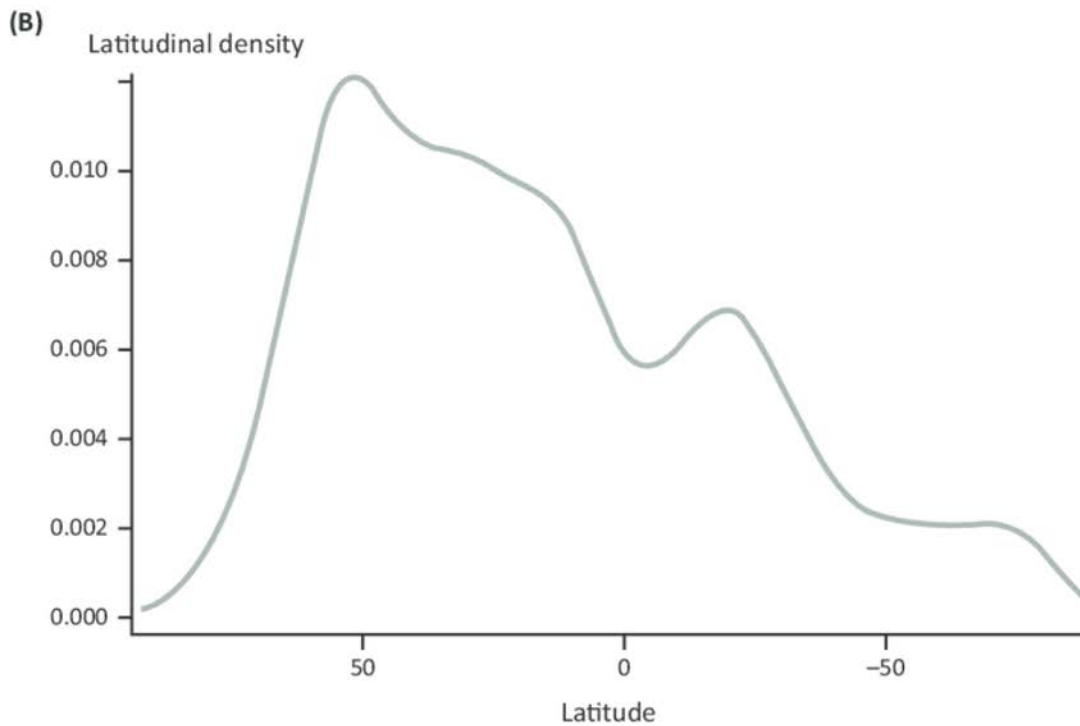
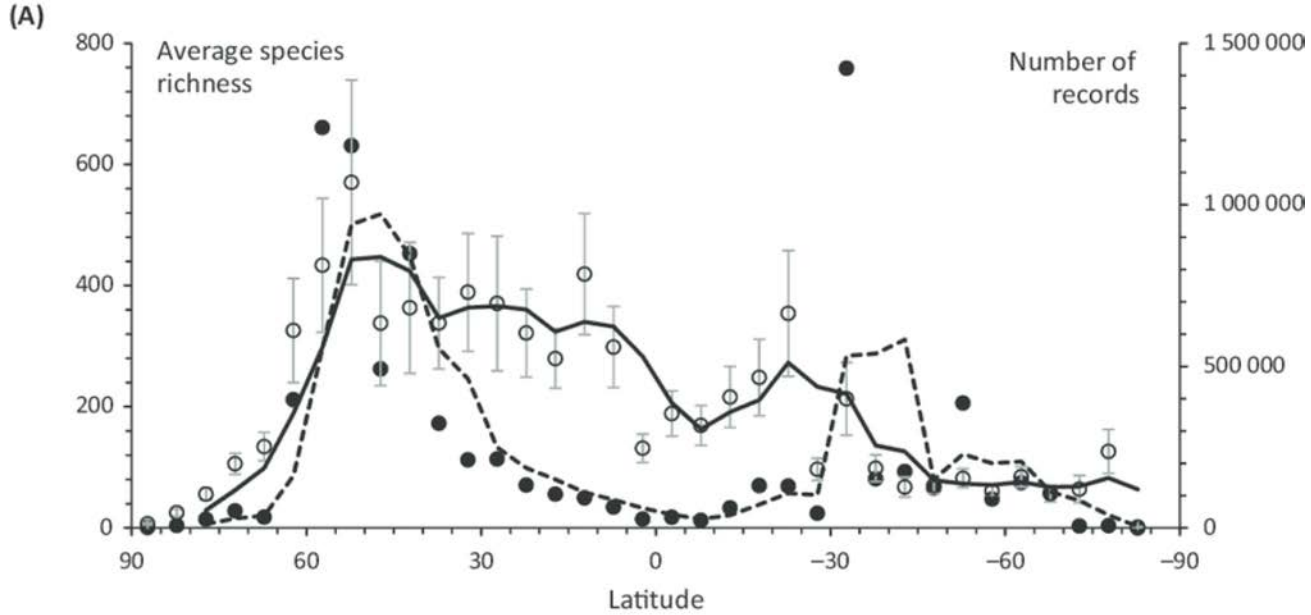
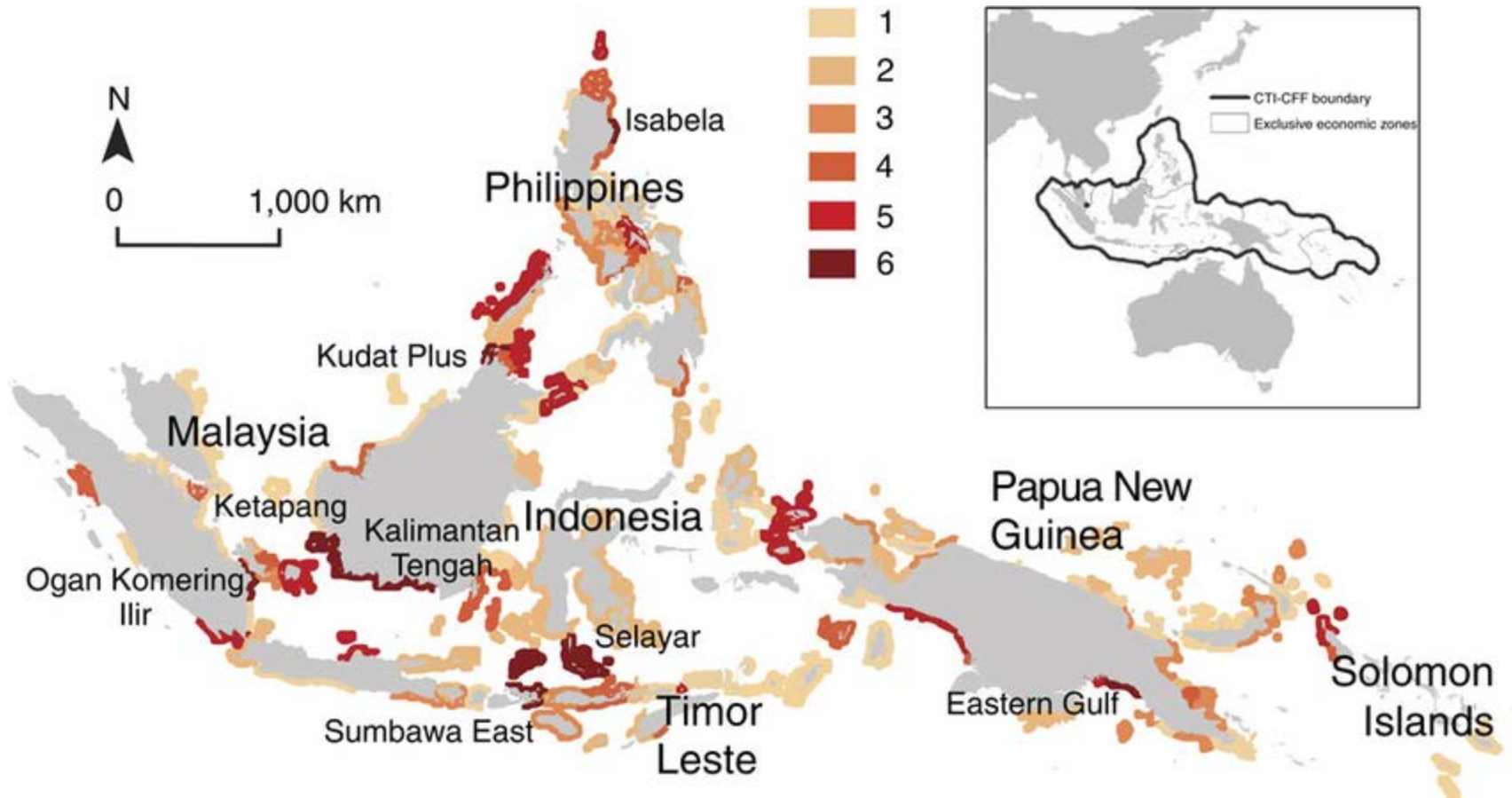


Feasibility of large scale analysis and potential networking as AP-MBON

T Yamakita





https://www.researchgate.net/publication/281749735_Integrating_regional_conservation_priorities_for_multiple_objectives_in_national_policy/figures?lo=1

- Networking networks and revive past activities to observe spatial-temporal patterns
- Facilitate broad scale researches and production of infrastructure
- Facilitate gathering the information of recent topics
- Outreaching and increase communication of people

0. Organizing ARMBON steering committee

27th Nov 2019
27th Nov 2020
27th Nov 2021

1. Networking

2. Platform building ← Database updating
- OBIS - UNEP - WCMC

3. Research

→ Long-term change in Asian Marine Biodiversity

using legacy Data

= Development of NEW TECHNIQUES for effective marine biodiversity observation

- Drones - Remote sensing
- eDNA
- ARMS

planning
2019-2021

4. Synthesis WS

- Social-Ecological System Study toward sustainable use of coastal resources

where studies
Marine
Belmont
Forum

Project 3: Coastal biodiversity assessment

Revive past activities to observe temporal changes

Over 10 years since CoML...

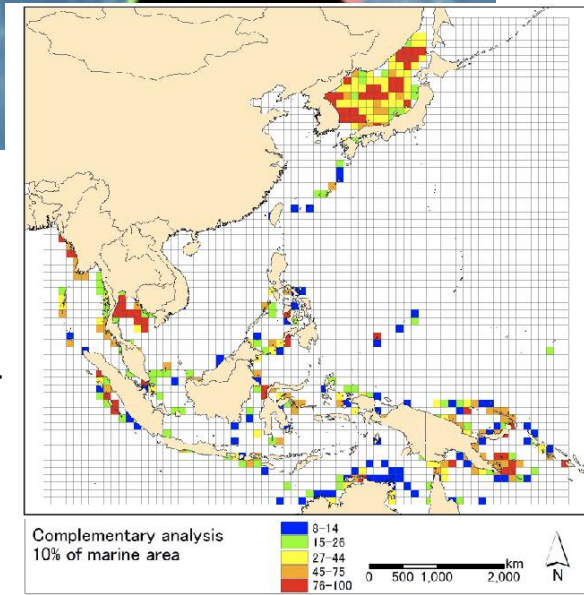
- temporal change?
- improve of the technique (such as DNA & Camera)

Use of the information such as

- ecosystem services
- EBSA
- indicator of the threat



Proposed EBSA using existing & literature extracted data



Project 3: Coastal biodiversity assessment

researches and production of

Present data... infrastructure

- Some are still not good enough
- Some need temporal data

Ways to improve

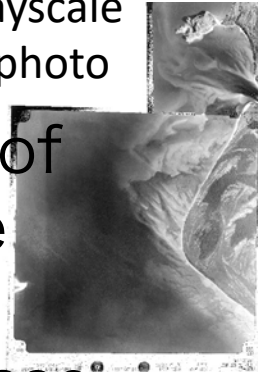
- image recognition
- eDNA
- survey using drone
- literature
- ... etc

- Update the maps of seagrasses, algae and coral reefs & build GIS database

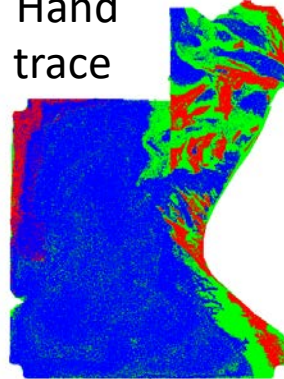


Coral reef habitat data in AP region using ALOS/AVNIR2 (National Institute for Environment Studies (NIES) and Asia Air Survey Co.,Ltd)

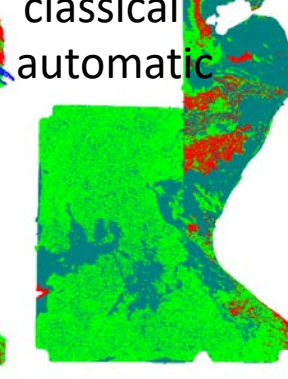
Grayscale
Airphoto



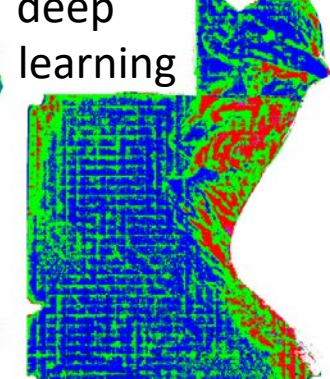
Hand
trace



classical
automatic



deep
learning



More accurate classification of seagrass Yamakita et al. under review

Statement to establish AP-MBON

- SUMMARY
- Marine activities in AP-BON have begun. During two 2018 AP-BON workshops, several marine scientists, including the Co-Chair of the global Marine Biodiversity Observation Network (MBON), met and discussed how to develop an AP-marine BON. AP BON is separate from GEO BON (Box 1) in funding, administration and governance, and has its own independent identity and profile. The founding members (Table 1) agreed that the marine group would be called “AP MBON”. In this report, we note particular activities that are underway and make the case for a more substantive AP MBON in the future. A first priority to take this forward will be an AP MBON secretariat to lead and coordinate activities.

- INTRODUCTION
- Why does society need an AP MBON?
- There is an urgent need to know what is happening to marine biodiversity in the Asia-Pacific region due to increasing human activities causing pollution and over-fishing, the need for marine food security to support human health, plus the effects of climate change and natural disasters (e.g., tsunami), and how this effects interact.
- The AP MBON will provide the scientific expertise, data and knowledge to (1) **determine the facts** about the state of marine life and ecosystems, and (2) **predict** how this will change in the future. This knowledge will enable scientists to (3) **provide evidence based advice** to governments and society on how to restore fisheries and health of ecosystems, and sustainably use the oceans for the long-term

- A comparison of elements of biodiversity, and related environmental conditions, along a latitudinal gradient, could be compared with the findings of the “Pole to Pole” (P2P) MBON in the Americas (Table 2). These could be achieved by bring together existing data and new data available from AP MBON members. Analyses could thus be both specific to the AP region, but by comparison with P2P America’s, be placed in a more global context. Data could include:
 - species richness,
 - biogenic habitat cover (forest, seagrass, kelp, mangrove, coral),
 - species endemicity,
 - key species abundance,
 - debris, plastics,
 - contaminants (TBT, PCB, etc.)
 - nutrient pollution,
 - invasive species,
 - carbonate sensitive species,
 - freshwater discharges
 - threatened species (IUCN listed)
 - fisheries trends and status
- Results may indicate areas where ecosystem restoration is most urgent, where impacts need to be better managed, where new Marine Protected Areas would be best located, and provide new understanding about marine

Other projects could be narrower in scope and focus on particular habitats and species guilds. They may focus on **coastal, deep-sea, pelagic or benthic, and particular taxa such as fish, mollusc, crustaceans, echinoderms, or tunicates.**

Workshops could focus on (1) **developing new field and laboratory methods, including image analysis techniques, and (2) data synthesis and analysis.** Such workshops should publish their results, such as new methods, best practices, and discoveries from data analyses.

To progress these activities, AP MBON should find one or more researchers, such as post-doc' fellows, with the time and skills to synthesise data from GBIF, OBIS, and members to lead a co-authored publication. This process would have multiple benefits in building personal and institutional relationships, identifying data gaps, and demonstrate proof-of-concept that AP MBON can deliver useful results. It would also give AP MBON visibility within the scientific community, and results may have important implications for regional and national policies regarding the oceans. The outcomes of the above will stimulate and advise on future priorities for AP MBON.

- The top priority for AP MBON is to find an institute to host a Secretariat to act as its contact point and coordinate activities.
- Secretariat activities would include contacting and encouraging scientists to collaborate, fostering development of standardised methods and co-authored publications, organising workshops, and helping AP MBON members secure funding for these activities. In other words, the Secretariat would act as broker for linking experts to each other and to wider international activities. It could formally endorse activities that contribute to the AP BON mission, and write letters of support to funding applications by members. It would also report on progress by its members, such as new publications, media releases, databases, and meetings.
- It is recommended that
- AP BON form an AP MBON Steering Committee, including Chair and Secretary,
- AP MBON invite its members to offer to host a secretariat, and/or take on roles coordinating particular MBON activities (e.g., monitoring seagrass, coral reefs, plankton).
- AP BON contacts its members and others to nominate people to join AP MBON. This could use various social media to communicate activities – LinkedIn, websites, Facebook, Twitter, etc.
- AP MBON finds one or more researchers to lead data synthesis

0. Organizing ARMBON steering committee

2.7.2019 - 2.7.2020
2.7.2020 - 2.7.2021
2.7.2021 - 2.7.2022

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