

# SEA SHARK AND RAY RESEARCH AND CAPACITY BUILDING WORKSHOP 2023

## Post Workshop Report



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# SEA Shark and Ray Research and Capacity Building Workshop 2023: Post Workshop Report

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## Context and overview

Asia faces complex conservation challenges (e.g., Von Rintelen *et al.* 2017; Clark-Shen *et al.* 2023) that are being met by a diverse group of stakeholders. In particular, the Southeast Asian (SEA) region is a global priority for shark and ray conservation with intensive fisheries, intensive population pressures, as well as high biodiversity, new species being described, and even rediscovery of species believe to be extinct (Clark-Shen, Chin *et al.* 2023; Clark-Shen, Venkatesh *et al.* 2019; Last, White *et al.* 2016). At the same time, there appears to be growing conservation awareness of the impacts of unsustainable fisheries and seafood consumption (Choy, Booth *et al.* 2024), and there has been an emerging cohort of conservation researchers and practitioners in the Asian region (Chin, pers obs), evident by the growth and development of local meetings such as the Indonesian Shark and Ray Symposium (<http://srs-indonesia.org/>), forums in Singapore, and the Shark and Ray forum in Sabah in 2018.

Those at the forefront of conservation research and practice in the region are faced with varying “wicked” problems on a daily basis (Mason *et al.* 2018). An under-appreciated aspect of this is the impact that challenges, such as working without a supportive network, have on conservation workers and we are only beginning to appreciate the impacts of “conservation fatigue”, with burnout increasingly being cited as an issue by conservationists themselves (Boon 2023, Pienkowski *et al.* 2023; Ramos *et al.* 2017). One approach to reduce these impacts on people doing conservation on the ground is to enable them to network and develop solutions in collaboration with others facing similar challenges.

The shark and ray conservation community in Asia is growing, with a relatively young cohort of practitioners, often in relative isolation. Opportunistic discussions held by the authors with conservation researchers and practitioners across the region have highlighted the desire for the further development of collaborative community approaches and networking in the region. The main goal of this project is to enable shark and ray conservationists in the region to develop and grow their capability to enact successful conservation programs.

Meanwhile, these emerging shark and ray researchers and conservation practitioners face numerous challenges relating to a lack of capacity of senior researchers, lack of infrastructure, isolation between countries, and a perceived lack of funding support for capacity building. This workshop was intended to address these issues and indeed, the need for this workshop was initially raised at meetings in Singapore and in Sabah in 2018.

The workshop goal was: *Setting aside the time to lean in, learn, share, reflect, and connect in order to increase our collective knowledge, expertise, and capability for effective shark and ray conservation across Asia.*

Specific goals for the workshop were to:

1. Enhance technical capacity in shark and ray research and conservation across Sth and SE Asia
2. Build international connections and collaborations
3. Initiate learning in conservation leadership
4. Build momentum for effective programs in the region

## Planning and logistics

The workshop venue chosen was James Cook University in Singapore (JCUS). This venue was chosen for numerous reasons including:

- Singapore being a global travel hub that was easily accessible to participants across Asia
- JCUS having the conference facilities and laboratories needed for the workshop
- Numerous accommodation options within walking distance of the campus
- Safety and security (Singapore is a very safe destination)
- Visa and entry arrangements that facilitated travel by participants from ASEAN countries
- JCUS offering the venues and other support such as media support and student volunteers as an in-kind contribution.

Lastly, Dr Neil Hutchinson's position at JCUS enabled him to make all the local arrangement necessary. To facilitate efficient communication with workshop materials, a WhatsApp group was established that all participants joined, and a webpage for participants was created on the Fish and Fisheries Lab website with a secure login. The workshop website contained all the daily materials and resources, workshop presentations, scientific papers, and other information to support the participants. A Participant Welcome Packet (see attached) was also developed that contained essential material for each participant including instructions, emergency contact details, and cultural and travel advice and protocols. Finally, workshop participants were sent an online survey to identify priority areas they wanted further training in, and to identify any health, safety, and well-being issues the organisers needed to be aware of.

Financial arrangements were also made on a case-by-case basis with each participant to enable reimbursement of travel costs. This was essential as it was made clear that many participants would not have been able to travel to the workshop if their travel could not be reimbursed. To facilitate the immense amount of administration work as well as the development of welcome

packets, the webpage, and pastoral care for participants, Ms Mina Hatayama, an exceptional student from JCU who had completed her Honours degree, was employed on a casual contract to assist with workshop logistics and to act as the concierge for participants. Importantly, while Mina displayed exceptional organisational skills and abilities, she also has excellent interpersonal skills and a high degree of professionalism. Mina's Asian heritage and cultural understanding also helped make participants feel welcome and supported.

## Participants

The workshop was initially planned to take place in mid-2020 with 24 participants, and expressions of interest were circulated via the IUCN SSG, the Oceania Chondrichthyan Society, and regional networks to solicit applications. Unfortunately, the COVID-19 pandemic postponed the workshop for several years. In response, the initial successful participants were informed that the workshop was indefinitely postponed, and the agreement with the Shark Conservation Fund was extended until 30 October 2024 to ensure that there was sufficient time to hold the workshop. The global pandemic had a significant effect on Asia and by the time travel began to be possible and new dates were finalised, six of the original workshop participants were no longer able to attend. They were asked to nominate replacements which were quickly found, but demand for the workshop had dramatically increased. Many small NGOs and conservation practitioners had been severely impacted by the pandemic and were very eager to access support to restart their programs and connect with their peers. Another complication was that travel costs in the region had risen significantly post COVID-19, with airfares increasing by approximately 20% and accommodation increasing by up to 30%. This made the original budget insufficient so 5K USD top up funding was sourced from the Shark Conservation Fund, with additional funding secured from the Save Our Seas Foundation and Synchronicity Earth. Additionally, all five participants from the Philippines, and both participants from Sri Lanka paid their own airfares to attend the workshop. One student assistant from Australia also paid for her own airfares and accommodation. This investment by participants underscores the demand for capacity building events like this in the region. Lastly, workshop trainers Dr Vinay Udyawer and Dr Hollie Booth agree to reduce their training costs (see budget spreadsheet) and Dr Hutchinson and Dr Chin both surrendered the remuneration they were to receive in the original budget to make funds available to support participant attendance.

The additional funding and additional in-kind support from participants enabled us to hold the workshop at full capacity (35 participants), and we are extremely grateful to the Shark Conservation Fund, Save Our Seas Foundation, and Synchronicity Earth for making the workshop possible. The participant breakdown by country (including trainers and support staff) was as follows:

- Australia (trainers and support staff and students): four
- Bangladesh: one
- Indonesia: six
- Malaysia: seven
- Myanmar: one
- Philippines: five
- Singapore: eight
- Sri Lanka: two
- Thailand: one

Once news of the workshop began to filter out into the region, we began receiving a large number of requests to join, with requests received from people in the Philippines, Indonesia, Sri Lanka and Malaysia, some even offering to pay for their own costs. Unfortunately, the workshop was capped at 35 participants due to space restrictions, as well as to keep a suitable ratio of trainers to participants to facilitate effective teaching and interaction. However, names of interested parties have been retained for future reference and again, this interest underscores the broader demand for capacity building activities such as these in the Asian region.

## Workshop activities

The workshop was designed to take participants on a sequential series of topics and learning activities that began with formulating a research challenge and early data collection, through to analysis, translating research to impact, and finally to leadership of research groups and programs. Workshop topics included a range of lectures, peer-to-peer learning sessions, technical hand-on sessions, as well as sessions of personal self-reflection and information processing.

### Day 1

The first day was led by Dr Andrew Chin and Dr Neil Hutchinson and began with an orientation and introductions. Participants also conducted a self-assessment 'marketplace' exercise to identify their current skills and capacity, and their aspirations for growth and personal development. This exercise helped document the expertise in the room and match participants with each other according to their skills and needs.

There was a discussion regarding how different participants selected and prioritised their research topics but in response to the preparation survey results, the activities and content of



Day 1 focused on capturing, handling, and tagging sharks and rays. There was an in-depth facilitated discussion about animal ethics and welfare considerations, as well as operational requirements and expectations, for example, that many journals now require evidence of animal ethics approvals before they agree to publish a manuscript. It was identified that there is a lack of agencies in the region able to issue such approvals.



Participants were then engaged in a series of lectures and video tutorials demonstrating the selection, design, operation, and maintenance of different types of gears to catch sharks and rays, techniques for safe handling and release, how to collect data from live sharks, and simple tagging techniques and equipment. Participants took part in a simulated long-line deployment and retrieval exercise that involved tagging and measuring a model shark. Participants also constructed their own tail ropes and long-line gangions that they were able to take home with them for reference. The day ended with discussion about personal safety and well-being considerations, first aid and emergency response in the event of a shark bite, and advice and discussion about how different teams across the region approached safety during field work.

#### *Key considerations from Day 1*

- Some participants face challenges in gaining animal and human research ethics documentation. This can be overcome by partnering with other institutions that have the capacity to conduct these assessments, but this requires collaboration and trust, as well as



capacity. Some techniques such as animal biotelemetry may be extremely difficult for regional ethics bodies to assess, and there is a deep capacity gap in human research ethics capacity.

- Health and safety and well-being in the field can be challenging to maintain.
- Capture and handling techniques must be adapted to local conditions and tested and refined.
- There was a lot of sharing and advice given about where to source fishing gear and equipment from across the region.
- A wide recognition to work with fishers who are experts in catching sharks and rays.

## Day 2

The second day was led by Dr Neil Hutchinson, Dr Andrew Chin, and Ms Naomi Clark-shen. Learning focused on tagging and telemetry, market surveys, age and growth, and data management and reporting. Participants were shown the different acoustic and satellite tags and show different attachment techniques. There was a peer-to-peer learning session and discussion about how to conduct effective creel and market surveys, and how to collect samples from market vendors. Ethical considerations such as the potential to create markets by paying for samples were discussed.



This was followed by a laboratory session demonstrating how to collect data from specimens acquired from local markets. In pairs, participants dissected either a shark or a ray purchased

from markets in Singapore and recorded biological data and removed vertebrae for age and growth analysis. The cleaning and processing of vertebrae for age analysis was demonstrated. Participants also tried different tagging techniques on their shark or ray to gain hands-on experience in tagging. Finally, a simulated surgery to insert telemetry tags into a specimen's abdominal cavity was performed, and participants who had specific needs to learn and practice surgery and suturing techniques were given on-to-one instruction on surgery and suturing techniques.



Ms Clark-Shen then introduced participants to elasmobranch age and growth theory and analysis, and participants practiced age estimation of prepared samples. Ms Clark-shen then demonstrated how to use R to conduct age and growth analyses and how to interpret the results and apply them to management.

The day ended with an open discussion and peer-to-peer learning about how different groups curated and managed their data. There was a facilitated discussion about safe data storage options, and about writing up and reporting data.

#### *Key considerations from day 2*

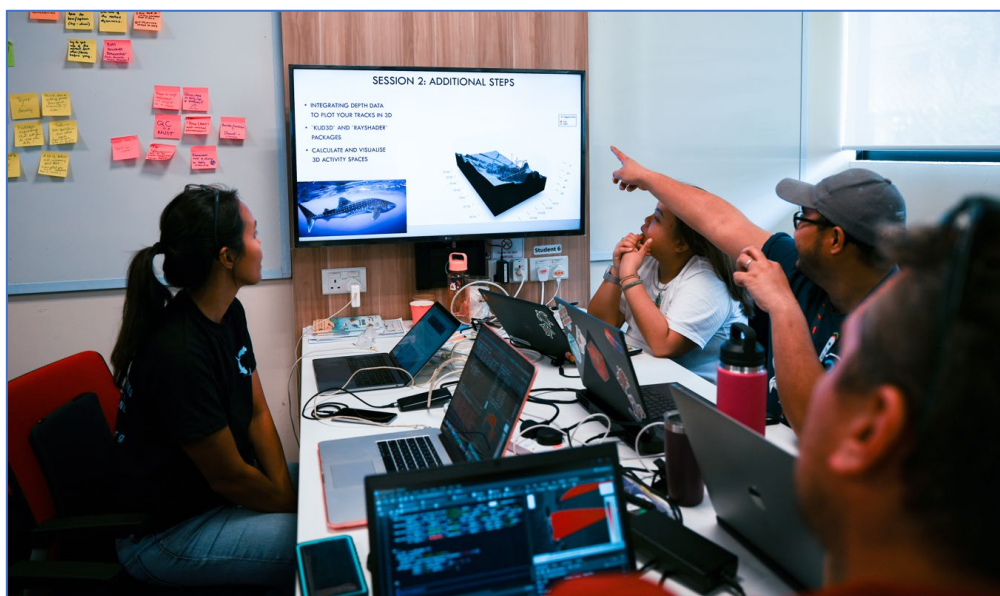
- Local knowledge and experience are essential to conducting effective market surveys. The way a survey is done, and the relationships and arrangements developed with fishers and market vendors varies widely, and need to be developed on a case-by-case basis. Safety and biases also need to be considered, and if enumerators are used there must be a quality assurance/quality control process to ensure data are robust.
- Telemetry tags are very expensive and while they deliver extremely valuable data for conservation and management, tags, acoustic receivers, and satellite data costs are very

significant barriers. There was agreement that a coordinated approach to tagging and telemetry across the region could deliver economies of scale, increase bargaining power to reduce tag and infrastructure costs, and could promote sharing of data across jurisdictions. While there was high interest in this idea, it would be a large and complex project to coordinate across different countries but was viewed as an important issue to explore.

- Most participants maintain their data on computer laptops and external hard drives. This is a very high risk in the humid environments of the tropics. Additionally, costs, staff turnover, the funding focused on short-term projects mean that long-term data curation and management are often neglected. In some locations, limited internet may restrict effectiveness of cloud-based data curation and management, and cloud storage does not mean data are accessible or searchable. Data-management is a critical issue for the region. There was much interest in a regional data hub that all could access at a reasonable fee to store data, or at least meta-data.

### Day 3

The third day focused on data analysis of telemetry data. The session was led by Dr Vinay Udyawer from the Australian Institute of Marine Science who specialises in the analysis, visualisation, and interpretation of spatial data in sharks and rays. Participants used sample datasets in the R programming environment to organise data, perform a series of spatial analyses, and to visualise and manipulate data. This was a very intensive session that required much learning support that was delivered by research students from JCU Australia (Mina Hatayama) and JCU Singapore (Rushan Bin Abdul Rahman) who had expert level experience with R to assist the group. Despite these challenges, this session was hugely successful and resulted in a standing ovation from some participants at the end of the session, a rare occurrence at a workshop.





Day 3 ended with a session by Sally Snow (LAMAVE, Philippines) who led a session on conservation media. Drawing upon the design of LAMAVE's media activities, Ms Snow explored the concept of 'impact media' to deliver conservation outcomes, some of the assumptions and preconditions that need to be considered, and provided an example of Theory of Change model to guide program activities.



### *Key considerations from Day 3*

- There is high demand for expert level data analysis and visualisation. The session today was revelatory for most participants, and there was strong desire to be able to apply these techniques to their own data. However, using R is a steep learning curve which will require further support.
- It also became apparent that Dr Udyawer has invested an enormous amount of time and effort into developing tools, tutorials, and learning materials to analyse and visualise animal telemetry data. However, these valuable resources are potentially at risk as developing, maintaining, and applying these tools depends entirely on Dr Udyawer's professional interest, investment of personal resources, good will, and limited availability. As a result of this workshop, Dr Udyawer is now being supported by Ms Mina Hatayama to ensure that his knowledge is shared and that there is a succession plan in place, but the capacity embodied in Dr Udyawer and being developed in Ms Hatayama is a valuable capacity for the region that needs long-term support.
- There was great interest in conservation impact media, and understanding that it should be rolled out as an integrated program, not as a series of single activities. However, this

is a specialist area that is still emerging in shark and ray conservation in Asia, and indeed, conservation media made by Asian producers for Asian audiences appears to still developing across much of the region. The conservation impacts of such campaigns also requires evaluation.

## Day 4

Dr Hollie Booth led the sessions on Day 4 which focused on the human dimensions of shark and ray research and conservation. There was a discussion about human research ethics and expectations, about researcher positionality, and the role of researchers and potential impact of research projects. Dr Booth presented information on a wide range of research topics situated in Asia touching on wildlife crime, the drivers and motivations of fisher behaviour, the potential roles and limitations of incentive schemes and alternative livelihood projects. Dr Booth also discussed different social science methods and techniques, stakeholder mapping, conflict management, and the benefits and limitations of different approaches. The session including online interactive quizzes and votes, and included case studies that involved persons in the room.

Dr Chin ended Day 4 with a facilitated discussion about perceptions to and experiences with scientific publishing, including the benefits to publishing work as well as the potential costs and risks. There was in-depth discussion about barriers to scientific publishing including language barriers, confidence, time pressures and the lack of funding to pay for open access fees and the tension between taking the time to write up research results and the need to move to the next project proposal that provides funding that allows an NGO to continue working.





#### *Key considerations from Day 4*

- Understanding the human dimensions of shark conservation was universally viewed as essential to effective conservation. However, it was clear that there remains a significant capacity gap in a lack of Asian social scientists. This is crucial considering that diverse languages, cultures, and social settings required knowledgeable and experienced Asian-based social scientists who can directly engage with communities.
- Conservation often involves incredibly complex social and cultural aspects that must be understood to design and implement effective interventions.
- There are numerous barriers to publishing work in scientific literature. While partnering with experienced authors may help, developing the scientific writing and science communication capacity across the region needs to be supported.



#### **Day 5**

The final day was led by Dr Chin who delivered an interactive session on professional development and leadership. Participants returned to the 'market place' exercise from Day 1 to revisit their current capacity and desired skills, and to begin thinking about personal development plans. The sessions covered personal development and staff management issues such as mental health and well-being in conservation, imposter syndrome; founder syndrome; and identifying personal values and drivers. Participants were invited to reflect on their personal and organisation mission, vision, and values, and how these apply in their conservation work and are communicated to stakeholders and teams. Participants were also introduced to concepts and tools for strategic thinking and planning including the theory of change process. The day ended

[illegible]

- Many of the participants are relatively young and emerging in the field and have received little to no leadership training.
- Pressure, poor mental health, dissatisfaction, and burnout are commonly experienced. The COVID-19 pandemic has had a significant and lasting impact on the sector in Asia and many participants are tired. The ‘churn’ of inconsistent funding and the administrative burden that comes with ‘stop-start’ funding is a significant issue. These are not new issues in conservation (Boon 2023; Ramos, Mustafa *et al.* 2017) but the COVID-19 pandemic has exacerbated the impacts of these pressures.
- There is a severe capacity gap in senior executive level leaders in research and conservation in Asia.
- There are still legacy issues regarding parachute science and colonialism that affect how conservation and natural resource management are perceived and pursued. There is a strong sense of regional pride and a desire to uplift Asian elasmobranch research.

- There is very high demand for further training in professional and personal development, leadership and organisational management.
- There is a strong desire for better collaboration and coordination across the region, but this will require a trusted independent broker.

## Other workshop events and activities

One of the goals of the workshop was to help participants connect to each other in the region and to begin to break down the sense of isolation people felt during (and since) the COVID-19 pandemic. There are also national and cultural barriers that exist in the region. Singapore's location as a central hub in SE Asia, as well as its strong commitment to multiculturalism and respect (e.g. four official languages, four main ethnic groups, food and culture from across the Asian regions, strong public policy of religious and cultural tolerance) served as an ideal setting for the workshop. All participants were catered for in terms of dietary and religious needs (e.g. prayer rooms, halal foods, and vegetarian foods) and accommodating these needs is normalised. Having participants staying in the same hotel allowed participants to meet and socialise outside of workshop hours, and there were many new friendships made (as evident in participant social media posts). There was an unofficial dinner held in the city on the last night of the workshop which was a very successful social event. There have been lasting impacts from the workshop (see Impact and outcomes).



The workshop also served to connect participants to the broader network of global shark research and conservation community. Rima Jabado gave a seminar on the IUCN Important Shark and Ray Areas (ISRA) program and used the opportunity to engage Asian researchers and

conservation practitioners in the process (see Impact and outcomes). Sarah Fowler gave a seminar about funding and answered questions regarding funding priorities and processes from her perspective as a scientific advisor for the Shark Conservation Fund and the Save Our Seas Foundation. Akshay Tanna from the Blue Resources Trust gave participants an insight into the planning and preparation of the Sharks International Conference to be held in Sri Lanka in 2026. It should be noted that there was great excitement and enthusiasm that this global event was going to be held in Asia.

## Workshop impact and outcomes

The workshop has had a lasting impact on participants and has provided a significant boost to shark and ray researchers and conservation practitioners in the region. This is perhaps best illustrated by the formation of “the shark gang”, a community of practice of Asian shark and ray researchers and practitioners who have regularly met online since the workshop with the intention to form an ongoing professional network to increase collaboration and peer support. The group has formed a task force to scope the potential requirements for forming an Asian scientific society similar to the European Elasmobranch Society that covers the area from Pakistan to the eastern edge of the Philippine EEZ, and will report back to the larger group on its findings. In this sense, the workshop has provided the catalyst for what could be the formation of Asia’s first scientific society for sharks and rays.

Meanwhile, the WhatsApp group that was formed in the leadup to the workshop has expanded to include more colleagues and associates across Asia, and is still used on a daily basis. The group now has 41 members and to date, has shared over 390 links, documents and photos between participants. Many of these posts are seeking assistance to help identify unusual shark or rays species, with numerous discussion threads being formed. This regular and active exchange of information spanning from the Philippines to Bangladesh is unprecedented in the Asian shark and ray research and conservation community.

Other specific examples of impact include:

- The development of a project to create a shark conservation game involving workshop participants from Indonesia, Singapore, and Malaysia.
- The concept of a scientific book on shark and ray research in Asia profiling the research of Asian researchers and conservation practitioners (this proposal is in development with a senior editor from Springer).
- Development of new project concepts for research and conservation projects in Singapore and Indonesia.



- Several workshop participants were invited to attend the IUCN ISRA workshop in Indonesia in Feb 2024 to propose new ISRAs for Asia.
- Discussions are underway about holding a tagging workshop in Thailand.
- An invitation to present the leadership session at the University of Malaysia Terengganu
- A research proposal and scholarship application submitted for an Indonesian student to undertake a postgraduate research degree in Australia.

Perhaps the most informative indicator of impact has been the ongoing interest in holding a second workshop to build on the gains from this workshop. Feedback has indicated that participants gained a baseline understanding across a wide range of issues, but now wish to have the opportunity to explore key issues and concepts in more depth. There was also a strongly stated desire to have more time to focus on specific challenges faced by individuals and organisations in technical aspects of their work, but also in professional development, organisational management, and leadership.

Dr Andrew Chin, Dr Neil Hutchinson and the LAMAVE group in the Philippines are planning this next developmental workshop to be nominally held in the Philippines in September 2024. The intention is to consolidate the learning and progress from this workshop, and provide targeted peer-supported learning and problem solving for real world challenges faced by people in the region. Interest has also been expressed by the organisers of the Sharks International conference to hold an introductory workshop for western and south Asia in 2026. There is a clear need and interest in this mode of capacity building.

The workshop was extremely successful as shown in the data of the workshop feedback survey (see Attachment). Perhaps the most important quantitative indicator is that all workshop participants would either recommend (25%) or strongly recommend (75%) this workshop to their peers and colleagues; and strongly agreed (75%) or agreed (25%) that the workshop as a good use of their time.

The qualitative feedback is also particularly informative of the event's impact. Comments made by participants, either from the online feedback survey, social media posts, or direct messages to workshop organisers (and workshop funders) include the following.

*“SG workshop such a good refreshment for me to keep connected with the reason why I am here.”*

*“It is wonderful that the funders recognise the importance of networking and collaborative efforts, thus providing the much needed funds to support regional-level workshops. As a non-*



*elasmobranch specialist attending this workshop, there was so much to learn and glean from the practitioners in SEA region that can be applied to other threatened marine taxa groups. Now, I'm part of this awesome network of conservationists, whose experience can be readily tapped on when in need. Greatly appreciate the foresight of both Funders and Organisers in making this workshop happen!"*

*"So far, the workshop has bringing back his presence of mind. His performance way much much better. Again, thank you for having him."*

*"Thank you for funding this gathering that allowed us network, exchange knowledge and develop friendships & working relationships that continue to this day. Not many grants see the value in this and we appreciate that you did and gave us this opportunity!" (message specifically for the workshop funders).*

*"The last day was really impactful and it's good that you speak about some of the things we don't dare to talk about out loud. . . ."*

*Asia is probably the most challenging region for shark conservation. Previously, there was no unified identity of shark conservation practitioners. This project has created that, and unified shark conservationists across multiple countries. Of note, most here are in early career phases. Having a central identity across multiple nations where people can share, ask Q's and collaborate together has immeasurable benefits going into the future. This project has sowed the seeds of fostering a collaborative culture in tackling Asia's shark conservation problems from within. Moving forward, we need to nurture and build on this. The interest among Asia's shark conservation practitioners is obviously very high (e.g., daily activity in this chat). What we need now is continuing support to ensure longevity and facilitate continued interest within Asia's shark scientists of the future. Well done everyone for your contributions so far*

*“Grateful for the platform to interact, share, learn with such a wonderful community of practioners”*

*“Thank you for making this workshop finally happening. I’ve wait for years to gather with our fellow shark and ray practitioners in SE Asia and Beyond. This workshop turns out to be a lot more than I expected in terms of teaching, material provided, venue, food and facilities. All the mentors are experts in their field, understanding, full of positive energies and inclusive. For more, we developed a sense of friendship and a lot of talks about future collaborations that will be useful for small NGOs like us! Overall 10/10!!”*

*“This is the BEST workshop I have ever attended!”*

However, workshop participants did note that there was a lot of content covered and asked for more time to reflect and integrate the learning. They also suggested that the next workshop have a session where participants can preset their work and their challenges for targeted help. This feedback has been integrated into the design of the next workshop, and now that trust and relationships are established with the community, a more in-depth and bespoke workshop format and approach can be used.

Speaking personally, this workshop was one of the most personally and professionally rewarding projects that we delivered in recent years, and on behalf of all the organisers and participants, we thank the Shark Conservation Fund, and the Save our Seas Foundation and Synchronicity Earth for providing the opportunity for this project to happen. We believe that this will have been a watershed event for capacity building in shark and ray conservation in Asia.



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