

15th APBON workshop

Feb 21 & 22, 2024, in Tokyo 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

Program

Day 1 : February 21, 2024

9:30	<p>Opening remarks and introduction to the program Co-chairs: Hiroyuki Muraoka, Yongyut Trisurat Secretariat: Keisuke Takahashi (Director of the Biodiversity Center of Japan) All participants: One-phrase self-introduction</p>
10:00	<p>[Session 1] Scene setting Introduction: Massa Nakaoka and Alice Hughes</p>
10:20	<p>[Session 2] Activity reports Moderator: Hiroyuki Muraoka</p> <ul style="list-style-type: none"> • Status and challenges on NBSAPs in countries in the AP region • Status, gaps, and challenges on data availability and biodiversity observations in the countries <ol style="list-style-type: none"> 1. Sunita Chaudhary (ICIMOD, Nepal) 2. Anchana Prathep (Prince of Songkhla University, Thailand) 3. Nantida Sutummawong (Kasetsart University, Thailand) 4. Yao Tze Leong (Forest Research Institute Malaysia, Malaysia) 5. Gray A Williams, Braian Leung Kai Hin (The University of Hong Kong) 6. Touch Bunthang (Inland Fisheries Research and Development Institute, Cambodia) 7. Severino Salmo III (University of the Philippines Diliman, Philippines) 8. Christian Elloran (ASEAN Centre for Biodiversity, Philippines) 9. Venus Leopardas (Mindanao State University Naawan Poblacion, Philippines) 10. Alice Hughes (The University of Hong Kong, China) 11. Takehisa Yamakita (JAMSTEC, Japan) 12. Ryo Mabuchi (Biodiversity Center of Japan, Japan)
14:00	<p>[Session 3] Analysis of data availability and accessibility for national and regional assessment of biodiversity status and trends Moderator: Massa Nakaoka <i>Objectives: Achieve clear understanding of available data, knowledge, and capacity within the APBON network and how they are being used.</i> <i>Potential questions: What data exist? What data are accessible? Can we develop mechanisms to access private data? Where are the true data gaps? How can we fill them?</i></p>
15:30	<p>[Session 4] Breakout group session: Mapping data availability and needs Group discussion</p>
17:30	<p>Closing Day 1</p>



#WelcomeSpeech
 #APBONCo-chair
 #APBONSecretariat
 #BiodiversityCenter
 #MoE

Program

Day 2 : February 22, 2024

9:30	<p>[Session 5] Brainstorming session: Asia-Pacific perspectives on EBV, indicators, etc. Moderator: Yayoi Takeuchi Introduction: Lea Végh and Yayoi Takeuchi (NIES) [15 min]</p> <p><i>Objectives: Clarify gaps, challenges, and strategy to implement national and regional observations to meet requirements of assessments of biodiversity and nature's contribution to people (ecosystem services) in IPBES and KM-GBF.</i></p> <p><i>Potential questions:</i></p> <ul style="list-style-type: none">• <i>How do we apply the EBV concept to our region? Do we have sufficient methodologies to fully cover the diversity? How do we assess and report the benefits of indigenous knowledge and culture on biodiversity?</i>• <i>How can we link the output of the monitoring programs to the global biodiversity observation systems?</i>
13:00	<p>[Session 6] Plans for publications (special issue on Ecological Research) Moderator: Hiroyuki Muraoka</p> <ul style="list-style-type: none">• Theme of special issue• Potential topics (titles of papers from the APBON and AP-MBON members)• Expected schedule
16:00	Closing remarks



#APBONColleagues #WorkshopVenue
#LunchTime #TokyoMeet2024



Alice Hughes introduced the workshop.

Despite the launch of the Kunming-Montreal Global Biodiversity Framework (KM-GBF) at COP15, data inadequacies persist, complicating the monitoring of progress and thus the critical assessment of biodiversity data for Southeast Asian National Biodiversity Strategies and Action Plans (NBSAPs). The Biodiversity Indicators Partnership (BIP), previously instrumental in data aggregation, now offers outdated and insufficient indicators for effective monitoring.

Southeast Asia, recognized as a biodiversity hotspot, suffers from a lack of comprehensive and accessible data. Japan and China are the only countries that have published updated NBSAPs since 2020, and while most countries have submitted their 6th National Reports, data access remains a hurdle, with substantial data locked in private databases or requiring permissions for each use. The data that is available is often not representative, lacking in time series, non-forest ecosystems, and habitat quality, and is fragmented across the region.

Alice emphasized the need for a collaborative effort to overcome regional data fragmentation and accessibility challenges. She proposed leveraging best practice guidelines and potentially using the Asian Conservation Database (ACD) as an aggregator to standardize and release metrics without compromising source data privacy. The presentation highlighted the pressing need for better approaches to data sharing and the targeting of data gaps to enhance biodiversity monitoring in the Asia-Pacific region.

[#KMGBF](#) [#BiodiversityData](#) [#AsiaBiodiversity](#)
[#NBSAPs](#) [#DataUtilization](#)
[#ConservationChallenges](#) [#BIP](#) [#ACD](#)
[#BiodiversityAction](#)



Understanding data needs

- Previously the Biodiversity Indicators Partnership (BIP) aggregated data to assess progress towards targets
- However, the indicators within the monitoring framework are inadequate for actually monitoring progress

Understanding the processes

- Most Aichi targets were not completed successfully for Asia
- In 2022 the KM-GBF was launched, yet the data within the monitoring framework is inadequate for actually monitoring progress
- So where are we now, what data exists, and how can we most effectively move forwards?



The 12 presenters from 8 countries/regions reported on national-scale activities and information regarding NBSAPs, the status of biodiversity, conservation and monitoring efforts, and related policies.

1. Sunita Chaudhary (ICIMOD, Nepal)

Introduced an overview of the NBSAP in Nepal, including the promotion system and progress status. Pointed out challenges such as the lack of resources for funding and personnel, and thus the system limitations for long-term research and database.

[#NBSAPNepal](#) [#BiodiversityResearch](#) [#ResourceChallenges](#)



2. Anchana Prathep (Prince of Songkhla University, Thailand)

Reported on the status of biodiversity conservation in Thailand, primarily focusing on the conservation of seaweeds. In particular, she presented the role of the Department of Marine and Coastal Resources (DMCR) in conservation efforts for mangrove and national park areas and how they utilize big data.

[#MarineConservationTH](#) [#SeaweedConservation](#) [#BigData](#)

3. Nantida Sutummawong (Kasetsart University, Thailand)

Reported on the overview of the NBSAP in Thailand. Mentioned that they are currently in the fifth phase of NBSAP creation under a long-term national strategy (2018-2037) and reported on the progress of three goals (G1: Conservation of biodiversity, G2: Enhancement of biodiversity value, G3: Establishment of a biodiversity conservation system). Also mentioned that more resources are needed for achieving OECM and building databases.

[#NBSAPThailand](#) [#Biodiversity2037](#) [#ConservationGoals](#)



4. Yao Tze Leong (Forest Research Institute Malaysia, Malaysia)

Introduced tree research plots and research programs conducted in the Pasoh Forest Reserve in Negeri Sembilan, Malaysia. Reported on EBVs including genetic composition, species population, traits, and community composition from research conducted over six years. Mentioned observations of damage by wild boars among other animals, stating that transversal knowledge and data are necessary for elucidating conservation status.

[#PasohResearch](#) [#EBVTracking](#) [#WildBoarImpact](#)



5. Gray A Williams, Braian Leung Kai Hin (The University of Hong Kong)

Presented on the history and current situation of marine biodiversity surveys in Hong Kong, which were begun by Prof. Brian Morton's pioneering research, and are now published in various sources. Efforts are ongoing to collate them into one quality-assured and standardized database. Activities extend to establishing an information hub on marine biodiversity and conducting iNaturalist-based citizen science.

[#MortonLegacy](#) [#HKMarineData](#) [#CitizenScienceHK](#)



6. Touch Bunthang

(Inland Fisheries Research and Development Institute, Cambodia)

Reported on the decline in fish biodiversity in the Lower Mekong Basin, the current situation, and the usefulness of data. Noted that although about 1200 species of fish have been recorded, the decrease continues, stressing the urgent issue of original location capture. Reported on the current data collection situation by the Core River Monitoring Network (CRMN) in Cambodia.

[#MekongFishDecline](#) [#CRMNData](#) [#BiodiversityUrgency](#)

7. Severino Salmo III

(University of the Philippines Diliman, Philippines)

Reported on the current status of mangrove conservation in the Philippines. Introduced survey analysis methods using indicators such as vegetation/structure complexity, blue carbon and sediment maturity, animal communities/shifts (indicator species), and eDNA analysis, and reported on data-collection status on data platforms.

[#MangroveConservationPH](#) [#BlueCarbonResearch](#)

[#eDNAAnalysis](#)



8. Christian Elloran

(ASEAN Centre for Biodiversity, Philippines)

Presented on the Biodiversity Knowledge Management Department Databases. Reported on the progress of data accumulation on the ASEAN Biodiversity Dashboard and updates to the species search page reflecting the data, as well as the ACB's efforts in data utilization and publication.

[#ASEANBiodiversity](#) [#KnowledgeManagement](#)

[#ACBDataDashboard](#)



9. Venus Leopardas

(Mindanao State University at Naawan, Philippines)

Presented the current situation of seagrass ecosystem surveys in the Philippines and pointed out problems due to the lack of continuous surveys. Introduced a comprehensive and integrated research program for improving resource governance in the Philippines based on the social, economic, and ecosystem value of gleaning fisheries (GleanPhil program to be submitted to DOST-PCAARRD), as well as its target activities and expected outputs.

[#SeagrassSurveyPH](#) [#GleanPhil](#) [#EcosystemValue](#)



10. Alice Hughes

(The University of Hong Kong, China)

Reported on the importance of analysis based on appropriate indicators in line with global goals in biodiversity observation data utilization. Discussed the limits of data, including verification of data reliability, biases in data collection, and biases in the data itself, stating that being aware of these limits could enable effective monitoring.

[#BiodiversityDataUse](#) [#DataLimitsAwareness](#) [#EffectiveMonitoring](#)

11. Takehisa Yamakita (JAMSTEC, Japan)

Overviewed Japan's National Biodiversity Strategy (NBSAP) and explained the perspective of marine biodiversity from the viewpoint of Essential Ocean Variables (EOV). Described the observation status of marine areas among the "Monitoring 1000" designated by the Ministry of the Environment. Introduced biodiversity observation indicators in marine areas, suggesting ways to contribute more concretely to the GBF etc., by expanding research into the Asia-Pacific region.

[#JapanNBSAP](#) [#EOVInsights](#) [#Monitoring1000](#)



12. Ryo Mabuchi

(Biodiversity Center of Japan, Japan)

Reported on the progress of revising NBSAP in Japan and discussions in Japan regarding the 6th NBSAP formulated in March 2023 after the adoption of KMGBF. Introduced the role of the Biodiversity Center of Japan and the surveys it conducts, stating that the roles expected in the future of APBON include knowledge resources, promoting BON in each country, bridging science and policy, and capacity building.

[#Japan6thNBSAP](#) [#BiodiversityCenterJapan](#) [#APBONFutureRoles](#)

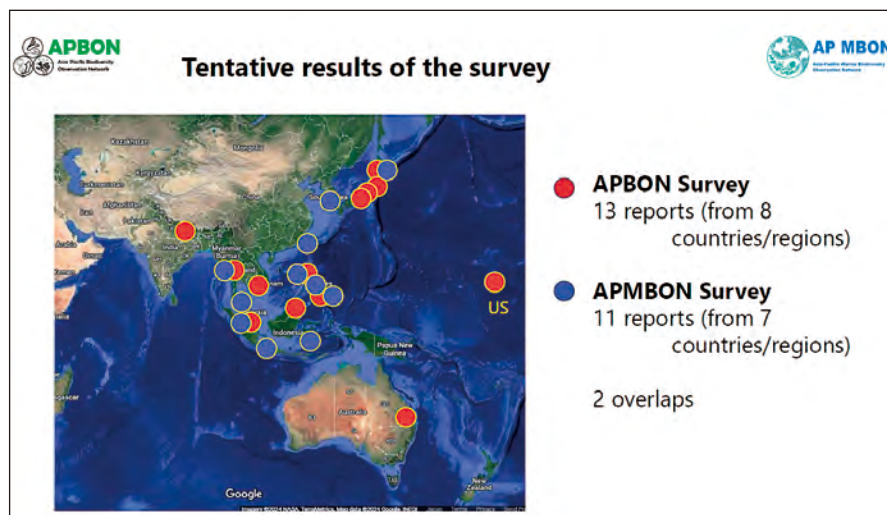
DAY 1 Afternoon



Session 3: Analysis of data availability and accessibility for national and regional assessment of biodiversity status and trends

Massa Nakaoka reported the results of the questionnaire conducted in 2023 for APBON and APMBON members

In August and September 2023, two questionnaire surveys were conducted: the APBON survey, which focused on identifying data, knowledge, and capacity gaps in biodiversity, and the APMBON survey, which targeted marine biodiversity monitoring and blue carbon research in Eastern and Southeastern Asia. The results included 13 reports from 8 countries/regions from APBON and 11 reports from 7 countries/regions from APMBON, with two areas of overlap between the surveys.

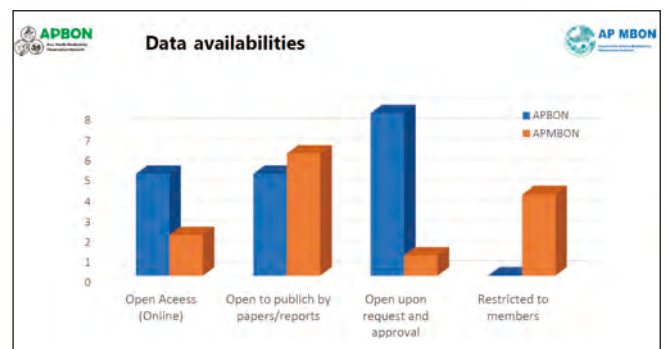


Major gaps in monitoring:

- Insufficient monitoring sites and exclusion of key ecosystems.
- Lack of data on human impacts and trophic relationships.
- Discontinuous and irregular monitoring.
- Non-standardized data.
- Lack of monitoring of critical environmental factors.
- Scarce genomic data.

Capacity building and data promotion:

- Consider replicating the LTER model in other forest areas, requiring international funding and expertise.
- Strengthen collaboration with government, intergovernmental bodies, or academic entities for long-term LTER establishment, data collection, and maintenance.
- Enhance capacity building for data establishment, collection, and monitoring, especially in carbon flux and mountain ecosystems.
- Adopt a more systematic approach to integrate data with global databases.



#SurveyAnalysis #MonitoringChallenges #MonitoringGap #CapacityDevelopment

DAY 1 Afternoon 2



Session 4: Breakout group session: Mapping data availability and needs

Massa Nakaoka introduced the session, focusing on the objectives: to achieve a clear understanding of the available data, knowledge, and capacity within the APBON network and their utilization.

Key questions:

1. What data exist? What data are accessible?
2. Can we develop mechanisms to access private data?
3. Where are the true data gaps?
4. How can we fill them?

Summary of the group discussion

The discussions highlighted several key challenges and strategies in biodiversity data monitoring and sharing:

- **Data Gaps:** Notable data gaps exist in politically sensitive regions, and there is a pressing need for long-term temporal data and practical indicators such as water quality and eDNA.
- **Evaluating Recovery and Alignment:** Need to evaluate functional recovery and to align environmental and sociological data with global conservation goals.
- **Barriers and Opportunities of Open Data:** Significant challenges include private data ownership, insufficient research funding, and the lack of standardized data-sharing protocols.

Strategies to fill data gaps:

- **Enhancing Collaboration:** The group suggested enhancing international collaboration, discussing essential biodiversity and ocean variables, and improving communication with policymakers to better integrate conservation efforts across various sectors.
- **Utilizing Citizen Science:** Emphasizing the role of citizen science was seen as a way to compensate for the lack of data and scientific resources.
- **Financial and Quality Incentives:** There is a need for financial incentives and improvements in data quality to boost data collection and sharing. The group also called for innovative approaches to data sharing in areas with limited data availability.

[#GroupDiscussion](#) [#DataAvailability](#) [#DataGaps](#) [#OpenData](#)



DAY 2 Morning



Session 6: Brainstorming session: Asia-Pacific perspectives on EBVs, indicators, etc.

Yayoi Takeuchi and Lea Végh introduced a session with the goals of 1) exploring the potential use of Essential Biodiversity Variables (EBVs) alongside existing indicators, and 2) finding ways to link these indicators to biodiversity policies and challenges in the Asia-Pacific region.



Key questions:

1. Are there any aspects of biodiversity that cannot be observed or adequately captured using the current EBVs or indicators?
2. Are there any additional EBVs that should be considered for inclusion to address gaps or emerging issues?

Summary of the group discussion

1. There is still missing information on biodiversity such as undescribed species, genetic diversity of individuals and populations, detailed monitoring of small organisms, functional recovery of ecosystems post-restoration (e.g., mangroves), and specific sociological dimensions related to conservation goals. The current EBVs may also fall short in accurately reflecting habitat loss, fine-scale biodiversity changes in human-populated areas, and specific needs for observing different taxonomic groups, including microbes.
2. We need to include indicators for long-term temporal changes to track recovery and the effectiveness of conservation efforts. These include development of practical, site-specific indicators for areas near human populations, integrating EOV and sociological data to better capture the human dimension of biodiversity conservation. They also include enhanced methodologies for the accurate evaluation of the effectiveness of conservation, especially in relation to Blue Carbon and other crucial ecosystems, incorporation of genetic information (e.g., eDNA) to improve the detection and monitoring of biodiversity, expansion of citizen science projects, and initiation of more comprehensive international collaborations to refine EBV and EOV frameworks.



[#GroupDiscussion](#) [#EBVs](#) [#EOVIntegration](#) [#HumanDimension](#) [#TemporalChanges](#)
[#SociologicalIndicators](#) [#GeneticMonitoring](#) [#CitizenScience](#) [#InternationalCollaborations](#)

DAY 2 Afternoon



Session 7: Plans for publications (special issue on Ecological Research)

Hiroyuki Muraoka introduced a session to discuss the plans for publishing the workshop results.

Summary of the group discussion

The outreach plan from the group discussion focuses on a multi-faceted approach to enhance key components of biodiversity and includes:

1. Publishing a synthesis paper to consolidate viewpoints from APBON members.
2. Issuing policy papers or briefs to advocate for data openness and sharing across governments, academia, and stakeholders.
3. Conducting surveys on biodiversity data and monitoring by APBON and APMBON.
4. Analyzing current statuses and gaps in EBVs/EOVs to prioritize future research across different countries/regions and ecosystem types.
5. Assessing data gaps and promoting citizen science and transdisciplinary research.
6. Integrating new technologies such as eDNA, remote sensing, and smartphone mapping into biodiversity monitoring.
7. Reviewing previous National Biodiversity Strategies and Action Plans (NBSAP) of each country.
8. Evaluating the feasibility of EBVs/indicators considering data availability, technological requirements, and methodological support.



The plan underscores the importance of:

- Estimating unknown biodiversity.
- Utilizing EBVs for NBSAP in the Asia-Pacific region, focusing on data gaps, policy briefs, and ecosystem connectivity.
- Standardizing EBVs for the region, including methodology and networking.
- Addressing gaps and challenges in data sharing, considering linguistic diversity, and proposing solutions.
- Establishing an expert database for APBON and enhancing information infrastructure for improved data and knowledge dissemination.
- Summarizing knowledge for stakeholders, with a focus on biodiversity trends under climate change, ecosystem restoration, biodiversity in urbanization, and One Health.

[#BiodiversityData](#) [#APBONOutreach](#) [#PolicyAdvocacy](#) [#EBVs](#) [#CitizenScience](#)
[#NBSAPReview](#) [#DataStandardization](#) [#KnowledgeDissemination](#)

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