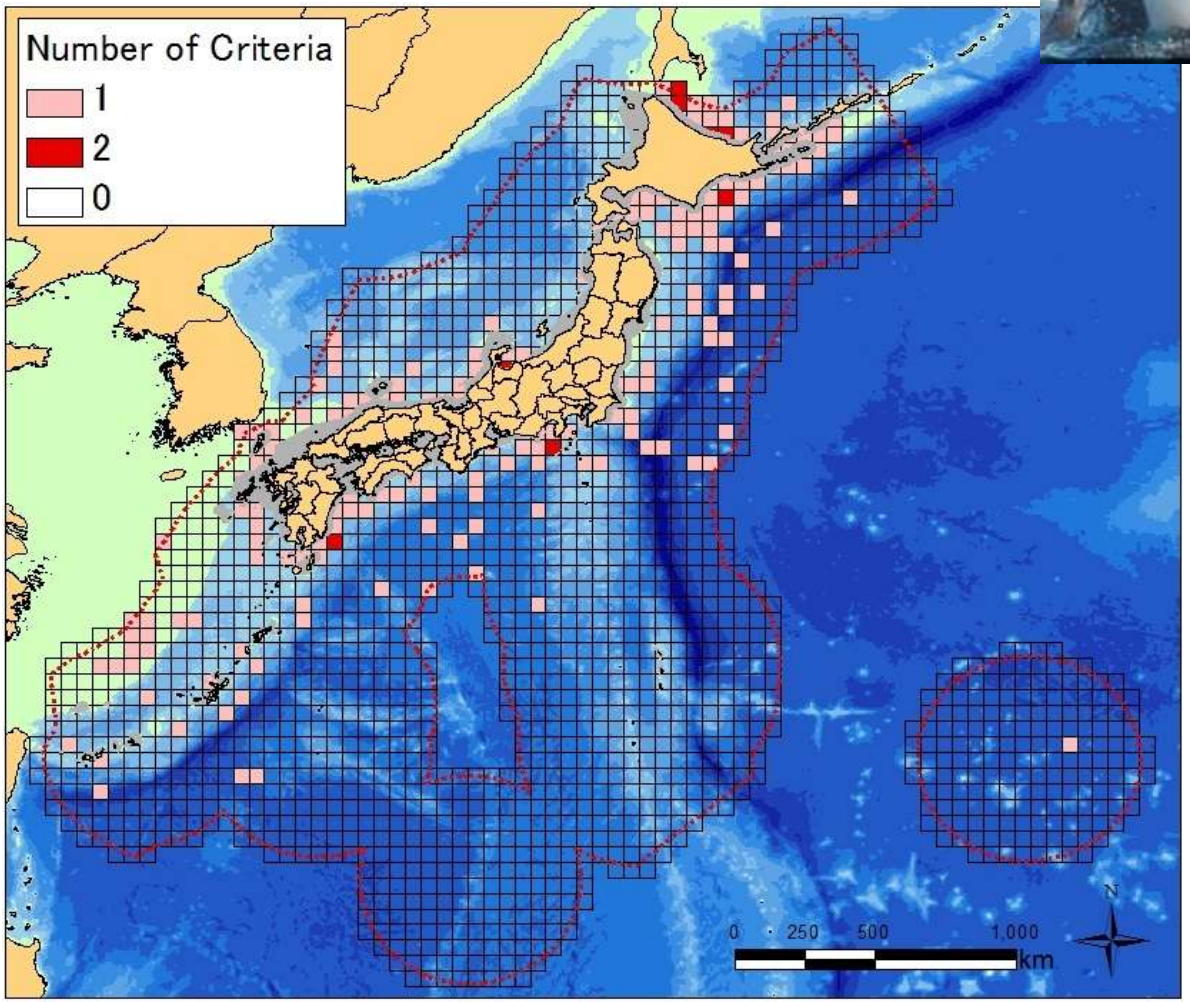
Result of MARXAN(tentative)

MARXAN solution in coastal area



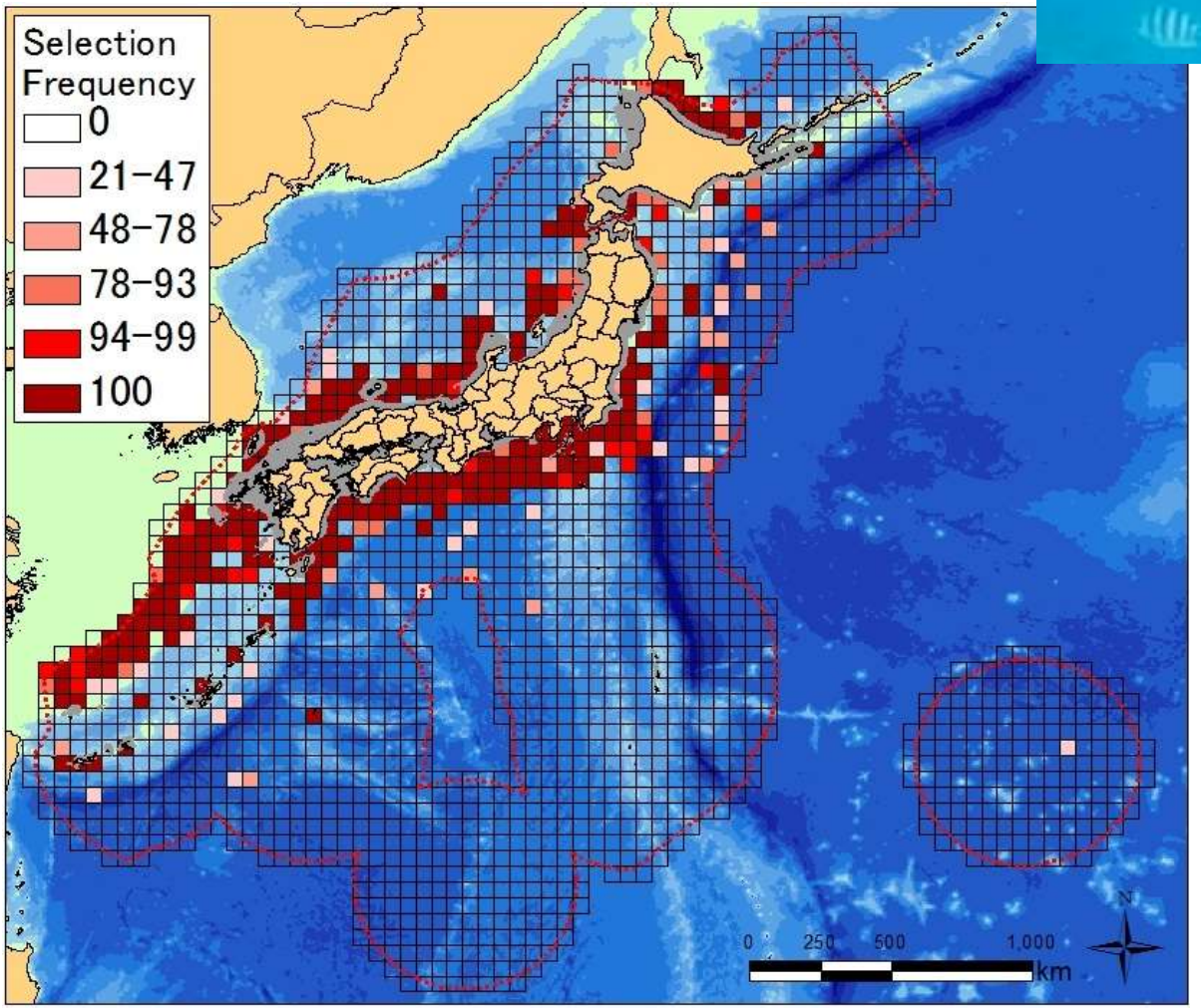
Result of “high” score (tentative)

Evaluated ”high“ in each criterion
Epipelagic open ocean



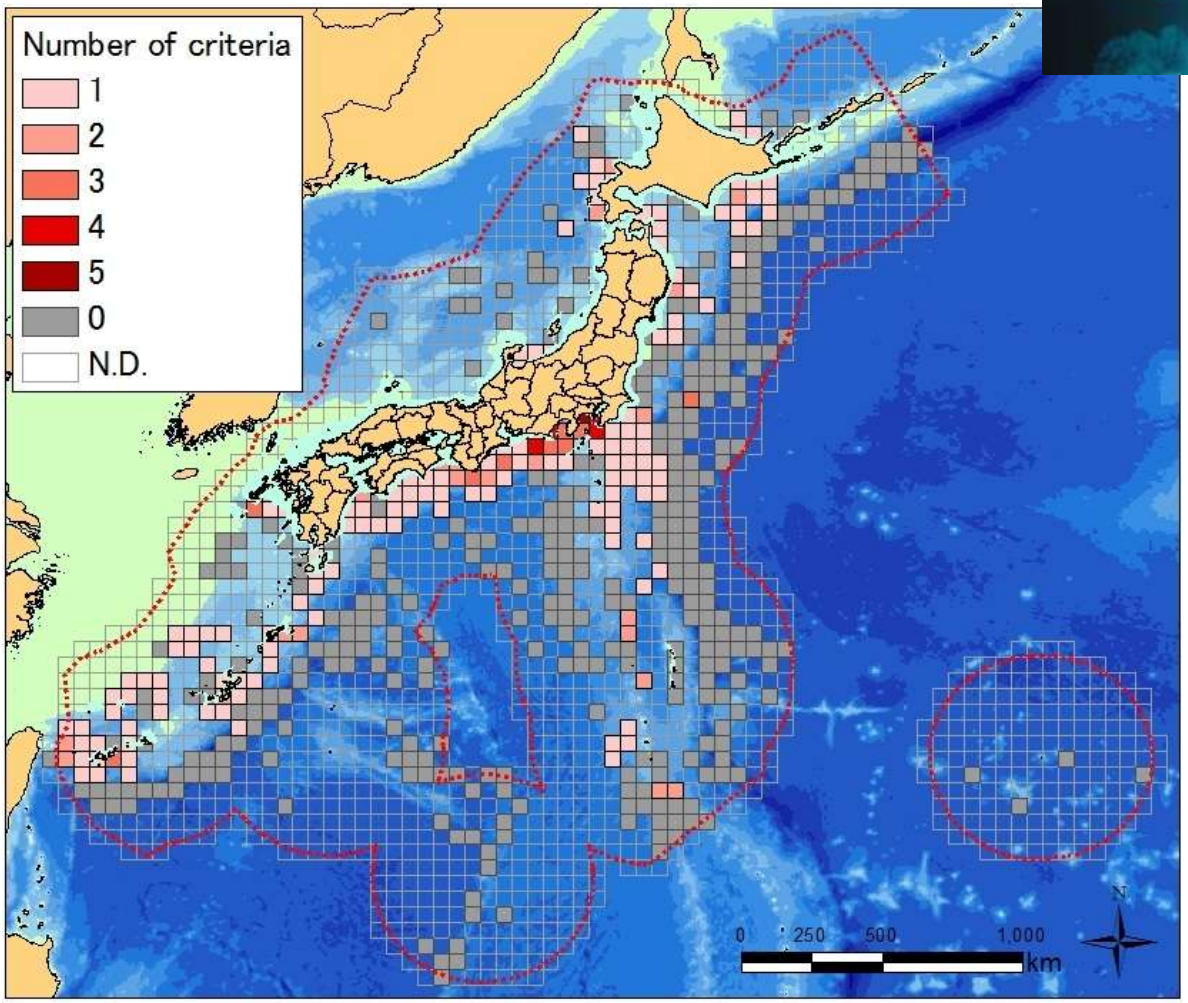
Result of MARXAN(tentative)

MARXAN solution in open ocean
Epipelagic open ocean



Result of “high” score (tentative)

Evaluated ”high“ in each criterion
Sea floor in open ocean



Process in the fiscal year 2013

Collection of opinions from outside experts, academic societies and NGOs

Identification of Marine Areas of Particular Importance by the expert panel

Publication of the "Marine Area of Particular Importance"

Thank you