The 8th AP BON Workshop
12-13 September 2016
Biodiversity Research Center, Academia Sinica
Taipei, Taiwan

AP BON, Asia-Pacific Biodiversity Observation Network: Introduction from co-chairs

Tetsukazu Yahara (Japan)
Sheila Vergara (ACB)
Eun-Shik Kim (Korea)
GEO: Group on Earth Observation

THE GLOBAL EARTH OBSERVATION SYSTEM OF SYSTEMS

INFORMATION FOR THE BENEFIT OF SOCIETY

Disasters, Health, Energy, Climate, Agriculture, Ecosystems, Weather, Water, Biodiversity

GEO BON

10 year implementation: 2005-2015
History of GEO BON


2007: GEO Ministerial in Cape Town

2008: Interim GEO BON Committee formed 14-16 January

2008: 2nd International workshop, Berlin/Potsdam 8-10 April
Draft GEO BON concept document

2009: GEO Plenary, Washington DC Nov 09

2010: IP drafting meeting, Asilomar 22-24 Feb
Global bodies on biodiversity

- Assessment (IPBES)
- Policy (CBD)
- Observations (GEO BON)
- Research (DIVERSITAS> Future Earth)

Modified from Anne Larigauderie’s slide
CBD COP10 (2010, Aichi)
Initiatives sponsored by MoE, Japan

ESABII
East and Southeast Asia Biodiversity Information Initiative

Targeting area: East and Southeast Asia
Biodiversity Centers ★
Japan: Biodiversity Center of Japan
Korea: National Institute of Biological Resource (NIBR)
China: Chinese Academy of Science
Indonesia: Research Center of Biology (RCB), LIPI
Vietnam: Center for National Resources Management and Environmental Studies (CRES) VNU.
ASEAN: ASEAN Center for Biodiversity (ACB)
S-CBD: Secretariat of Convention on Biological Diversity

AP-BON
Asia-Pacific Biodiversity Observation Network

Targeting East Asia and Pacific Region
- Identification of existing researches on biodiversity
- Distribution of Monitoring sites
- Development of standardized data collection
- Data integration, storage and analysis
- Capacity building for data collection and data analysis
- Provision and dissemination of the information

Networking among Biodiversity Centers
- Data provision/sharing

Collaboration
GEO-BON
GBIF

Contribution
Decision Making in Biodiversity Conservation

J-BON
a voluntary network of Japanese scientists
<table>
<thead>
<tr>
<th>Year</th>
<th>GEOSS AP Symposia</th>
<th>GEO BON</th>
<th>AP BON Meetings</th>
<th>National BONs</th>
<th>CBD COPs</th>
<th>IPBES</th>
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<td>3rd GEOSS AP (Kyoto, February)</td>
<td>1st AP BON (July, Japan) 2nd AP BON (December, Japan)</td>
<td>Japan BON (May)</td>
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<td>2010</td>
<td>4th GEOSS AP (a session, Bali, March)</td>
<td>GEO BON Meeting (February, USA) 3rd AP BON (CBD COP10 Preconference, March, Japan)</td>
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<td>COP10 (Japan, Side-event)</td>
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<td>2011</td>
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<td>4th AP BON (December, Japan)</td>
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<td>2012</td>
<td>5th GEOSS AP (Tokyo, April)</td>
<td>GEO BON Meeting (December, USA) WCC of IUCN (September, Korea)</td>
<td>Korea BON, Nepal BON, Bangladesh BON</td>
<td>COP11 (India, Side-event)</td>
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<td>6th GEOSS AP (Ahmedabad, February)</td>
<td>5th AP BON (November, ACB, Philippines)</td>
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<td>Philippines BON</td>
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<td>2014</td>
<td>7th GEOSS AP (Tokyo, May)</td>
<td>IC and AB (June, Germany)</td>
<td>6th AP BON (October, NIBR Korea)</td>
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<td>COP12 (Korea, Side-event)</td>
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<td>2015</td>
<td>8th GEOSS AP (Beijing, September)</td>
<td>IC and AB (June, Germany)</td>
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<td>Sino BON, Indonesia BON</td>
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<td>2016</td>
<td>2016-2025 A New GEO Strategy Plan Initiated</td>
<td>All-Hands Meeting (July, Germany) 7th AP BON (ACB, Thailand) 8th AP BON (Taipei, Taiwan)</td>
<td>WCC of IUCN (September, USA)</td>
<td>COP13 (December, Mexico)</td>
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<td>Plenary-4</td>
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</table>

**History of AP BON and Other Network Activities**
Publications of AP-BON Book

2012
S. Nakano · T. Yahara
T. Nakashizuka Editors
The Biodiversity Observation Network in the Asia-Pacific Region
Toward Further Development of Monitoring
Springer

2014
S. Nakano · T. Yahara
T. Nakashizuka Editors
Asia-Pacific Biodiversity Observation Network
Integrative Observations and Assessments
Springer

2016
Shin-ichi Nakano · Tetsukazu Yahara
Tohru Nakashizuka Editors
Asia-Pacific Biodiversity Observation Network
Aquatic Biodiversity Conservation and Ecosystem Services
Springer
Developing a regional network of biodiversity observation in the Asia-Pacific region: achievements and challenges of AP BON


• To establish a coordinated Asia-Pacific network that gathers and shares information on biodiversity and ecosystem services;

• To provide tools for data collection, sharing/exchange, analysis, and synthesis integration;

• To contribute to improving ecosystem management, sustainable use of biodiversity, and human well-being.

Yahara et al. 2014, p. 13
5th AP BON Workshop in ACB

Fifth Meeting of the Asia-Pacific Biodiversity Observation Network (AP-BON) Report

<table>
<thead>
<tr>
<th>Annex No.</th>
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<tr>
<td>1</td>
<td>Directory of Participants</td>
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<td>2</td>
<td>Welcome Speech</td>
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<tr>
<td>3</td>
<td>Programme</td>
<td>DOWNLOAD</td>
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<td>4</td>
<td>AP-BON History and Strategy</td>
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<tr>
<td>5</td>
<td>State of Biodiversity Observation in the Philippines</td>
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<td>6</td>
<td>Inventory and Assessment of Biodiversity in Mts. Igigo-Baco Mountain Ranges; Mt. Masulog Key Biodiversity Area</td>
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<td>7</td>
<td>National Museum of Nature and Science</td>
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<td>8</td>
<td>Current Biodiversity Observation in Indonesia</td>
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<td>9</td>
<td>Promotion of the Network Activities for the Biodiversity Observation in Nepal and Region</td>
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<td>Current Activity on Biodiversity Observation Data Archiving in Japan</td>
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<td>11</td>
<td>The ASEAN Clearing House Mechanism</td>
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<td>12</td>
<td>Biodiversity Databases at the Forest Research Institute Malaysia and the Malaysian Clearing House Mechanism</td>
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<td>13</td>
<td>Followup measures of the IUCN Resolution for the promotion of the AP-BON adopted at the World Conservation Congress in 2012</td>
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<td>14</td>
<td>IGMOO’s Biodiversity information and Gaps in Information Availability and Sharing in HH Region</td>
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<td>Indian Bio-resource Information Network</td>
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<td>A GIS web server for the development, circulation, and utilization of biodiversity information</td>
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<td>Database for freshwater fishes in East and Southeast Asia</td>
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<td>18</td>
<td>Biodiversity Informatics in China</td>
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<td>FishBase Information and Group, Inc. Databases</td>
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<td>Plant Databases in Singapore</td>
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<td>National Institute for Agri-Environmental Sciences and Collaboration work in Japan</td>
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<td>22</td>
<td>Day 1: Meeting Discussions</td>
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<td>Compilation of a Regional Red List</td>
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<td>Data Publication s means of sharing biodiversity information</td>
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<td>AP-BON Potential Products: 2014 and beyond</td>
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<tr>
<td>26</td>
<td>Photo Gallery</td>
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</table>
Potential products 2014 and onwards

Suggestions

• Regional Red List
• KBAs
• Essential Biodiversity Variables
• Support for work on Mosses
• Publishing data papers
Updates on Initiatives identified in APBON-5

- **Red Lists**
  - No summary of red lists (a chapter in APBON book) an opportunity for redlisting in each country
  - Yahara – will distribute questionnaire to each country for a summary of redlists per country

- **KBAs**
  - China has identified hotspots
  - Japan has organized map grids to identify areas critical to biodiversity conservation
  - KBAs for mosses in East and Southeast Asia has been made,
  - KBAs for Asian Bryophytes identified (triggered by endangered mosses and liverworts, management criteria for manageability, relevant checklists must be available, people who propose a location must at least visit the area to see if the species are truly there. 6 places were identified (in China, Kinabalu, Gunung Tahan, Mt Tabayuk, one in Japan, province bordering China and Russia)

- **Taxonomic Capacity Building**
  - (Dedi) there is very low capacity in identifying species
  - The process has to be speeded up to contribute to data publication
A core project S9 sponsored by the Ministry of the Environment of Japan (MoEJ) ended in March 2016.

IPBES assessments have started.
  – Linked to CBD 2020 targets (Aichi Targets)

A New GEO Strategic Plan 2016-2025 is being implemented.

Linkage to BIFA workshop; many new participants in this 8th workshop.

Let us develop an AP BON work plan towards 2020
  – Until next GEOSS-AP symposium: January 18-19 at Tokyo
Integrative observations and assessments of Asian biodiversity (sponsored by MoEJ; 2011-2015)

- Developing models & tools to assess biodiversity & ecosystem services in AP
- Developing models and tools to identify hot spots and EBSA in AP
- Research plan and outputs co-designed with MoE (user)

Theme 1: Modeling and mapping biodiversity changes

Theme 2: Gene and species diversity changes

Theme 3-5: Forest, freshwater and marine ecosystems

Contribution to IPBES, GEO BON, CBD, REDD+, & National Strategy
Vascular Plant Species Richness / Transect (500 m²)

(Diversity)

Higher

Lower

(100 x 4 m)
**Machilus**

Haplotype network

7 described vs 27 new species

Cambodia

Vietnam

Thailand

Malaysia

**ITS seq 705 bp**

Software: tcs

File: 160809_Muchilius_ITS_2cut.phy

Fix Connection Limit At 50 steps

Gaps=5th state
## Many more new species: a case of Lauraceae

### Table of Distribution

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<thead>
<tr>
<th>Genus</th>
<th>Known</th>
<th>Unknown</th>
<th>Bokor</th>
<th>Hon Ba</th>
<th>Malaysia</th>
<th>Indonesia</th>
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*Including known but undescribed spp. (Yahara unpublished)*
1. Setting the scene
2. Nature’s benefits to people and its impact on quality of life
3. Status and trends of biodiversity and ecosystems underpinning nature’s benefits to people
4. Direct and indirect drivers of change in the context of quality of life
5. Integrated analysis of interactions of the natural world and human society
6. Options for decision-making across scales and sectors
AP BON Book 4: States and trends of species diversity

- Specific indicator taxa: mammals, birds, amphibians, reptiles, fish, bee, orchids, ferns
  - Basic messages
- Threatened species
  - Extinction risk analyses: Fabaceae, vascular plants of Japan
  - IUCN Red List
  - National Red Lists
- Discovery of new species: Lauraceae, each country
  - No of new species published per year
  - Emphasis on the need for taxonomic capacity building for all taxa
- Hotspots of species richness and threats:
- Invasive alien species
- Function of species diversity
8th AP BON Workshop: Agenda

• 1st day: Setting the scene
  – Self-introduction of new participants
  – Recent progress in Taiwan
  – New GEO BON structure
  – Collaboration with ILTER
  – Data sharing: achievements of BIFA workshop

• 2nd day: Discussion for Work Plan
  – Data sharing
  – Collaboration with IUCN
  – Developing a site network including LTER sites
  – Other ideas
Eiji Suzuki and his collaborators

Smithsonian large-scale plots

Networking observation sites

Plot-based approach: forest plots in SE Asia