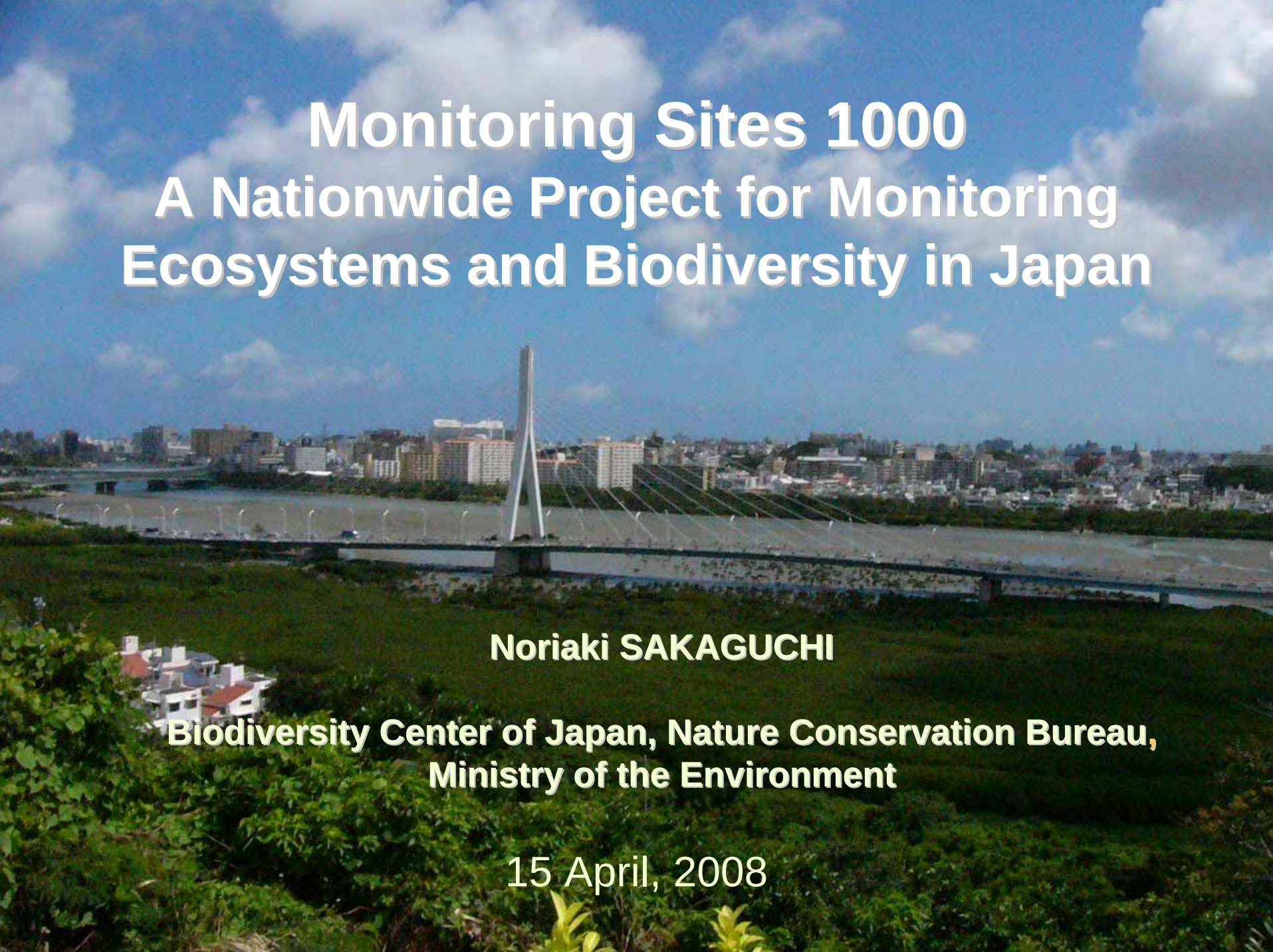

Monitoring Sites 1000
A Nationwide Project for Monitoring Ecosystems and Biodiversity in Japan

Noriaki SAKAGUCHI

Biodiversity Center of Japan, Nature Conservation Bureau, Ministry of the Environment

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Diverse Natural Environments

- Consisting of over 3700 islands
- Extending from north to south
- Mountainous
- Four seasons

Sub-tropical　　to　　Sub-arctic

Threats to Biodiversity in Japan
described in National Biodiversity Strategy (rev. in 2007)

1. Global Warming

2. Habitat destruction and extinction of species

3. Desolation of rural areas

4. Invasive alien species

Asian small mongoose

Significant Effects of Global Warming on Ecosystems in Japan

Alpine

High temperature

Reduction and fragmentation of vegetation

Seashore

High sea level

Disappearance of sand shores and tidal flats

Coral reef

High water temperature

Bleaching of corals

Needs for Surveys on Biodiversity

- **Assessing the impact of global climate changes like global warming to natural environments**
- **Early detecting the degradation of regional natural environments and taking appropriate measures against it**
- **providing more concrete information to take policy for the conservation of species and ecosystems, restoration of natural environments and sustainable resource use**

Monitoring Sites 1000 Project

Monitoring Sites 1000

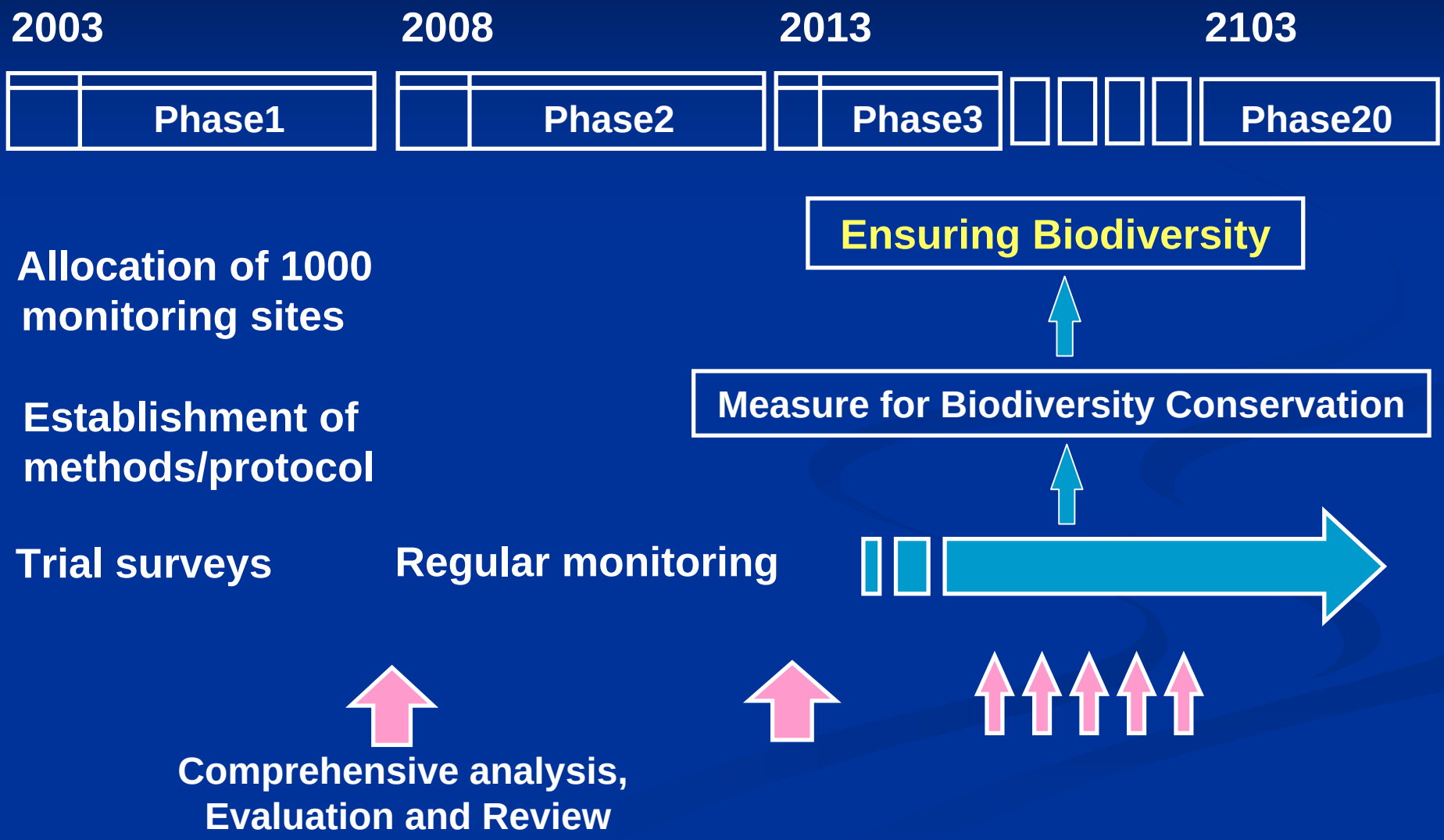
Overall Goal

To detect the degradation of ecosystems in early stages by long-term continuous monitoring of their components, and to contribute to appropriate measures for biodiversity conservation in Japan.

Issues

1. **To locate monitoring sites, to define indicator species and to establish study methods in each ecosystem in order to accurately and quantitatively detect ecosystem changes**
2. **To establish sustainable system for project ßoperation and to raise the capacity of participants**
3. **To provide the results and information to the policy makers for biodiversity conservation and to the public**
4. **To cooperate internationally for sharing biodiversity changes at global level**

Timeframe of the Monitoring Sites 1000



Ecosystems and Indicators

Ecosystem		Sites	Main survey items	Surveyor
Terrestrial	Forest	465 (43)	Vegetation, growth, Litter, Terrestrial birds, Ground wondering beetles	Scientist / citizen
	Rural area	198* (18)	Flora, water environment, artificial impact, Indicator animals	Citizen
	Lake, Marsh	111 (30)	Vegetation, Plankton, Fishes, Anatidae	Scientist
Marine shore	Sandy shore	41	Vegetation, Sea turtle egg-laying	Citizen
	Rocky shore	14*	Benthos	Scientist
	Tidal flat	132* (12)	Benthos, Sand grains, Shorebirds	Scientist / Citizen
	Eelgrass bed	11*	Eelgrass vegetation, Benthos	Scientist
	Seaweed bed	10*	Seaweed vegetation, Benthos	Scientist
	Coral reef	24	Coral coverage, Crown-of-thorns starfish, Bleaching, substratum turbidity	Scientist
	Small islet	28	Vegetation, Seabirds	Scientist
Total		1034		

Design to Quantitatively Detect the Ecosystem Changes

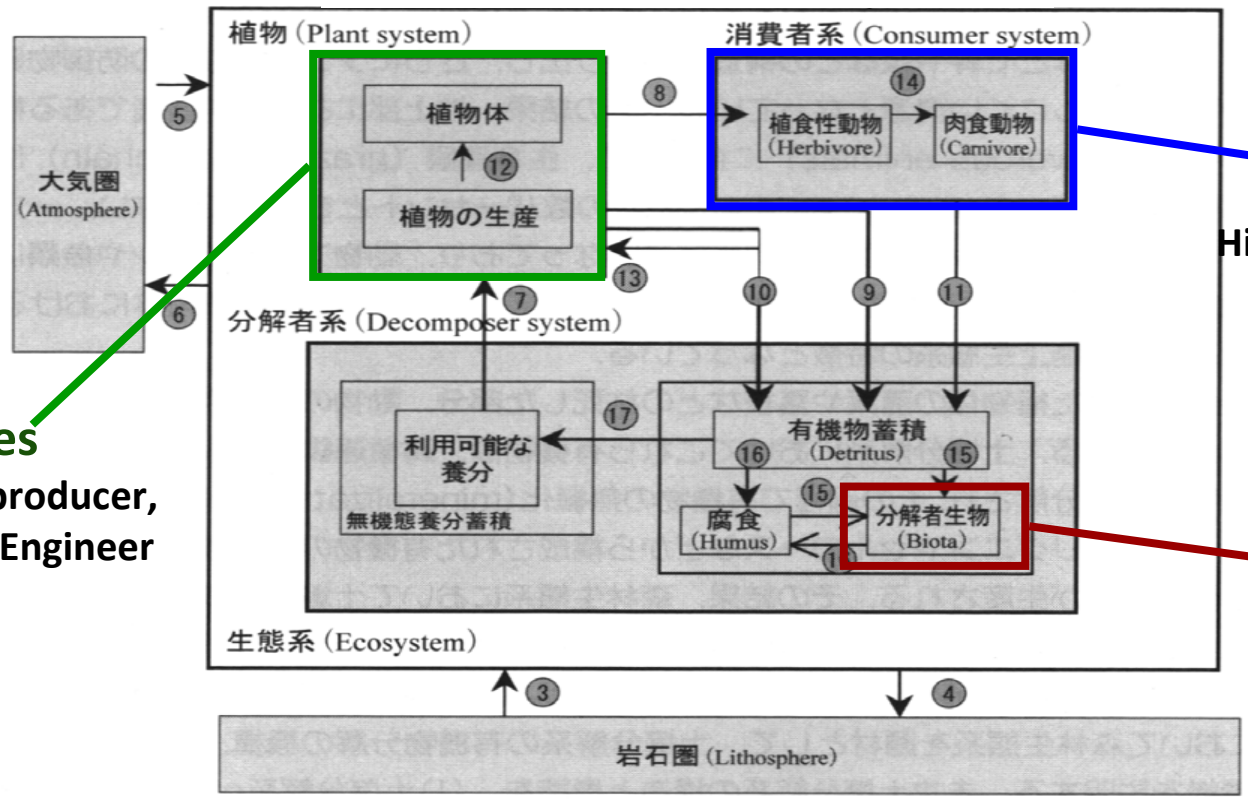
Functional Change of Ecosystem
(Material Circulation, Energy flow)

→ **The Change of Ecosystem Service for human**

Impossible because of cost, time and power

Target — **Indicators in the Ecosystem (Functionally Important Species)**

Example of Forest Survey



Trees
Dominant producer,
Ecosystem Engineer

Birds
High Ranked Consumer,
Seed disperser,
Migratory species

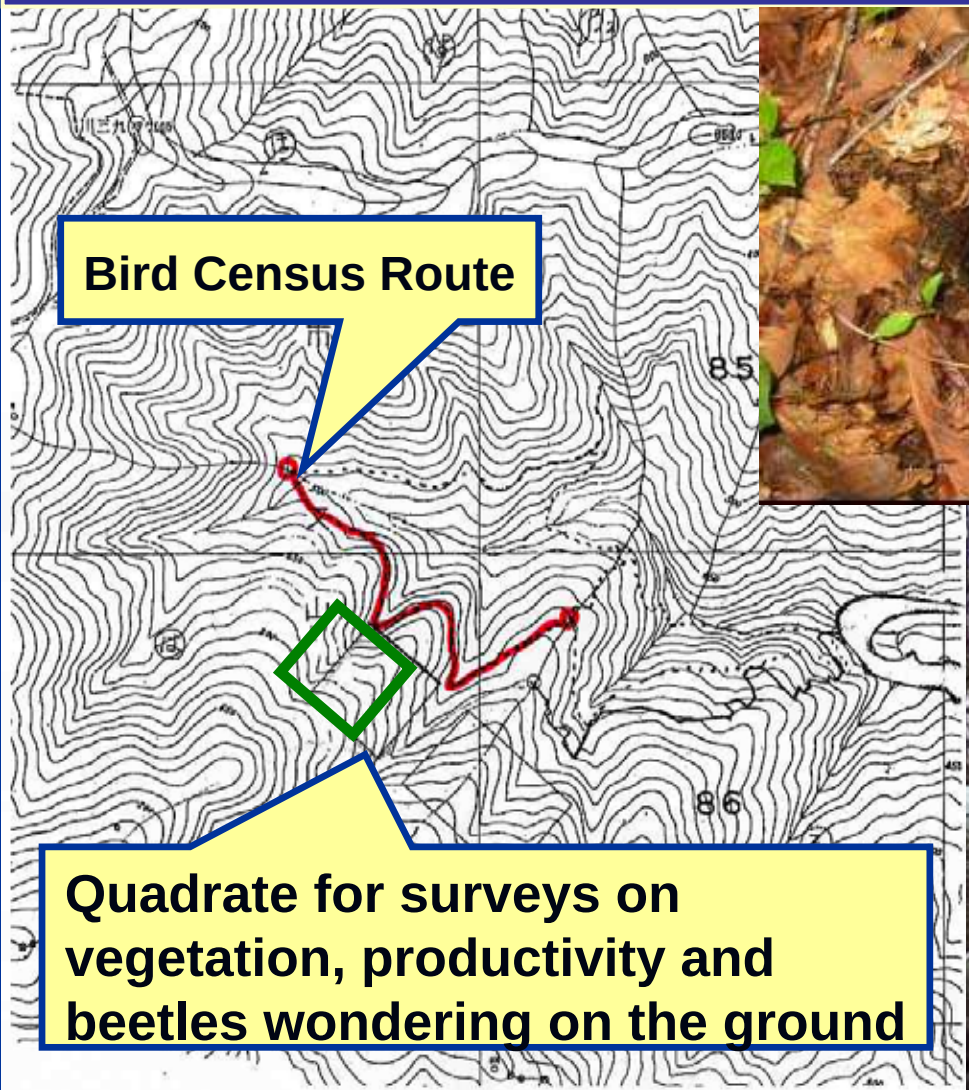
Ground Wondering Beetles
High Ranked Consumer

図 3.1.1　森林における物質循環

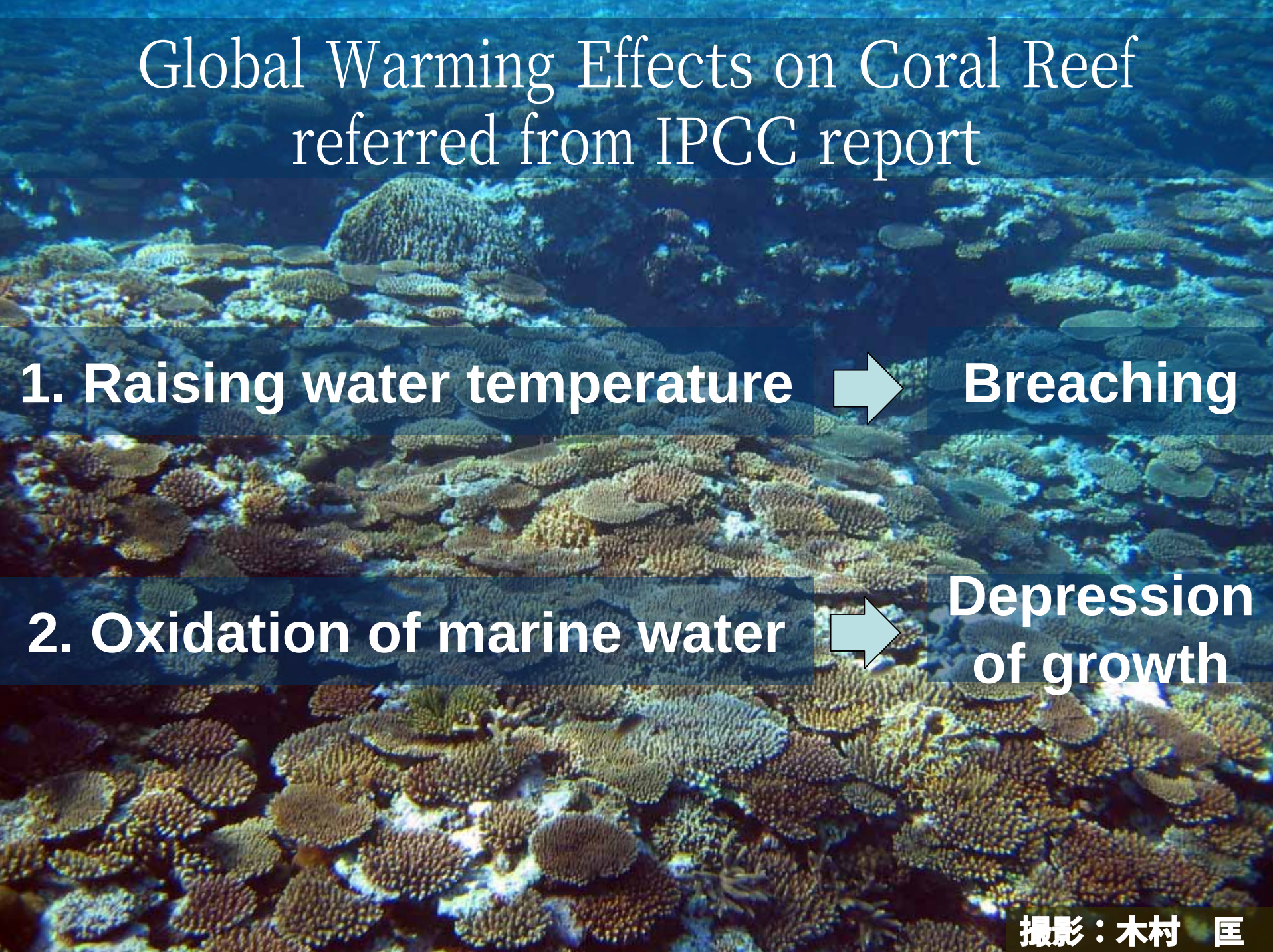
地球環境と生態系 (武田・占部編) より

Study Site and methods for Forest Ecosystem Research

Quadrate (1ha) and bird census route (500m)



Global Warming Effects on Coral Reef referred from IPCC report



1. Raising water temperature ⇨ **Breaching**

2. Oxidation of marine water ⇨ **Depression of growth**

撮影：木村　匡

Methodology for coral Monitoring

Spot check method

15 minutes observation by snorkeling at a fixed site (50m x 50m)

Observation items

Coral: Coverage, Growth type, Recruitment, Bleaching

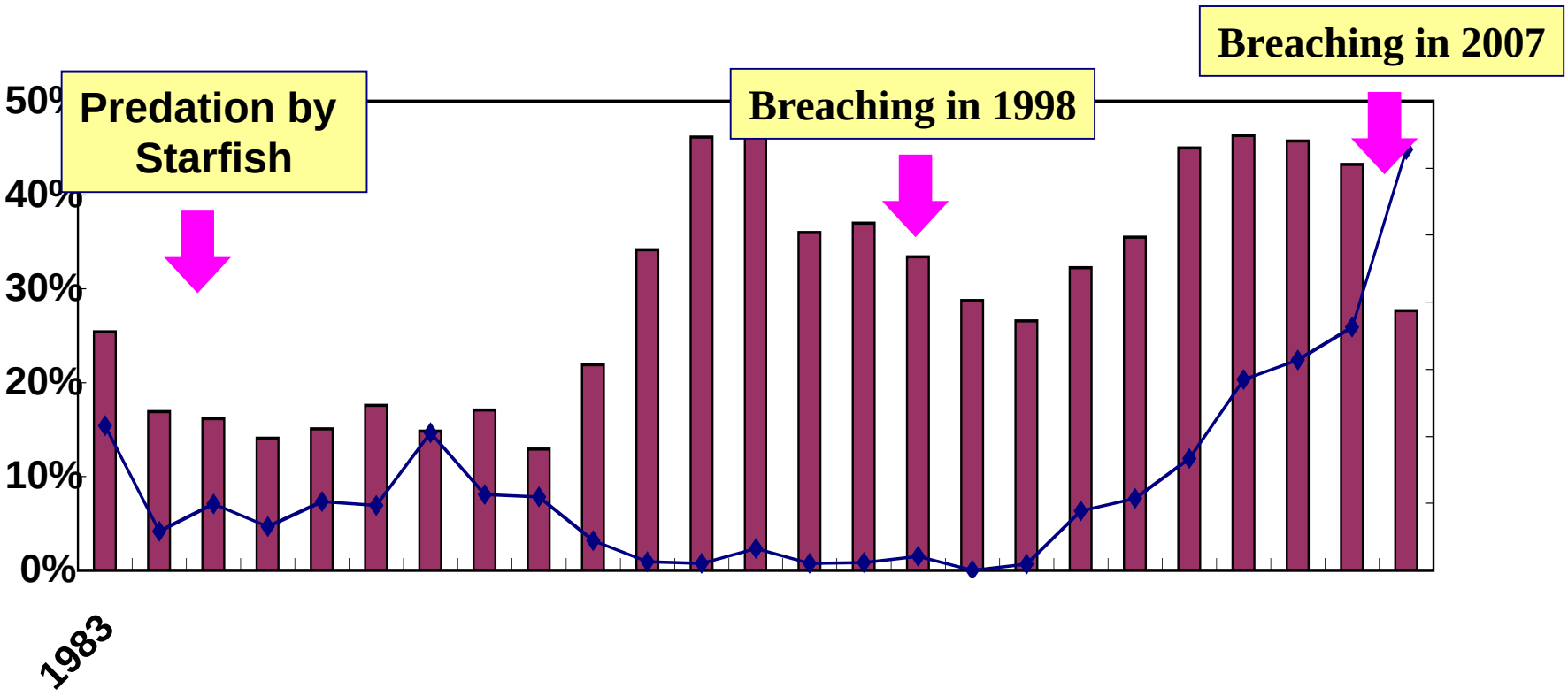
Crown-of-thorns starfish: Number, Dominating size, Predation

Other organisms: Coral eating snails and their predation, Large sized coral fishes

Physical factors: Position, Topography, Substratum, Depth,, DPSS

撮影：梶原健次

Results of Coral Reef Monitoring in Sekisei-syouko



Application to restoration of coral reefs and eradication of star fishes

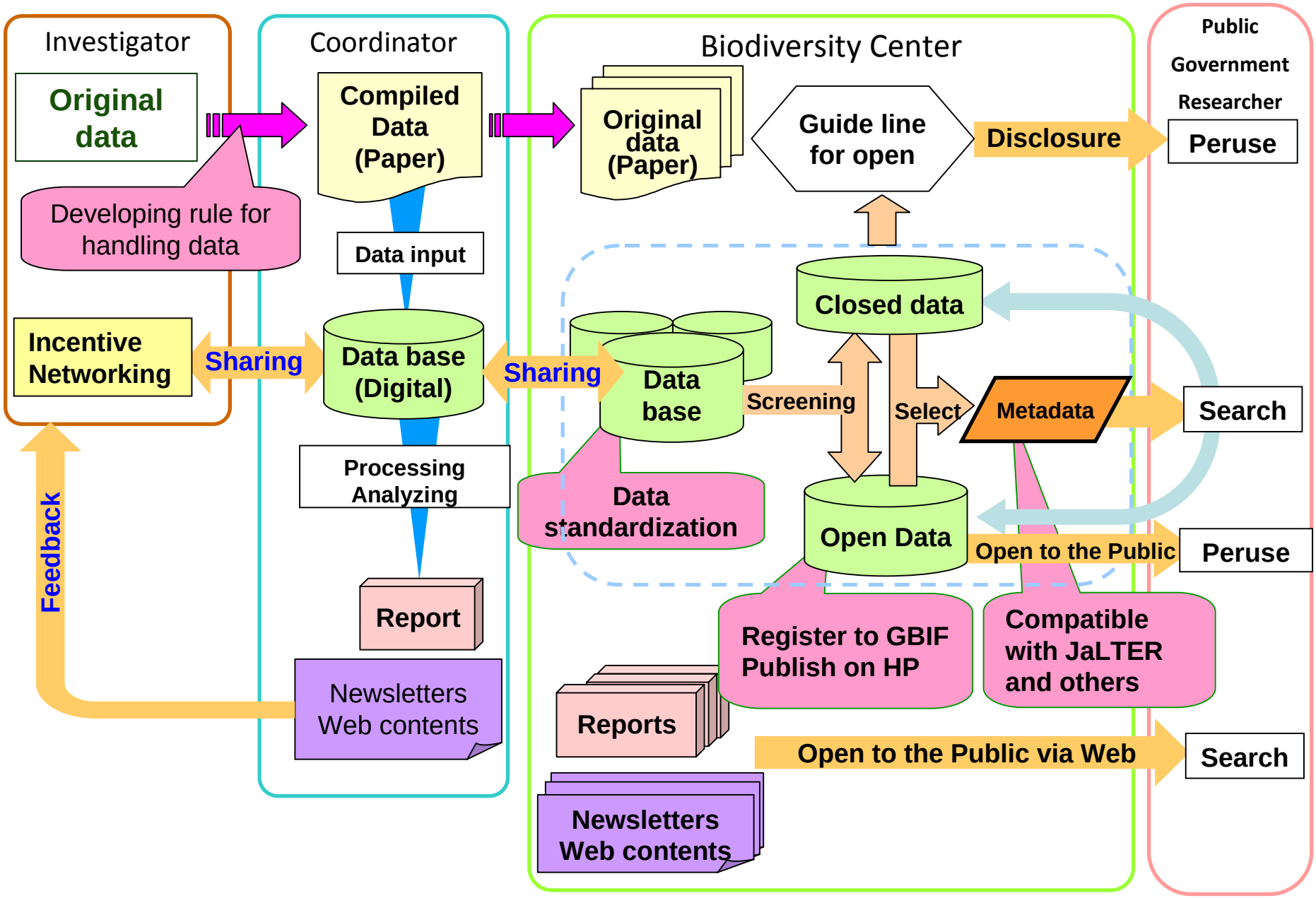

撮影：木村　匡

For Capacity building and Sustainability

Training for investigators
Photo by NACS-J

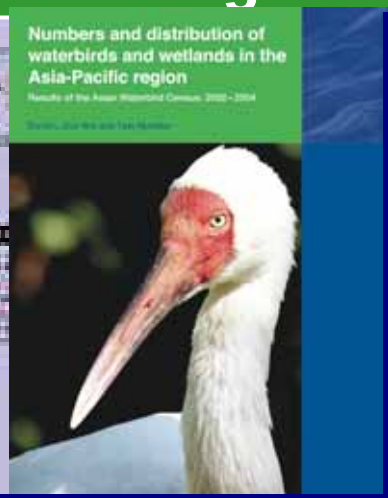
Workshop to raise survey technique and information exchange on shorebirds survey. Photo by WWF-Japan

Flow on Sharing and Dissemination of Data and Information



International Cooperation

For detecting and sharing biodiversity change at global level



Asian Waterbird Census (AWC)

Organizer: Wetland International

Participants: 25 countries

Census sites: c.a. 2000 sites

Migratory waterbirds

Share compatible data with other International Framework ----- GEOSS, GBIF

Provide the information for MA, GEO, CBD 2010 Biodiversity target

Conclusion

1. Standardized protocols for each ecosystem survey and capacity building be ensured for accurate data collection.

2. The results be used and contributed for biodiversity conservation for the project continuity and improvement of incentive of surveyors.

3. In order to share information and collaborate with other Frameworks, GEOSS, GBIF, ILTER (JaLTER), compatible data sets be collected and prepared, and registration to GBIF and other available DB be promoted.


Thank you for your attention!!