Towards GEOSS
DIVERSITAS, DIWPA and LTER

- Key points for GEOSS in Asia
- DIVERSITAS
- DIWPA and NaGISA
- LTER
- Monitoring 1000
- What is necessary

Key issue for biodiversity in Asia-Pacific

- Important region to be monitored
  - High biodiversity
  - Rapid economic growth, high human population > drastic change
- Many local people depends on biological diversity
- Effective biological production vs biodiversity conservation (plantation, agriculture, aquaculture)
- Emerging infectious disease (including wildlife and plants)
- Carbon vs biodiversity
- Low capacity in developing countries

DIVERSITAS

An international programme of biodiversity science

3 Core Projects

bioDISCOVERY
a core project of DIVERSITAS

Discovering, monitoring, and predicting changes in biodiversity

J. P. Rodriguez (Venezuela) & N. Jürgens (Germany)

ecoSERVICES
a core project of DIVERSITAS

Assessing the ecological and social impacts of biodiversity changes

Prof. C. Perring (USA) & Dr. A. Hector, (Switzerland)

bioSUSTAINABILITY
a core project of DIVERSITAS

Developing the science of the conservation and sustainable use of biodiversity

Prof. D. Raffaelli (UK) & Dr. S. Polasky (USA)

Defining user needs for a global observation system for biodiversity

At WMO Headquarters, 23-25 October 2006

- Collaboration among DIVERSITAS, GBIF, GEOSS
- Produce a draft of a System Concept
- Working groups
  - GBIF : on the use of specimen data
  - DIVERSITAS: on scaling issues, plot-type observatories and technical protocols and interoperability.
  - GTOS: a survey of existing observations systems
- Technical development framework
  - Interoperability between different data types,
  - Funding strategy (early on to secure money to develop the vision)
  - Governance structures
- Broaden and secure further involvement

DIWPA

DIVERSITAS Western Pacific and Asia

- Association of biodiversity scientists and technicians who are working in Western Pacific and Asia
- Following DIVERSITAS activities
- Established in 1993
- Over 400 people from 41 countries and area

IBOY: International Biodiversity Observation Year 2001-2002

Biodiversity Assessment Program in the Western Pacific and Asia Region: a baseline for understanding global change

Proposed firstly by DIWPA, and adopted as worldwide

NaGISA

Natural Geography in Near Shore Areas

International Headquarters is located at Seto Marine Biological Laboratory of the Field Science and Education Center in Kyoto University.

http://www.nagisa.coml.org/default.htm

International Biodiversity Observation Year

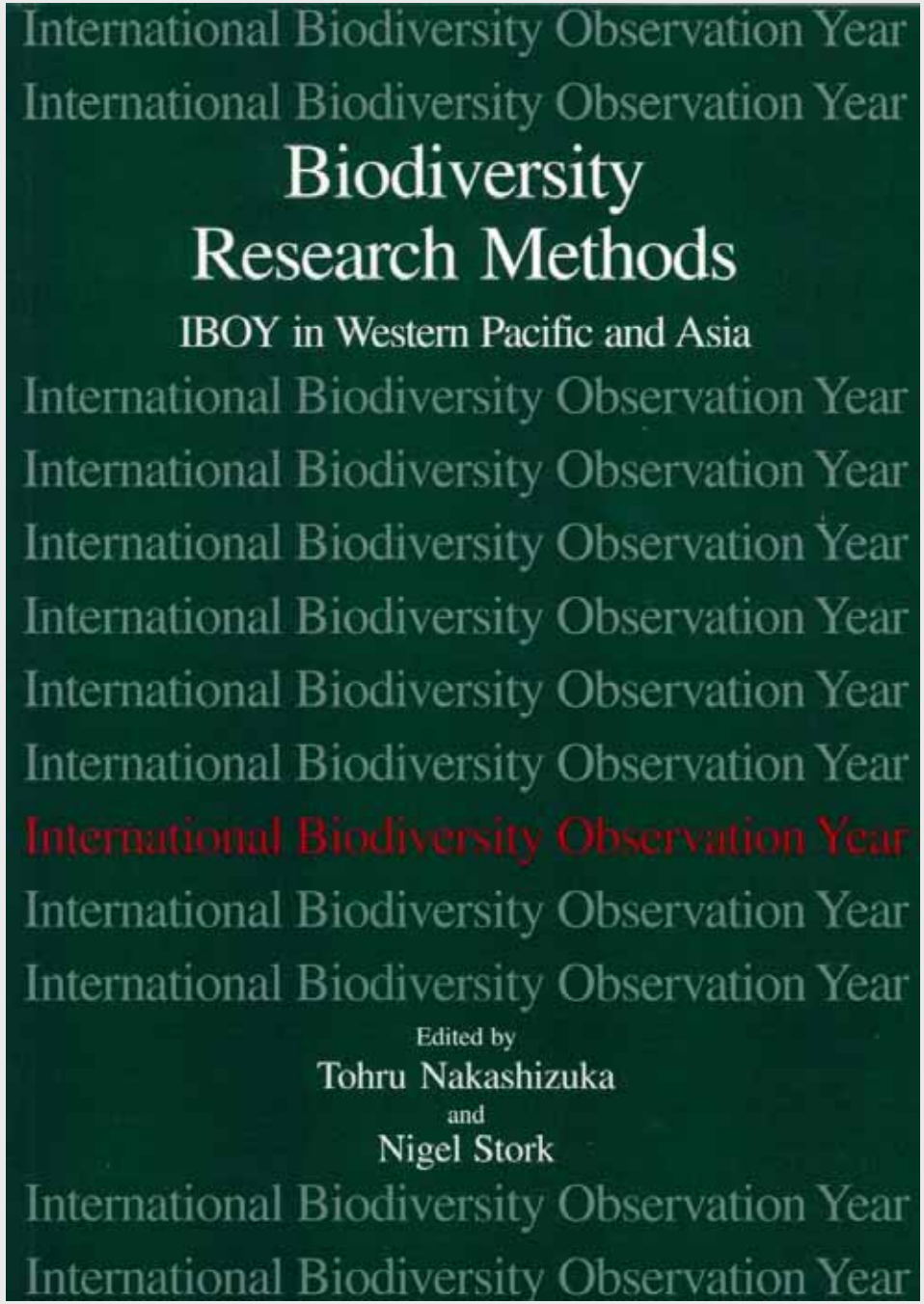
An Initiative of DIVERSITAS

2001-2002

DIWPA-IBOY

- Inventorying biodiversity of forests, lakes, rivers and coasts
- >30 sites in 20 countries
- Published standardized protocols as a book
- Trained >50 young scientists from Indonesia, Japan and Malaysia
- Linking ecosystem function with biodiverisity

Manual for Biodiversity Observation



Problems for DIWPA and NaGISA

- Difficulty in funding issues
  - Maintaining and broadening networks
  - Continuing the observation
  - Database establishment
- First results should be publicized
- Need to re-consider and develop the observation manuals
  - Feasible for many sites with less capable
  - Linkage with data of remote censing, physical environment
  - Meet the user's need (human dominated ecosystems, landscape level monitoring)
- Broaden and secure the observation network
- Capacity building for developing countries

ILTER

International Long Term Ecological Research

- Since 1993
- Network between LTER sites
- Excuting internationally collaborating researches
- Database
- Capacity building (i.e. informatics)

East Asia Pacific Regional LTER Network
- Australia
- China
- China-Taipei
- Mongolia
- South Korea

North American Regional LTER Network
- Canada
- Mexico
- United States

Central/Eastern European Regional LTER Network
- Czech Republic
- Hungary
- Latvia
- Poland
- Slovak Republic
- Ukraine

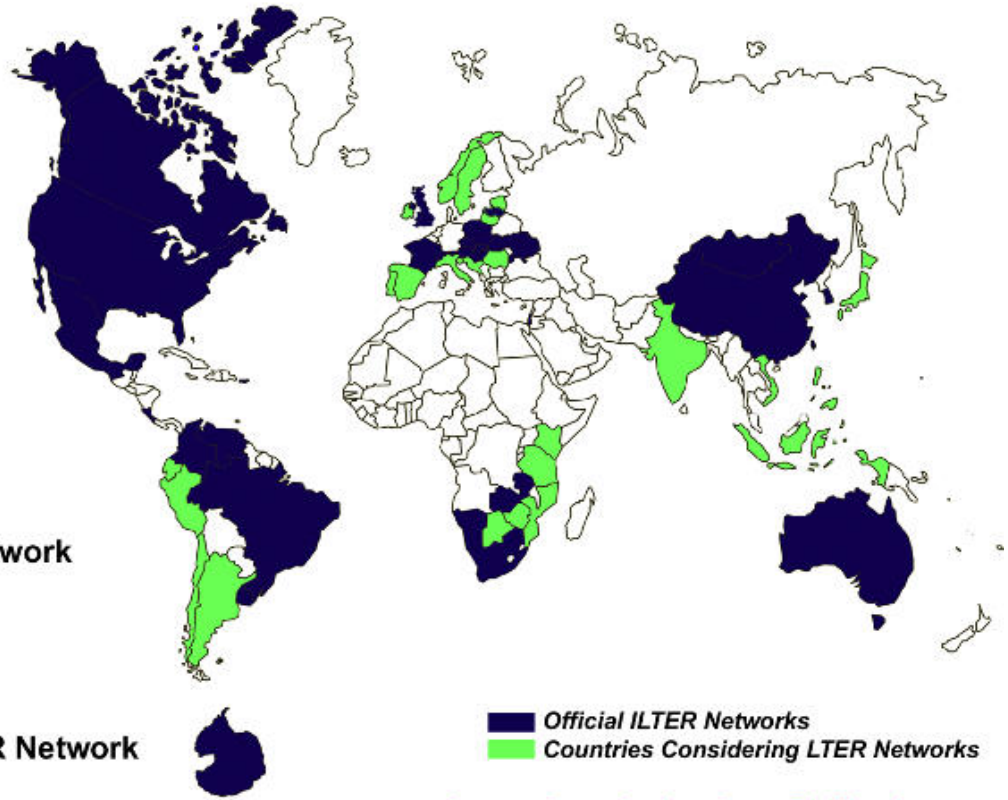
African Regional LTER Network
- Mozambique
- Namibia
- South Africa
- Zambia

Middle East Regional LTER Network
- Israel

Western European Regional LTER Network
- Austria
- France
- Switzerland
- United Kingdom

Central/South American Regional LTER Network
- Brazil
- Colombia
- Costa Rica
- Uruguay
- Venezuela

The International Long Term Ecological Research Network



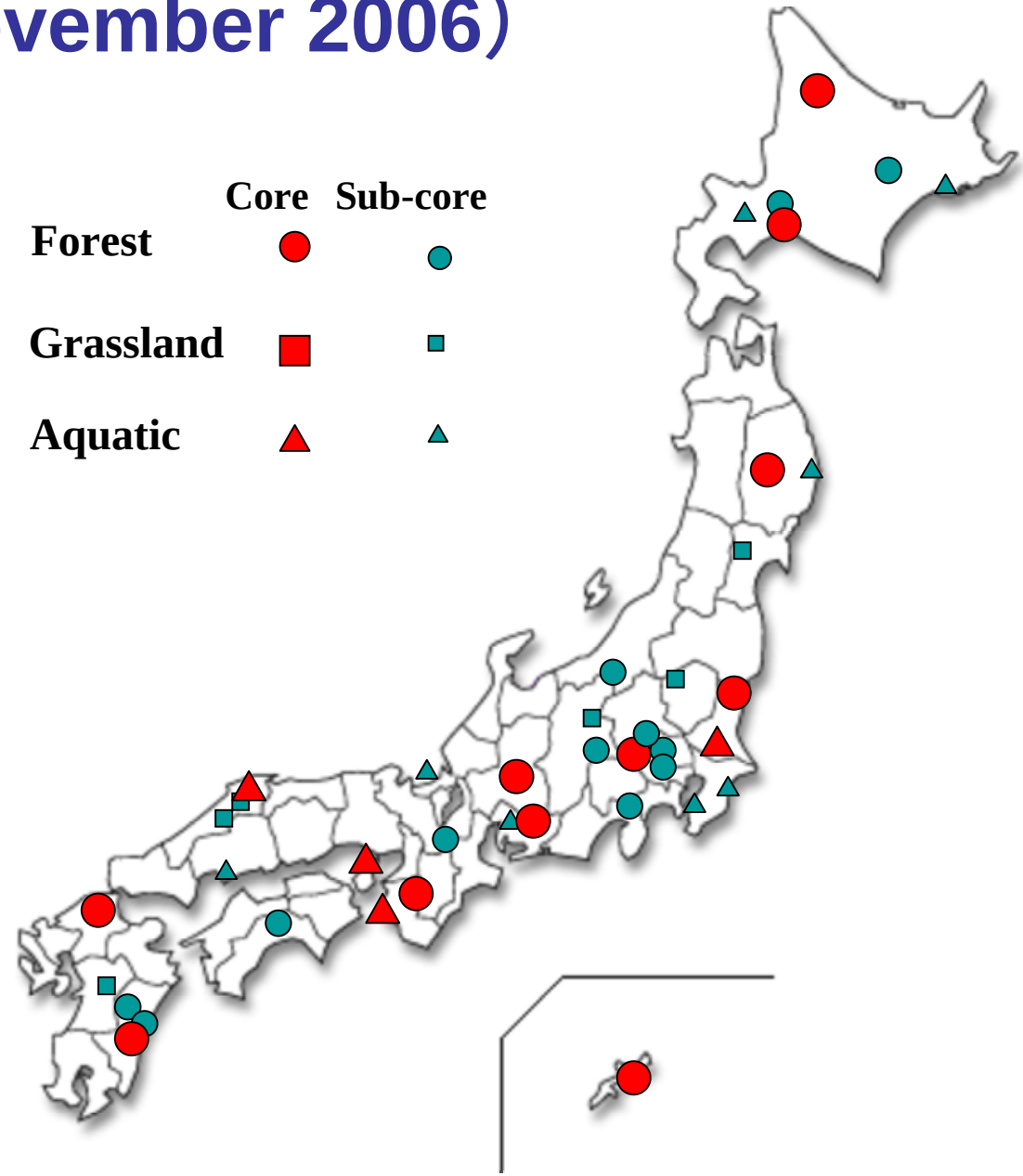
Official ILTER Networks
Countries Considering LTER Networks

Argentina	Ireland	Philippines
Botswana	Italy	Romania
Chile	Japan	Slovenia
Croatia	Kenya	Spain
Ecuador	Lithuania	Sweden
Estonia	Norway	Tanzania
India	Portugal	Vietnam
Indonesia	Peru	Zimbabwe

Updated November 04

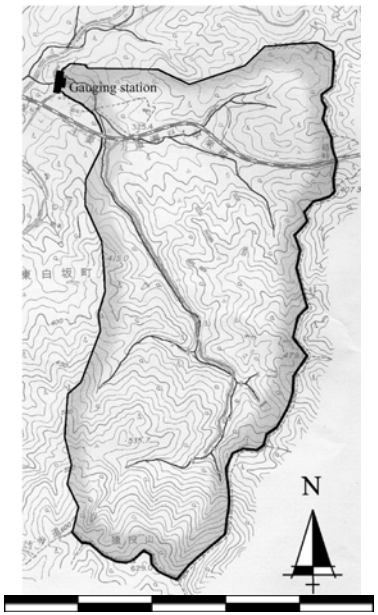
JaLTER Sites（November 2006）

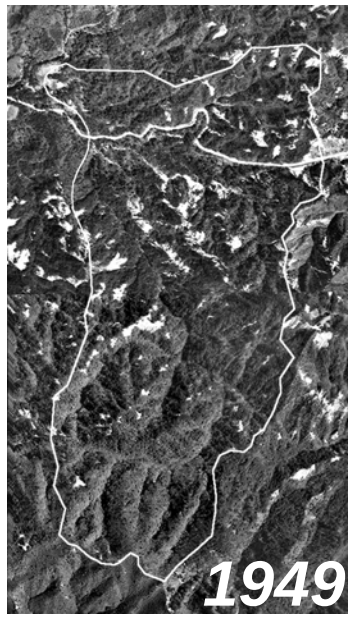
- Network formally established in November 2006
- Will join ILTER in August 2007
- Covering various types of ecosystem
- Relatively stable observation sites (University forests, field station of universities and national institutes)
- Long-term observation data are already existing

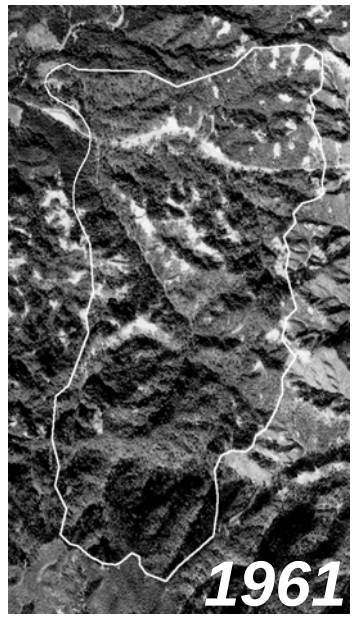


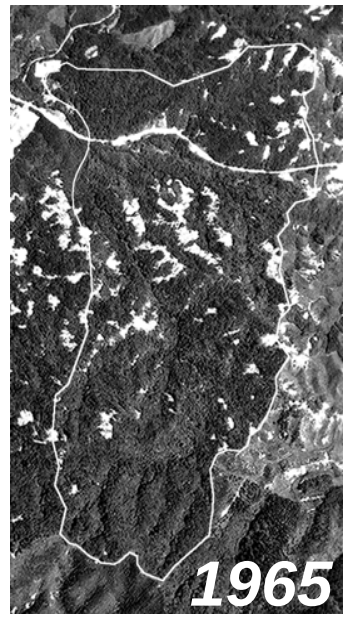
Various platforms available for observation

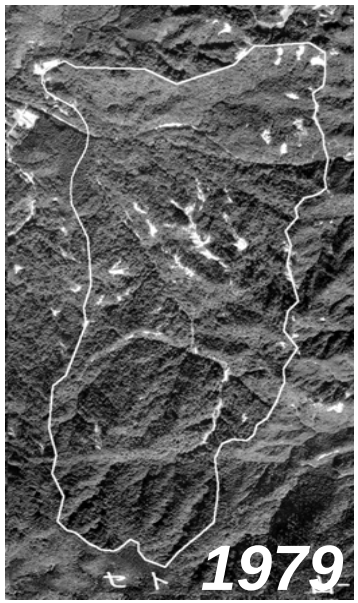
Long-term record of the change in land cover (Naiyanan,2000)

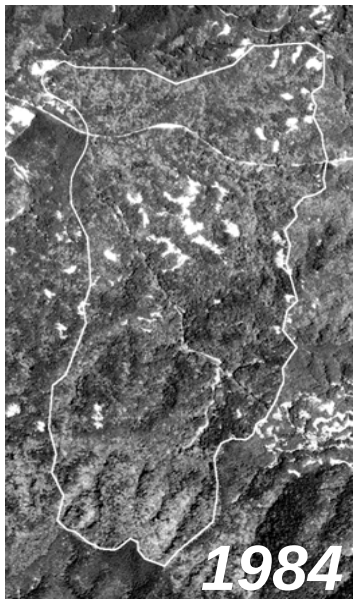


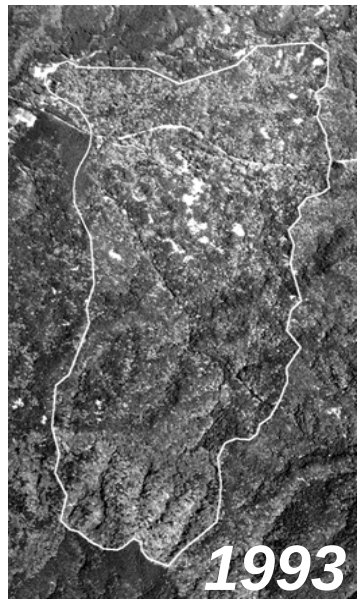


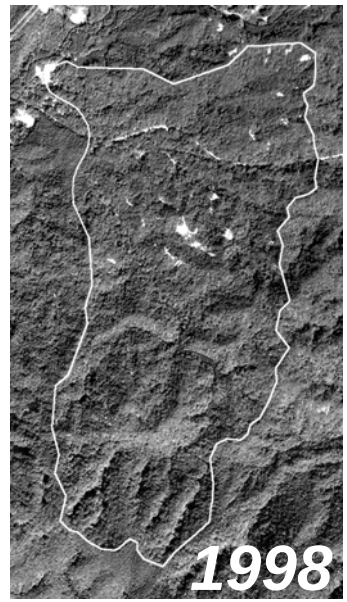


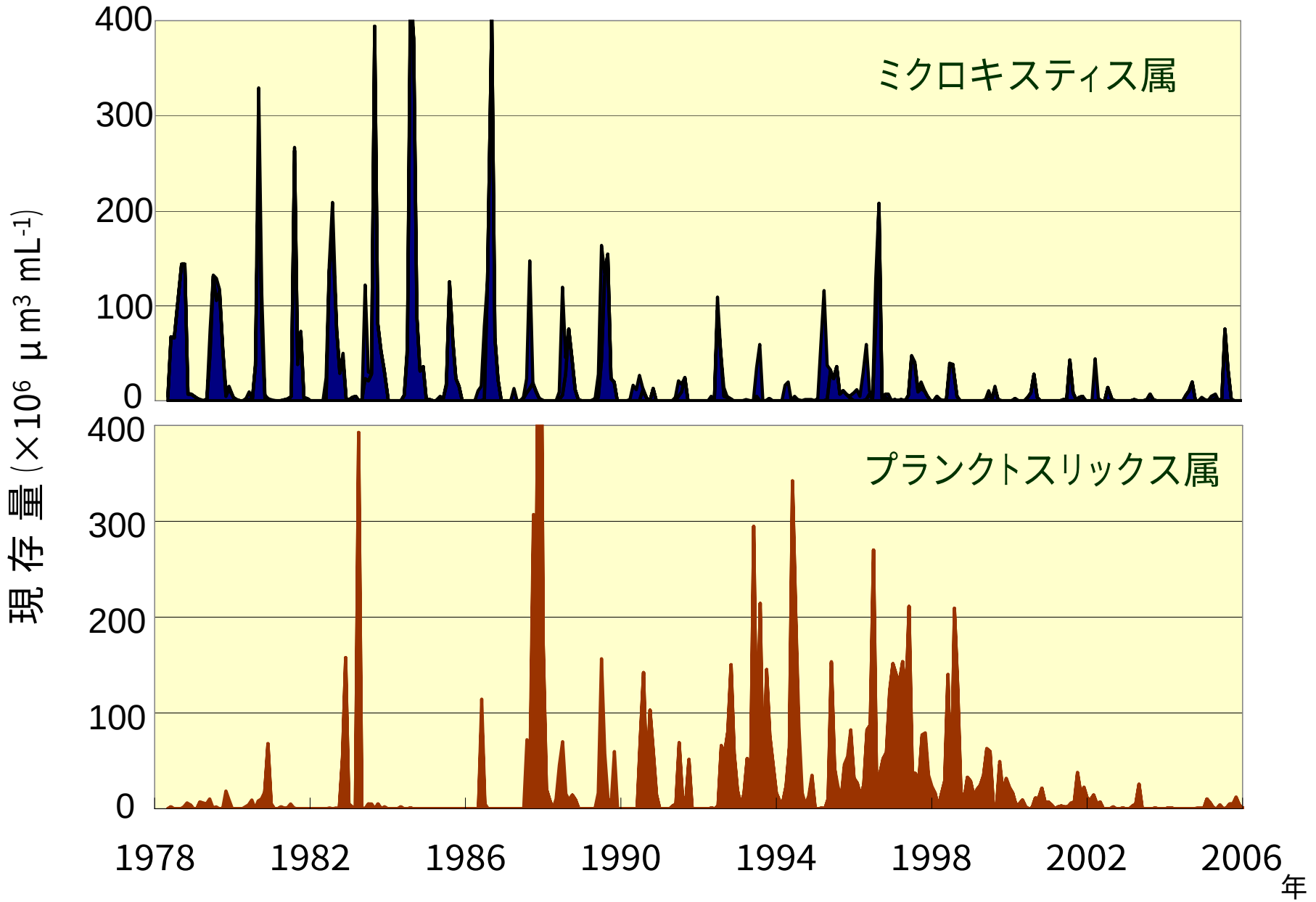






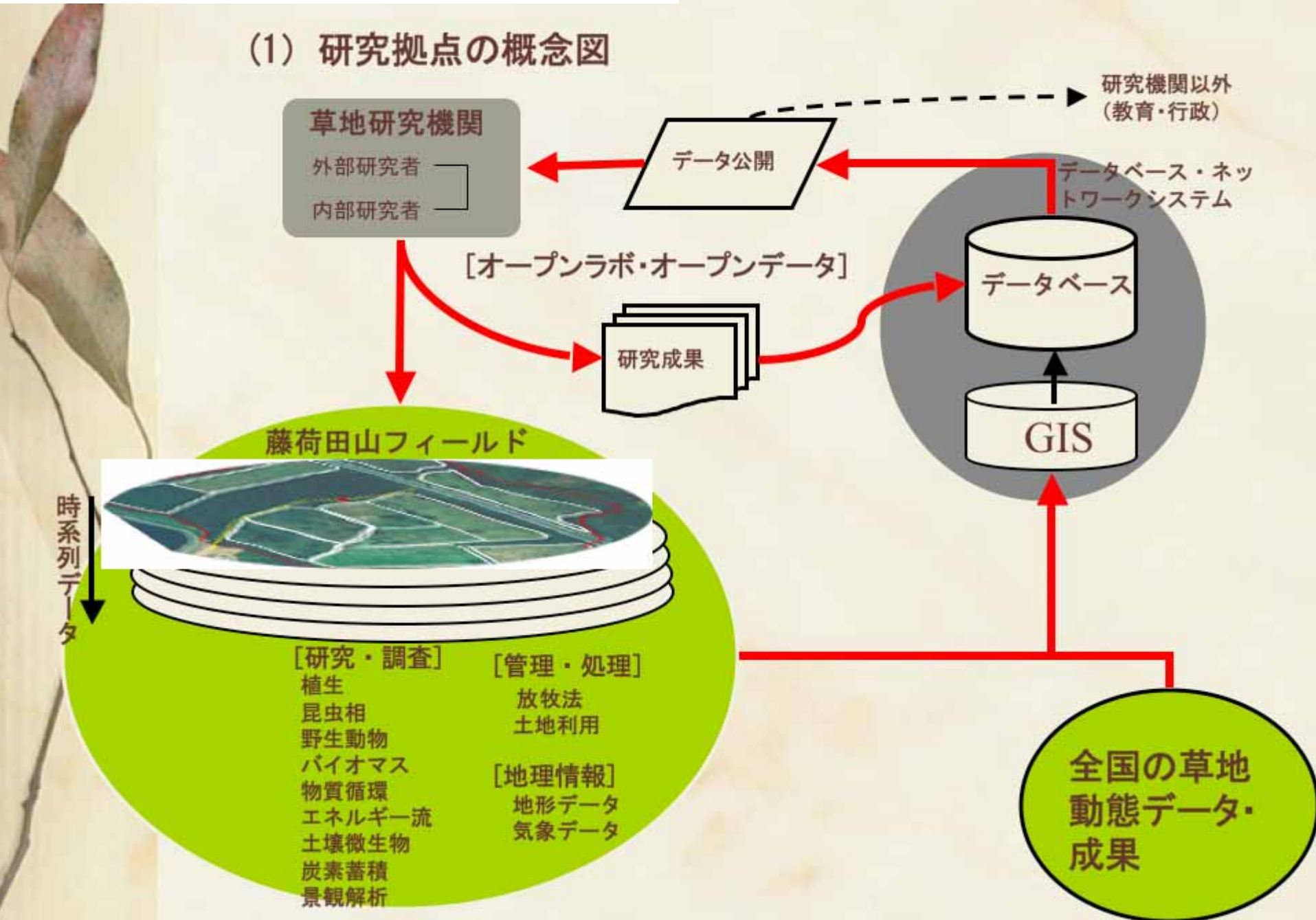






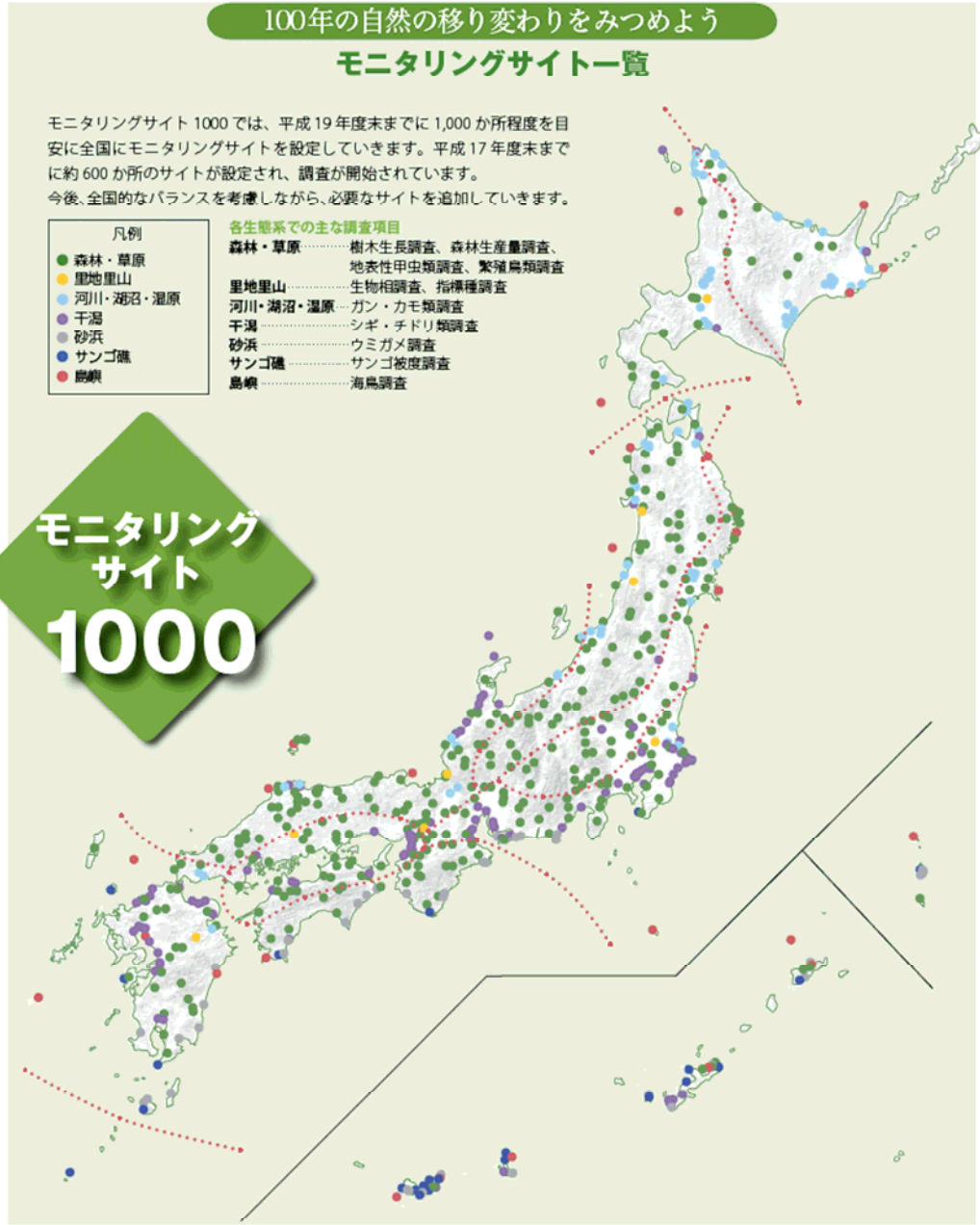
Long-term data on freshwater planctons (Lake Kasumiga-ura)

Data base of grassland ecology



Problems for LTER

- Just established
- Difficulty in funding issues
  - Maintaining networks
  - Continuing the observation
  - Database establishment
- Need for coordination office and database center
- Discussion among EAP ILTER network
- Capacity building for developing countries



Monitoring 1000

- Initiative of the Ministry of Environment, Japan
- Secured funding
- Many observation site covering various ecosystems
- Standard methods
- Domestic activity only

Overall summary and recommendations

- **Major issue and difficulty**
  - Confirm the importance of the biodiversity observation in Japanese society (put higher priority in GEOSS)
  - **Funding support** for continuing observation
  - Consider the user's need (e.g. Biodiversity Target 2010)
- **Step to the joint collaboration and integration**
  - Need for **coordination structure** for different activities
  - Additional participations, in particular developing countries in Asia-Pacific
  - Develop interoperability of observation data and database
- **Capacity building**
  - **Capacity building for developing countries** (Biology, Informatics, Observation techniques)
- **Step to GEOSS**
  - **Comprehensive observatory sites** for the "System of Systems"
  - Good balance between ground and remote sensing data
  - Develop advanced methods for ground observation