

Summary Report

APBON 8th Web Seminar

1. Date: 8th July, 2021

Time: 15:00-17:00 in Japanese Standard Time

(13:00-15:00 in Cambodia, Thailand, Indonesia, Vietnam), (11:45-13:45 in Nepal)

(14:00-16:00 in Malaysia, Philippines, China), (7/7 20:00-22:00 in Hawaii)

2. Location, Participants

- Webex Meeting Room
- 18 participants (14 participants and 4 from secretariat) from 7 Nationalities
- MC: Dr. Takeuchi (National Institute for Environmental Studies)

3. Program:

Opening and Announcement:

Secretariat of APBON (Ms. Neagari: Biodiversity Center of Japan)

- Greetings from Ms. Neagari from APBON Secretariat
- Welcomed all of the participants to join this 8th APBON web seminar
- The agenda and rules of the meeting were proposed
- Introduced today's MC

Presentation1:

Dr. Po Teen LIM (University of Malaya)

“Dynamics of benthic harmful algae assemblage at coral reef ecosystems”

Summary of presentation

In this session, Dr. Po Teen LIM shared his research in HABs especially benthic harmful algal. He said he has been working on this topic related to harmful algal for the past 20 years and benthic HABs was a topic of concern because of ciguatera fish poisoning. And he also explained why HAB is so important and what we can do to minimize the social economy impacts due to HAB, especially, related to benthic HAB, and why we want to look at that in respect to the ecosystem changes especially in a coral reef ecosystem. So he used some from studies conducted in Perhentian island fringing coral reef, a marine park on the east coast of Peninsular Malaysia.

Q&A Session

Q: You showed that toxic algae is expanding to the higher latitude and you mentioned about the effect of climate change and I was wondering if that these toxic algae also have characteristic to adapt other environment very quickly? Species has capacity so they can adapt to the different elements and environment so in that case you may see difference between the population in the original area and the expanded area. Do you have any idea about this?

A: Gambierdiscus species are a group of dinoflagellates known to responsible for ciguatera fish poisoning. It is confined the tropical and subtropical water,. Based on a study by Japanese researchers, now they're seeing occurrence of Gambierdiscus in Honshu island. So that's sort of study have raised questions on northward expansion of Gambierdiscus species. Good historical data available in Japan, Gambierdiscus are now being reported in several parts of Shikoku and Honshu island site, and from that study they conclude that ciguatera fish poisoning was no longer confined to Okinawa but expanded northward. So I think that is how the CFP and benthic HAB are that related to global warming t

Q: Can you predict the next toxic algae bloom?

A: Many researchers are trying to very hard in early warning and prediction because that is very important to reduce the economy impact to reduce the threat to public health. And for subtropical order on temperate region and the window of bloom normally is from early spring to summer. For example if they see increase in cell numbers in the water column in the case of planktonic bloom during monitoring of algal blooms, the monitoring program will be intensified during the early spring to summer. At the same time, all of the shellfish will be tested and those toxic shellfish will be banned from the market. At this stage, we can have early warning ahead for two weeks. but I don't think we can do anything earlier than that. So I guess that is still depend very much on monitoring efforts.

Q: I am wondering, we can monitoring the HAB, but we found observing HAB harmful algal blooms and reduce it is not easy, is there any case studies working on that? For example I've heard that aqua culture sometimes they move the locations, I think it's a only one possibility, but I don't hear another options just spend the their product or something like that. So is there any case study in your regions in your knowledges?

A: The mitigation method depends on country and region. For example for finfish cultures (marine cultures) in east Asia eg. Japan Korea and China, , when they encounter one *Margalefedinium polykrikoides* (previously known as *Cochlodinium polykrikoides*) blooms approaching a mariculture area, clay spraying will be applied stop the bloom from approaching or close to the farm area. I think that is one mitigation approach that help to settle down the bloom and help to stop the bloom from approaching to the farm.

So of course that clay spraying method has its own disadvantage because when you spray clays to the coastal ecosystem, you are introducing pollutant with potential impacts and consequences to the benthic organism. , especially areas near to coral reef also and to avoid environmental problem to the benthic community.

In terms of new method, they are various types of method available with differences in cost and effective of treatment. In China there's developing mitigation method with ozone, which is very similar to ship ballast water treatment system. All the ship ballast water will be treated before it is release. This is essential for shipping industries to comply with Ballast water convention and regulations of International maritime Organization (IMO). I know some chemical treatments that that might work to stop the bloom. The best approach that we have now is monitor and detect the blooms earlier to reduce or to minimize the impact. Increase the aeration in the area by having a physical barrier to stop the farm from exposing the bloom, hopefully the current will bring them away in a very short time

Q: Is there any possibilities to consider the community plankton because I heard that in the time of the highly polluted honey you don't get its era intermarry I have a room but it was not toxic sometimes but recently toxic algal bloom happening more frequently than past. Also it'll be a little of reduction of the nitrification. I'm wondering is it possible to control all of the community level to reduce toxic algal bloom?

A: I guess there are several studies that related to that , for example the use of seaweed polycultures, because by Prof.Imai from Hiroshima university, they found that the macro algae can release or hold some good bacteria that help to compete in a few harmful algae, so that is one. They also study of using algicidal bacteria or virus collected from the sediment produce them and release them back to help in termination of bloom.

However, people are very concerned with the use of bacteria and virus, on whether this

will cause some environmental issues. I guess that was the reason why those methods were not widely applied to control the harmful algae bloom occurrences.

When we have more nutrients in our coastal waters, HAB species can survive in higher nutrient environment will have better competitions compared to the species. A good example was the Seto inland sea. Monitoring of HABs and shellfish toxicity will be the best solution I mean you can't remove HABs species completely from the environment.

Presentaton2:

Dr. Chaodong Zhu (Chinese Academy of Sciences)

“Insect species delimitation and interaction networks”

Summary of presentation

He expressed his honored to be invited by APBON seminar to give this presentation on what's going on in his lab. Comparing Dr. Lim's presentation, which is related to the story of deep sea, he delivered a story related to mountains that where they are carrying out their projects which is insect systematics and species interactions.

He emphasized that the insect systematics is actually basic approach to study species interaction.

In this session, he delivered this presentation which is divided into two parts. First part is mainly part of dealing with insect taxonomy, and the second part is basing on the approaches and techniques they established in the lab, and in this parts, he talked more about species interactions in the mountain.

For insect systematics, he focused on functional insect groups which turn are actually brought ecology, and his talk here were more focused on Pollinators, Parasitoids, and Herbivores.

In second prats, he gave the talk more about a story in the mountain. He showed two scientific questions they've been keep working on in previous 8 years. Q1: The effects of tree diversity on plant-insect interaction network, Q2: The effects of climate change on plant, herbivores and predators. Several ongoing projects such as Nest trap system, Predator system, and Herbivore system were introduced.

Q&A Session

Q: I'm wondering if some trades of the insects will also affect this relationship

A: Currently you can see in the projects going on in BEF site. We study different functional groups at least for caterpillars, it's more positively connected with tree

diversity gradients, so that means because I did not explain very well on the experiment but however in this in both BEF sites all trades are being planted a diversity gradient, like one species for one wood and two species in another plot and then going on to 24 tree species and then we sample Herbivores, pollinators, and parasitoids in different selected plots. So currently we found for Herbivores, microbes, and parasitoids, they are all positively correlated but however for pollinators we did not find its way to correlated with. Very recently we collaborated with Dr. Alice that we found tree diversity actually has different kind of negative effects on bee diversity. I think this is kind of agreement.

General discussion and Information exchange

- Information of GEO and AOGEO events (Alice, Hiroyuki)

It's great to talk to all so I was very pleased to present it to the GEO symposium last month the theme of our session with nature based solutions and there was a really fantastic panel of people with very different experiences with several people based in South Africa as well as people based in Europe and America. And as I said the broad theme of the session grows nature based solutions service included ecological accounting and a number of other approaches to try to basically better quantify and account for ecosystem service provision including the financial dimensions and how these kinds of things could be better integrated into global industries global targets. Within my brief plenary because it was meant to be short plenaries and then a discussion I went through the program go specific group as well as highlights from the paper that was said earlier this year showing some of the board aims that we have as a group and then in the synthesis session at the end we basically we talked more about the need for data and the need for the better use of data to create sensible metrics so that it can be better integrated with systems planning and management. But there were some really useful perspectives there and those who were involved had lead positions in a number of organizations as well as being responsible for developing things like natural capital accounting.

So for those who attended and I think a number of people here were planning on attending, it was a very useful session for anyone who wants to listen to that session or any of the other sessions that were part of the AOGEO symposium, now recordings on the site that could have caused the email drowned at the end and it has recordings of not just our plenary but all of the other plenaries from that session.

<https://earthobservations.org/symposium2021.php>

Comments:

Dr. Muraoka:

I watched them down the official is very good and exciting and I also appreciate Dr. Alice that you made a nice and good presentation on behalf of APBON.

Dr. Alice:

It was a pleasure to represent the group then I also highlighted the paper showing our work plan and the message that we are using to both aggregate data disseminate data and also network across this region.

Dr. Takeuchi:

Thank you so much for your talk. The nature based solution is quite important issues so maybe we can invite someone who familiar with this topic to this APBON seminar sometime.

Dr. Alice:

If it is of interest I'd be happy to give a webinar on that because it's a while since I gave the last one and within my research group we have been using various approaches to develop nature based solutions including some of China's tools like ecological red lines and more recently swaps. So if that is of interest on happy to give one of the future webinars.

- Outcome of Management Committee meeting (June 18)

- 1) Pandemic in Parks
- 2) Function of Management Committee
- 3) Planning of APBON activities

/ Three new members were invited who are Christian Elloran from ASEAN Centre of Biodiversity, Bunthang Touch from IFRReDI, and Sunita Chaundhary from ICIMOD.

/ APBON would be nice to have a kind of joint research data analysis for joint papers to feature teacher feature be expected activities that the APBON find in there's a future strategic plan to 2030.

/ The minutes of this part will be shared later and everyone here are very welcome to have some more discussion by APBON mailing lists.

APBON Management Committee meeting

June 18th, 2021

Outcomes

(1) Pandemic in Parks

- Mangal send us more information and ideas on how APBON could respond to the conservation crisis issue.
- Onuma and Mangal exchange more information on the research funding opportunity.
- Management Committee (MC) continues to discuss on this issue and bring ideas to entire APBON.

(2) Function of Management Committee

- Christian Elloran (ACB), Bunthang Touch (Cambodia) and Sunita Chaudhary (ICIMOD) will join the committee.
- An idea was shared to **engage APBON participants of many aspects to encourage launching thematic groups for joint study like AP-MBON etc.**
- **Engage young generations to activate such collaborative groups and studies in the region.**
- **Styles of thematic working groups or subgroups would be our future issue to discuss. MC members are encouraged to exchange their ideas by emails and continue to discuss.**

→ ideas to be exchanged by emails (APBON mailing list) and in future seminars

(3) Planning of APBON activities

- We would like to discuss more on the implementation plan of APBON collaborations based on the APBON Strategy to 2030. APBON is covering broad thematic aspects and geographical area – this is really a good opportunity for regional activities.
- This is a substantial part of our network, and we will continue to discuss. **Launching thematic groups would work. MC members could be the facilitators for those groups.**



Comments:

Dr. Alice: I think this is a fantastic idea we've talked about it a lot before and close it's a real compliment to the strategic plan. What we do need to think about is what those thematic groups might look like and how we might generate ideas for those thematic groups. I don't know if this is the time for all or if people want to think about it and then email in ideas for the thematic groups but I think having smaller more thematic groups will help us achieve more and I'm really looking forward to seeing what that dialogue brings. But the main question is how are we going to decide on what thematic groups to have and it perhaps before on next seminar we could have generated a list of potential thematic groups and then we can decide on chat box, so that we could move forward on that.

Dr. Muraoka: Yes, sure. so let's try that then also of course I myself will try to find something some try to post them ideas to you all and because APBON is kind of very flexible and inclusive network so any kind of ideas or thoughts from everyone are welcome.

-Some more info about future seminar was shared as below.

Future seminar/meeting



4th AOGEO Workshop July 13-15

- 13 July: Opening and IPS session (Himalayas, Mekong River Basin, Pacific Islands)
- 14 July: Only Coordination Board members
- 15 July: Idea exchange for AOGEO future activities

13th ILTER East Asia and Pacific network conference September 8-9

- Announcement (call for abstracts) will be open on July 15 by Yongyut

9th APBON web seminar September 2, 16, or 30 (tbd)

- Planning members: #####, #####
- 10th seminar in November; 11th seminar in February-March (?)
- 13th APBON Workshop (agenda and timing to be discussed by APBON members)

Speakers to be assigned 3-4 weeks prior to the seminar date.
Secretariat & OMC will assist logistic arrangement.
Announcement (by OMC) 2 weeks prior to seminar date.

13th AOGEO Symposium November (2nd or 3rd week; tbd)

- This intergovernmental meeting will focus on engagement of communities in the region and designing AOGEO Implementation plan for 2022-2025 GEO Work Programme.

GEO Week 2021 November 22-26

Information platform

APBON Secretariat and Hiroyuki are working to update the APBON website.

Photo session:

