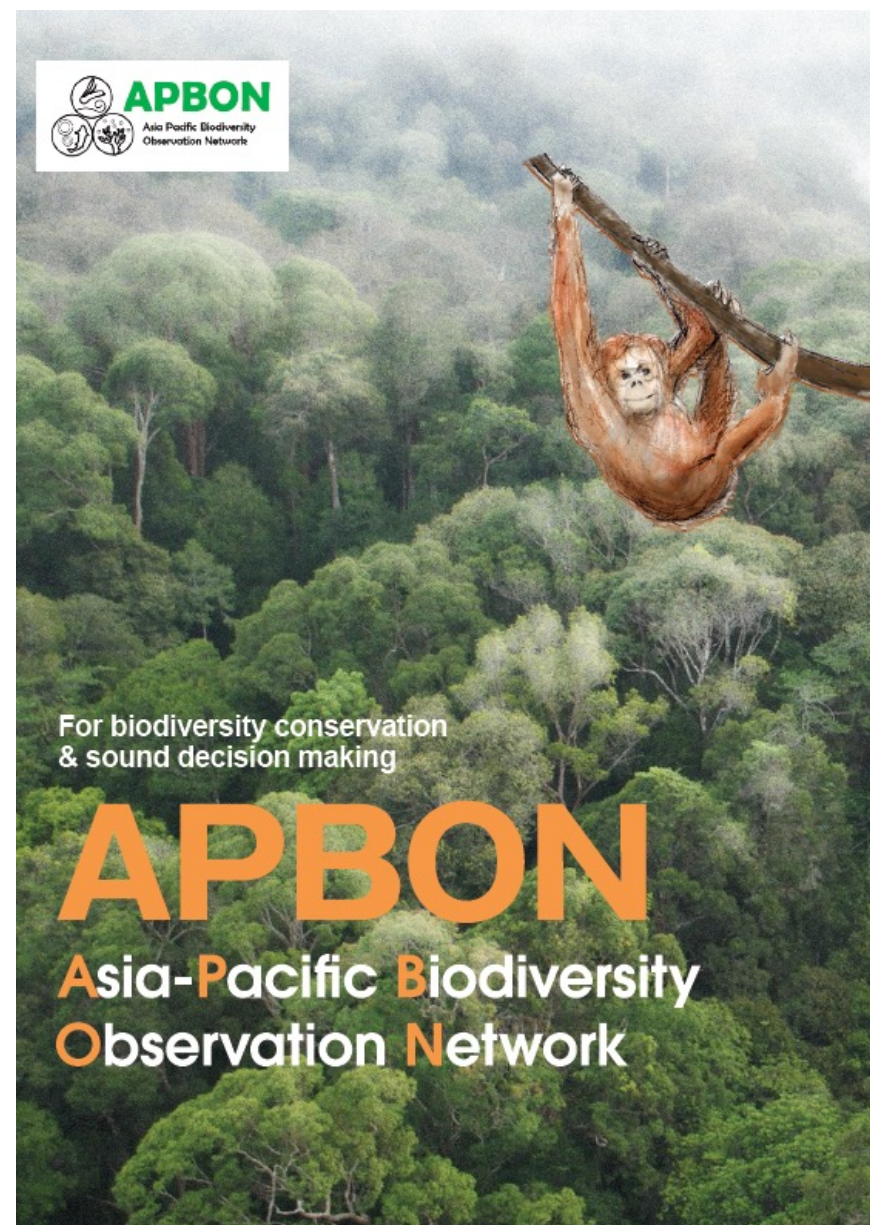


The 16<sup>th</sup> Asia-Oceania GEO Symposium | 3 – 5 September 2024 | Tokyo

# TG2 : Asia-Pacific Biodiversity Observation Network

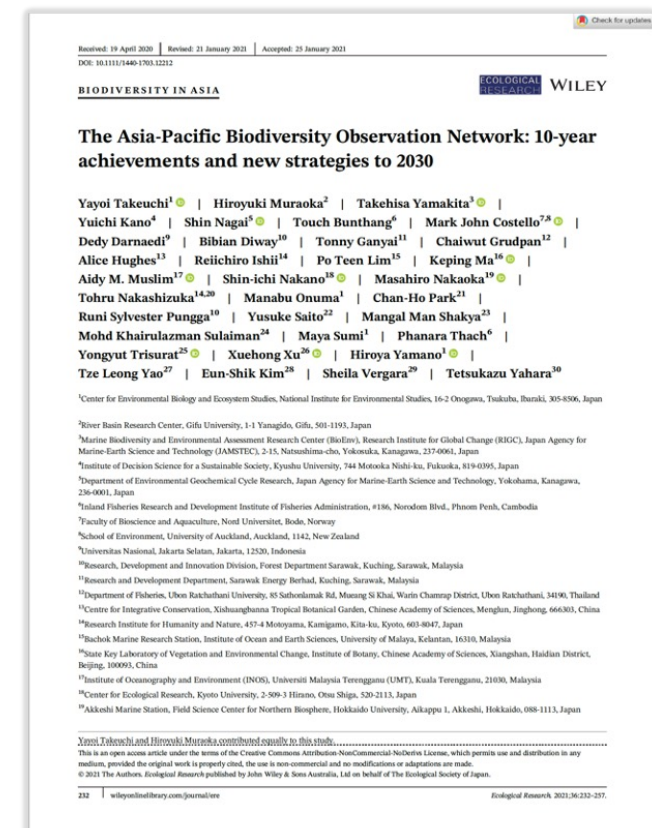
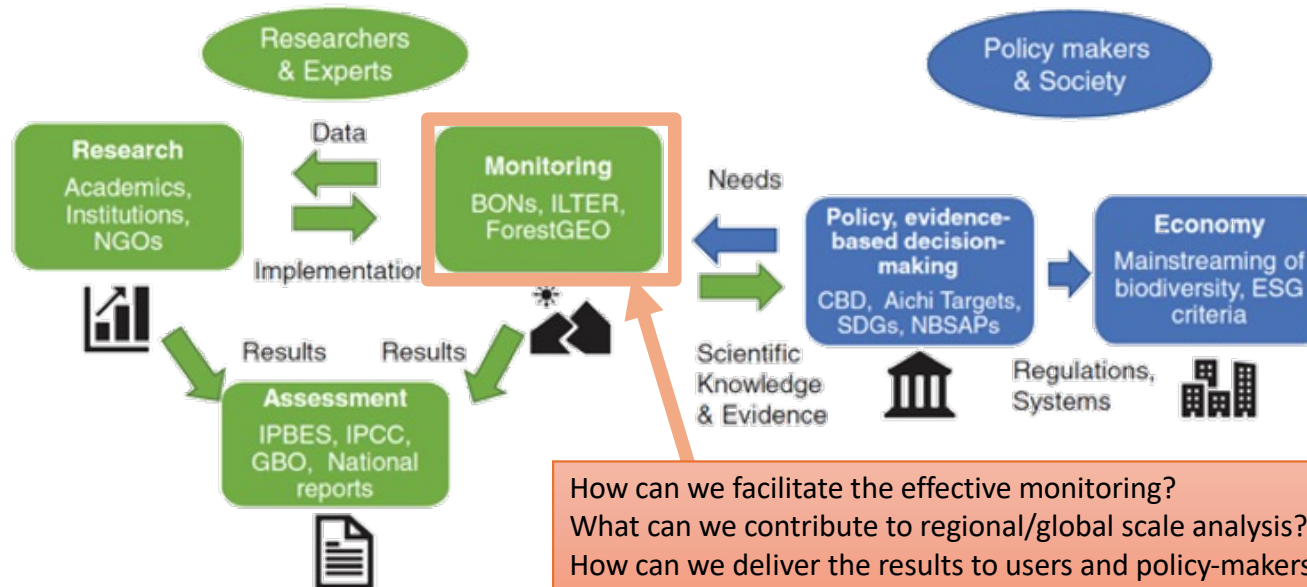


# APBON's missions

- ❑ Promoting interdisciplinary research and problem-solving approaches with filling the observational and knowledge gaps,
- ❑ Promoting data sharing and data accessibility through/by networks of the observation networks,
- ❑ Delivering our information and knowledge to stakeholders and global platforms



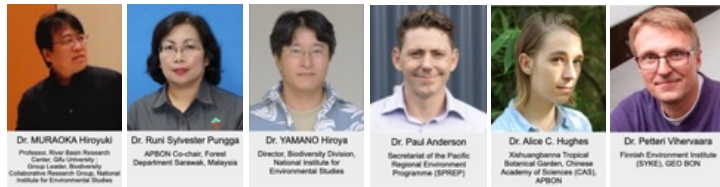
Takeuchi & Muraoka et al. (2021)  
*Ecological Research*



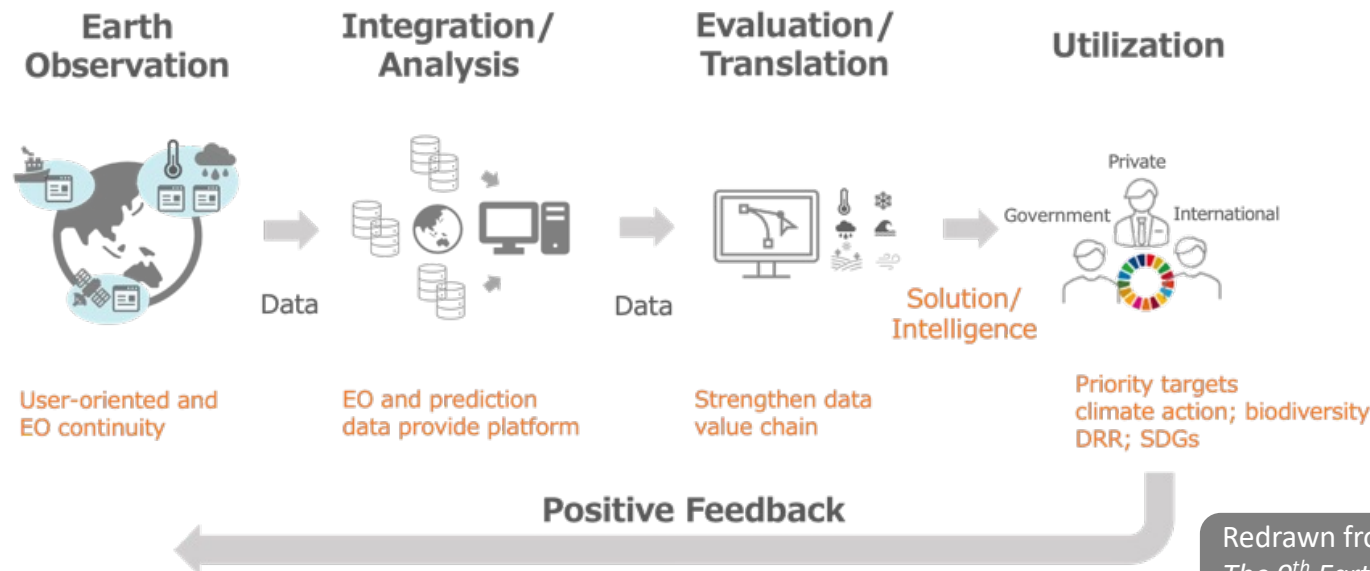
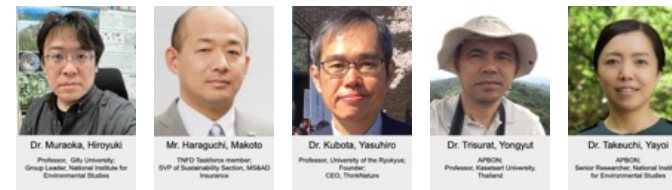
# Growing needs to develop value chain -- Observations, Data processing, and Users to address challenges



Special Session -- Biodiversity  
for Addressing Climate Change  
& Disaster Risk Reduction



Special Session -- Biodiversity and  
Sustainable Society: How EO  
contributes to integrating nature  
into economic activities



Redrawn from the final report by  
*The 9<sup>th</sup> Earth Observation Promotion  
Committee, Japan, February 2023*



# Needs and Challenges to connect observations and society



## Broader understanding

### Multiple dimensions of “biodiversity and ecosystem data”

– genetic, species, ecosystem; no. of threatened species; ecosystem functions; ...

## Integrative research

Inter-disciplinary research and understanding on Climate – Biodiversity – Ecosystem functions interdependencies across scales

## Cross-scale observations

Filling spatial / thematic observational gaps by connecting *in-situ* and satellite observations, and model simulations

## Open science

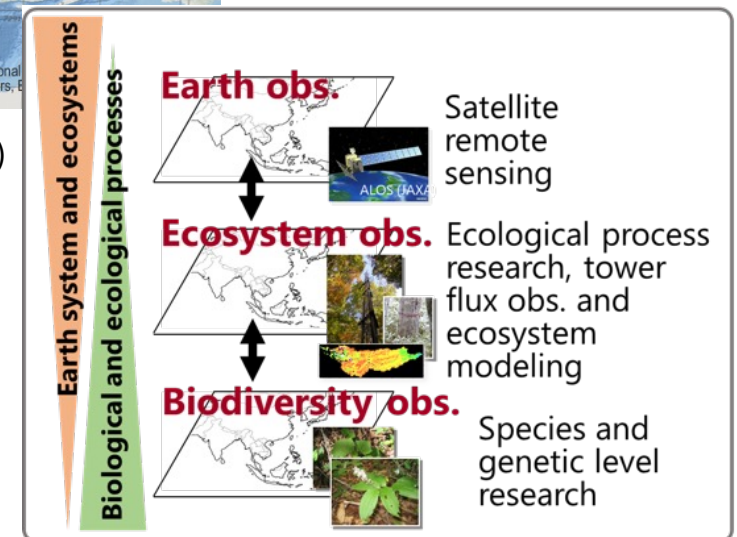
Data / Knowledge generation and sharing through national and regional cooperative capacity development, citizen science

## Promoting value chain

Earth observations – analysis – evaluation – intelligence – decision making (*science to action*) by networking networks and stakeholders



Takeuchi et al. (2021)



(Muraoka et al. 2012 in APBON book)

# Global Biodiversity Observing System (GBIOS) to fill observational and knowledge gaps



Gonzalez et al. (2023) Nature Ecology & Evolution

## a Building a BON

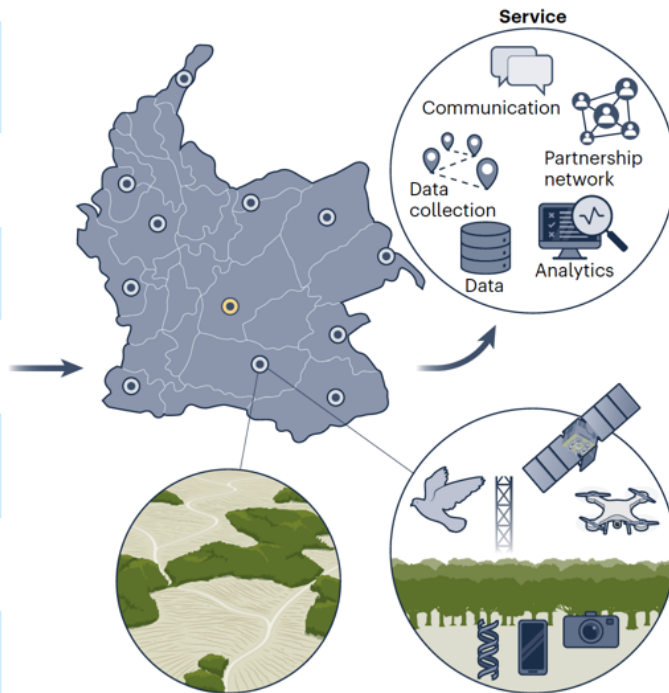
**Engagement**  
Authorizing environment, implementation partnership

**Assessment**  
User needs, inventory of data, models, tools

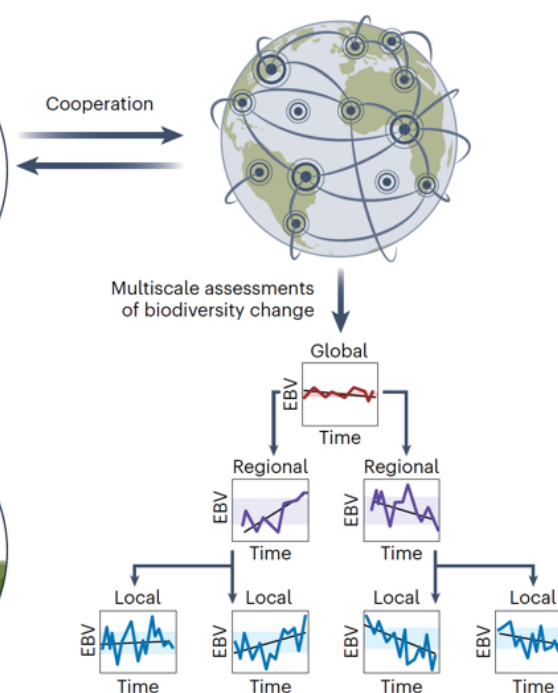
**Design**  
Governance, data management, sampling network, analysis

**Implementation**  
Funding, partnerships, reporting

## b National BON

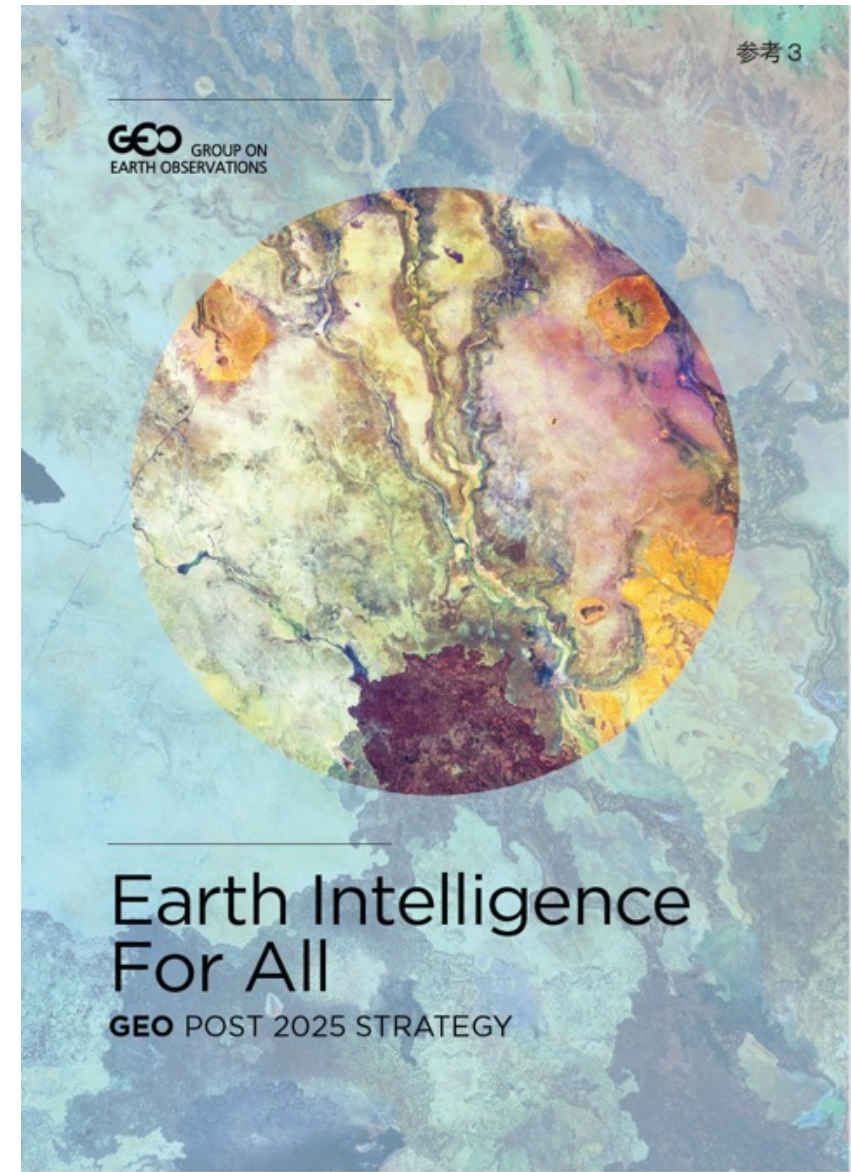


## c GBIOS



## Objectives of this session

- (1) To identify the data and observation needs to develop EBV (and relevant EOVS, ECV) in the AP region,
- (2) To discuss cooperative plans for developing GBIOS in the AP region and for connecting with data infrastructures (e.g., DIAS),
- (3) To develop APBON's input to AOGEO and GEO Post-2025 Strategy – “Earth Intelligence for ALL”





## **[Part 1] From data to EBVs: Preliminary assessment of data gaps and mismatches of EBVs from Asia-Pacific perspectives**

<b>15:50 – 16:50</b>	<p>Moderators: Yayoi Takeuchi (NIES, Japan) and Take Yamakita (JAMSTEC, Japan)</p> <p>Speakers:</p> <ol style="list-style-type: none"><li>1. Yayoi Takeuchi: From Terrestrial observation perspectives</li><li>2. Take Yamakita: From Marine and Coast observation perspectives</li><li>3. Jamie Kass (Tohoku University): From biodiversity modeling perspectives</li><li>4. Alice Hughes (University of Hong Kong): From global coordination perspectives</li></ol> <p>Discussions:</p> <p>Concrete actions for developing EBV/EOV data in AP region</p>
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## **[Part 2] Observation needs and system to fill the gaps – Towards GBiOS in the AP region**

<b>16:50 – 17:50</b>	<p>Moderators: Yongyut Trisurat and Hiroyuki Muraoka</p> <p>Speakers:</p> <ol style="list-style-type: none"><li>1. Osamu Ochiai (JAXA; guest speaker): Biodiversity observation from space</li><li>2. Shin Nagai (JAMSTEC): Multi-platform phenology observations in AP region</li><li>3. Christian Elloran (ASEAN Center for Biodiversity) [Online participation]: Filling the observation and knowledge gaps in ASEAN countries</li><li>4. Keisuke Takahashi (Biodiversity Center of Japan): Long-term biodiversity monitoring in Japan</li></ol> <p>Discussions:</p> <p>What would be the biodiversity observation and data integration system in AP region? Towards our participation to the GBiOS.</p>
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## **[Part 3] APBON's priorities for observations, synthesis, and cooperation**

<b>17:50 – 18:40</b>	<p>Drafting APBON's input to AOGEO Symposium statement</p> <p>Moderators: Runi Anak Sylvester Pungga, Yongyut Trisurat, Hiroyuki Muraoka</p>
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# Summary of APBON's achievements and way forward



## Achievements

- ❑ The Asia-Pacific Biodiversity Observation Network (APBON) is continuing its cooperation in capacity building, and data and knowledge sharing through a webinar series and workshops.
- ❑ APBON has assessed gaps and needs for biodiversity data and knowledge throughout the region to meet the requirements of the Convention of Biological Diversity Kunming-Montreal Global Biodiversity Framework and other relevant assessments.
- ❑ Noteworthy national activities include restarting the Japan BON, publication of biodiversity data (ASEAN, Thailand), intensive monitoring of fish in the Mekong and Tonle Sap Rivers (Cambodia), and a census on biodiversity data across the AP region.



# Summary of APBON's achievements and way forward



## Ongoing issues

- ❑ APBON continues to assess needs and accessibility for data obtained by local and national biodiversity observation networks.
- ❑ APBON is planning to develop Essential Biodiversity Variables (EBVs) for national and regional scales by combining existing *in-situ* data with satellite data and species distribution models, but EBVs are still challenging for APBON due to lack of accessibility of *in-situ* data.
- ❑ Another key challenge is aligning APBON's activities with the National Biodiversity Strategies and Action Plans (NBSAPs) in each country to enhance cooperation between science and policy for biodiversity conservation.
- ❑ Further coordination should be pursued through engagement activities of APBON, national BONs, and AOGEO, and other relevant communities globally. In particular, APBON will engage with national and regional stakeholders on the importance of biodiversity data sharing and continuous cooperation for assessment and prediction of biodiversity and ecosystem services under climate and societal impacts.

# Summary of APBON's achievements and way forward



## Way forward for post-2025

- ❑ Improving data accessibility at regional and national levels will be fundamental for a comprehensive assessment of the state of biodiversity, planning of effective conservation measures, and development of effective NBSAPs.
- ❑ Development of science and policy cooperation is a high priority in our region, as our countries contain many biodiversity hotspots impacted by rapid changes in climate, biodiversity, and society.
- ❑ APBON further acts as a platform for such cooperation in the region and collaborates with GEO BON, GEO community and national and regional stakeholders for harmonized actions to be taken at all scales.

## APBON Highlights FY2023

**APBON** (Asia Pacific Biodiversity Observation Network) is a platform for science-policy engagement. Our mission is to increase the exchange of know-how between institutions and research biodiversity science research in the Asia-Pacific, thereby contribute to evidence-based decision-making.

### APBON highlights at a glance

#### Networking and National BON

- APBON: 4 webinars and 1 workshop
- Restart the JBN's activities: capacity-building WS

#### Biodiversity data

- ASEAN Biodiversity Outlook 3
- Disseminated digital biodiversity atlas to Thailand Biodiversity Information Facility

#### Conservation

- Held a workshop on biosphere reserves and OECMs in the Hindu Kush
- Launched the GEF/UNDP/ASEAN Effectively Managing Networks of Marine Protected Areas in Large Marine Ecosystems in the ASEAN Region
- Planted 35 million trees for the Malaysia Greening Campaign

#### Policy

- Japan's 6th NBS was launched.
- Thailand's NBS inclusion of the 3
- 26th SBSTT Strengthen Biodiversity Monitoring for Enhanced in the KM-GBF

#### Monitoring bio

- Fish and fisheries in Mekong and Tonle Sap
- Cambodia
- Ecological health in Cambodia

## APBON Highlights FY2023

Apr.

Held the 16<sup>th</sup> APBON Web Seminar

- "GEOBON Strategy" by Dr. Maria Cecilia Londono
- "Bringing to life a global biodiversity observing system" by Prof. Andrew Gonzalez

May

Jun.

Held the inception workshop GEF/UNDP/ASEAN Effectively Managing Networks of Marine Protected Areas in Large Marine Ecosystems in the ASEAN Region (ACB)  
Contributed to the GEO Symposium 2023 and GEO Open Data Open Knowledge Workshop

Jul.

Held the 17<sup>th</sup> APBON webinar

- "Master site concept in Japan" by Dr. Hiroyuki Muraoka (Gifu University)
- Discussion: Identifying the availability and gaps of biodiversity data in the AP region

Aug.

Conducted a questionnaire survey to identify the availability and gaps of data, knowledge, and capacity in the AP region  
Contributed to the GBIOS (Global Biodiversity Observing System) concept paper

Sep.

Held the 18<sup>th</sup> APBON webinar

- "Advances in species distribution modeling and applications for predicting ecosystem functions and services" by Dr. Jamie Kass (Tohoku University)
- Discussion on the APBON activities beyond September

Oct.

Attended the GEO BON Global Conference 2023 and introduced the APBON activities  
Introduced APBON activities at the CBD Secretariat webinar Knowledge Management for Biodiversity

Nov.

Attended GEO Week 2023 and introduced the APBON activities

Held the 19<sup>th</sup> APBON webinar

- "The role of AHTEG on KMGBF" by Prof. Ryo Kohsaka (University of Tokyo)
- "The role of APBON in IPBES and KMGBF implementation" by Mr. Ichiro Hama (Ministry of the Environment, Japan)

Dec.

Contributed to the special symposium on biodiversity observations (organized by the National Science Museum of Japan and JBN)

Contributed to the IPBES coordinating process from Thailand

Jan.

Held the 20<sup>th</sup> APBON webinar

- AP MBON

Feb.

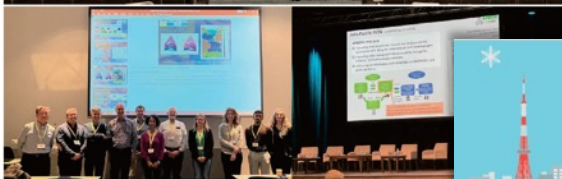
Held the 15<sup>th</sup> APBON workshop

Mar.



## GEO BON Global Conference: Monitoring Biodiversity for Action

October 10-13, 2023, in Montreal, Canada



## APBON workshop FY2023 Summary report

February 21-22, 2024, in Tokyo, Japan and online



### Executive summary

The 15th APBON Workshop was held on February 21-22, 2024, in Tokyo (Tokyo International Exchange Center) and online. Gathering 34 members from 10 countries/regions, the workshop facilitated discussions and exchanges on biodiversity observation practices within the Asia-Pacific region.

Over the course of two days, the workshop began with national reports detailing ongoing monitoring activities and regional challenges. Subsequent discussions focused on how APBON can address data gaps, compile existing data, and apply the concept of Essential Biodiversity Variables (EBVs), as well as coordinate biodiversity observations to support the National Biodiversity Strategies and Action Plans (NBSAPs), the CBD Kunming-Montreal Global Biodiversity Framework, and the Global Biodiversity Observation Network (GBIOS) of GEO BON. Key topics included promoting harmonized efforts towards a regional biodiversity monitoring scheme and exploring the use of biodiversity models for mapping ecosystem functions and services in Asia and the Pacific. We also discussed concrete plans for publishing the workshop results.



#APBON2024 #BiodiversityObservation #AsiaPacificConservation  
#EBVs #NBSAPs #CBDKunmingMontreal #GlobalBiodiversity

