

# **FINAL REPORT**

**(April 2022 – September 2024)**

**for Society for Marine Mammalogy**

**Myanmar Coastal Conservation Lab @ Point B Design +  
Training**

**Project Title: An Integrated Approach to the  
Conservation of Coastal Cetaceans in the Gulf of  
Mottama, Myanmar**

**Grant: Conservation Fund, Society for Marine  
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## EXECUTIVE SUMMARY

The Myanmar Coastal Conservation Lab (MCCL) with the support of the Gulf of Mottama Project (GoMP) has played a key role in biodiversity monitoring and marine mammal conservation in the Gulf of Mottama, Myanmar. This region is home to threatened and endangered marine mammal species: the Irrawaddy dolphin (*Orcaella brevirostris*), the Indo-Pacific finless porpoise (*Neophocaena phocaenoides*), and the Indo-Pacific humpback dolphin (*Sousa chinensis*). The former is Critically endangered, and the other two species are Vulnerable (IUCN Red List). However, Southeast Asia, especially Myanmar, suffers from severe data shortages and conservation challenges due to extensive coastlines and logistical challenges. Despite their ecological significance, these species face severe threats from bycatch in small to large-scale fisheries, which poses a global threat to marine mammals and intersects with local livelihoods and governance.

The MCCL has implemented integrated approaches to conservation and research in the Gulf of Mottama (GoM). The goal is to fill data gaps and create a sustainable model for ongoing research, skill development, and community involvement in safeguarding small cetacean species. This included estimating the population of the three cetacean species in the gulf through boat-based line transect surveys, establishing an acoustic monitoring program for *N. phocaenoides*, estimating bycatch rates in small-scale fisheries through Rapid Bycatch Assessments, refining our understanding of the current and past distribution of these species in the Gulf of Mottama through Local Ecological Knowledge surveys, and training community youths in research and community engagement skills. Importantly, local communities actively participate in both research and conservation efforts throughout this comprehensive process.

Funding received in 2022-2024 from the Society for Marine Mammalogy (SMM) allowed us to continue the series of boat-based surveys (this survey begun in 2018), local ecological knowledge and rapid bycatch assessment (LEK and RBA) interviews, and launched the first acoustic monitoring program for Indo-Pacific finless porpoises in the Gulf. The team successfully collected approximately 35 days of acoustic data across ten deployments, showcasing significant community engagement and providing hands-on experience with marine conservation technologies. In addition, funding from SMM supported 6 marine mammals stranding response trainings and nine marine mammal community campaigns in Mon and Bago regions, engaging a total of 846 participants from various demographics, including fishers and youth. Finally, SMM funding supported a capacity building program in which 14 MCCL youths were trained in marine mammal research and conservation. We highly appreciate the funding from SMM as it has filled in funding gaps in 4 important activities and allowed us to fully implement them.

Despite these accomplishments, challenges such as political instability, environmental threats, and logistical difficulties affected the project's implementation. Nevertheless, the project has laid a foundation for future conservation work in the Gulf of Mottama by providing critical data, raising awareness, and building local expertise. Key recommendations for future conservation efforts include expanding research efforts, expanding training opportunities for local youths and community members to develop conservation and community engagement skills, and strengthening community-based monitoring and engagement initiatives to ensure the long-term success of marine mammal protection efforts. MCCL's integrated approach exemplifies the potential for meaningful collaboration between local communities and conservation efforts, contributing significantly to the protection and understanding of

endangered marine mammal species in the Gulf of Mottama. By encouraging community engagement and capacity building, MCCL is laying the groundwork for sustainable conservation practices that are vital for the preservation of these critical marine ecosystems.

## ACKNOWLEDGEMENT

Myanmar Coastal Conservation Lab (MCCL) @ Point B Design + Training extends heartfelt appreciation for the opportunity to contribute to such a significant and impactful project. This initiative connected us with the extraordinary marine life of the Gulf and provided invaluable guidance, trust, and unwavering support. Your optimism, intelligence, courage, boldness, kindness, and passion for marine mammal conservation have been a constant source of inspiration for our team. Your enlightened actions have undeniably motivated us to reach this milestone.

We are deeply grateful to the Society for Marine Mammalogy for their generous grant support, which has played a vital role in advancing our research and conservation efforts. Their contribution has empowered us to make significant strides in protecting marine mammals in the Gulf, and their commitment to fostering scientific research continues to inspire our team. We truly appreciate their support in making this important work possible. We also express the Gulf of Mottama Project, funded by the Swiss Agency for Development and Cooperation (SDC), for their generous financial support. We also extend special thanks to the staff of our consortium partners for their coordination of MCCL's research and conservation efforts.

Our deepest appreciation goes to the local communities who wholeheartedly participated in our research and conservation activities. Their engagement has provided invaluable lessons and experiences, motivating us to further pursue our mission.

We are deeply grateful to Dr. Louisa Ponnampalam and the MereCet Malaysia team for their steadfast support and inspiration, significantly enhancing our conservation efforts. Sincere thanks also to Cindy Peter of the Sarawak Dolphin Project for hosting us and offering hands-on experience in boat-based marine mammal surveys in Sarawak, Malaysia.

In addition, we express our deepest gratitude to Dr. Nick Tregenza for his generous donation of the acoustic device and his expertise in data analysis, which has greatly improved our capacity to monitor marine mammal activity in the Gulf. His dedication has had a profound impact on strengthening our research capabilities.

On top of that, we want to deeply thank and show deepest gratitude to Dr. Louella Dollar for her kind support in virtually training the team for line transect survey process and data analysis for population estimate.

Lastly, we acknowledge the MCCL team for their dedication. Our heartfelt thanks go to the young researchers whose enthusiasm and contributions have left a lasting impact on this project. Together, we have created unforgettable memories and forged lasting friendships.

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## **1. INTRODUCTION**

The project focuses on three small coastal cetacean species in the Gulf of Mottama (GoM): Irrawaddy dolphin (*Orcaella brevirostris*), Indo-Pacific finless porpoise (*Neophocaena phocaenoides*), and Indo-Pacific humpback dolphin (*Sousa chinensis*). The Gulf of Mottama is crucial for these species, yet significant data gaps and conservation challenges persist. Bycatch in small-scale fisheries is a major global concern affecting marine mammals and is intricately linked to local livelihoods and governance. The lack of comprehensive data on marine mammal populations and bycatch rates complicates effective conservation efforts.

Southeast Asia, including Myanmar, faces severe data shortages due to its extensive coastlines and logistical constraints. The Irrawaddy dolphin is classified as Endangered, with several subpopulations Critically Endangered, while the Indo-Pacific finless porpoise and Indo-Pacific humpback dolphin are listed as Vulnerable by the IUCN Red List. Despite the importance of Myanmar's coastline for marine mammals, research and conservation efforts have been limited. Until recently, there were no active marine mammal research projects along Myanmar's coast. The designation of Important Marine Mammal Areas (IMMAs) has excluded Myanmar, highlighting the need for further assessment of potential IMMAs. Recent political instability and economic disruptions, including a military coup and the COVID-19 pandemic, have further weakened conservation efforts, disrupted government agencies, and intensified the exploitation of coastal resources.

We apply an integrated approach to understand the population ecology, the distribution of the species, annual rate of bycatch of the species in the small-scaled fisheries to finally formulate effective conservation in collaboration with communities in the GoM.

We are implementing the project jointly with SMM's conservation grant and larger conservation project, Gulf of Mottama Project (GoMP). To address these critical knowledge gaps, this project's integrated approach encompasses the following 6 objectives:

- Estimate the population abundance of three cetacean species in the Gulf of Mottama through line transect surveys.
- Test and establish an acoustic monitoring program for Indo-Pacific finless porpoises in the Gulf of Mottama for future population monitoring work.
- Estimate the annual bycatch and bycatch mortality rate for the three species of coastal cetaceans in the Gulf of Mottama.
- Determine the current distribution of these three cetacean species in the Gulf of Mottama, including the Sittaung River, through expanded LEK survey efforts.
- Engage communities in the monitoring, stranding response, and conservation campaigns of Gulf of Mottama marine mammals.
- Build conservation research and action skills among local youths through MCCL's community youth internship program. As part of larger GoMP-funded efforts, with this specific element to be funded through the SMM Conservation Fund.

The SMM's conservation grant started in April 2022 and we submitted 1 progress report in July 2023. Follow with the progress report, we developed the final report in September 2024, trying to communicate its achievements, challenges, lesson learned, recommendations.

## 2. METHODOLOGY, RESULT, DISCUSSION, AND RECOMMENDATION

### 2.1 Estimate the population abundance of three cetacean species in the Gulf of Mottama through line transect surveys

#### 2.1.1 Method

The boat-based survey for marine mammal line transects was designed and conducted along Zee Gone beach, Chaung Zone coast, Gulf of Mottama, Mon State, Myanmar. The survey period lasted six months (January, February, March, October, November, and December) in a year. This method involved systematic observation along predetermined surveys lines to gather data on cetacean sighting, recorded photos of these cetaceans and conducted photo identifications to estimate population abundance. Transects extended 12 km offshore, spaced at 4 km intervals perpendicular to the coastline to ensure habitat independence (see Figure.1).

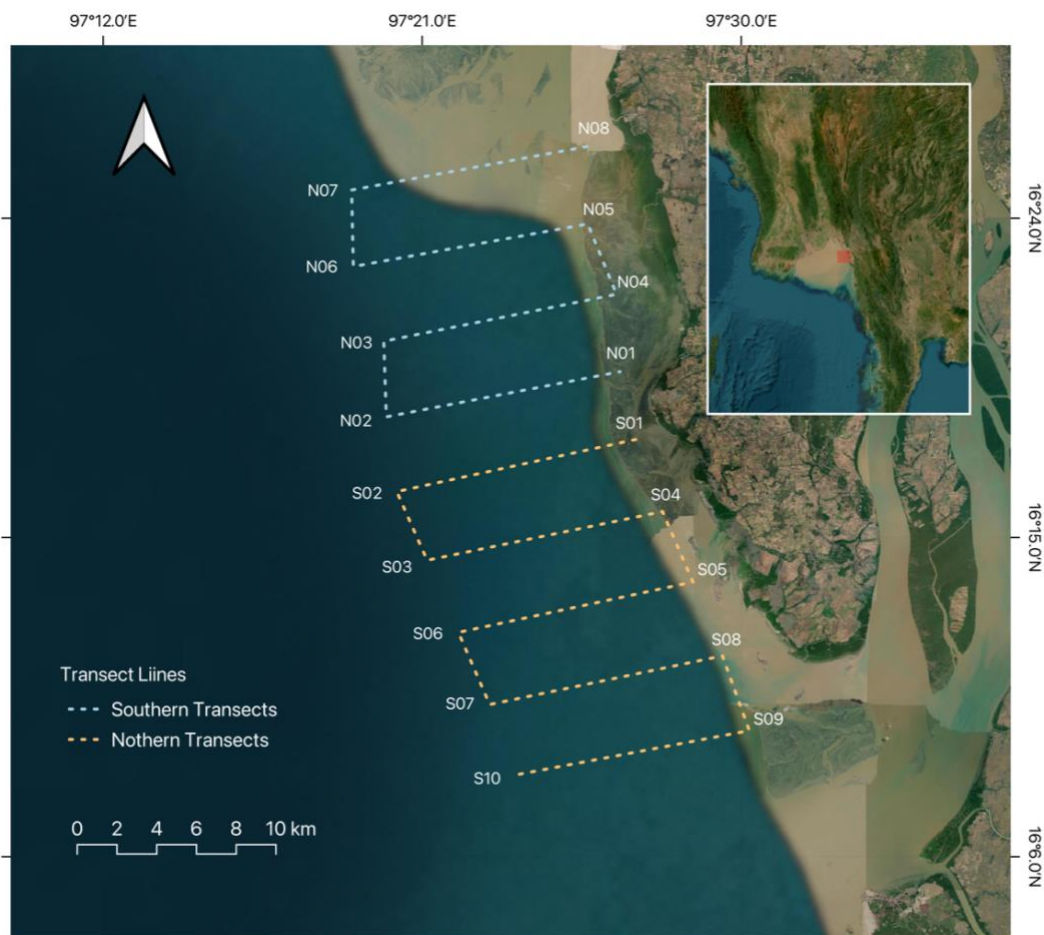


Figure 1. Map of systematic transects for boat-surveys in Zee Gone, Chuang Zone Township.

We used a wooden vessel, powered by 2 x 90 Hp diesel engines for survey and the survey team consisted of 5-6 researchers and 2 boat skippers and two observers rotated every 30 minutes, scanning with naked eye and binoculars. During the observation, fishing gears within 500m of the transect were also observed. Data collection included data collectors documented observations in the survey log sheet and sighting sheet. We also collected weather conditions at the start and end of transect lines, with additional recordings during significant weather changes. On-effort sightings were analyzed for species identification, group size estimation, and behavioral observations. Environmental data, including turbidity and depth at sighting locations, were recorded using a secchi disk and handheld depth sounder (HONDEX PS7).



*Photo of the MCCL and Community Youths from local conservation group (LCGs) are taking oceanographic data in line transect boat-based survey.*

The recorded photos were sorted for photo identification process and it is still processing in 2024. The survey data will be analyzed using Distance Sampling techniques to derive density estimates, which were then used to estimate overall population sizes. The MCCL received data analysis skill training from Dr.Louella Dolar and still processing the data analysis for population estimate and will develop technical report on December for Gulf of Mottama Project after completing two surveys in October and November 2024.

### 2.1.2 Results

Table 1. Opportunistic and line transect boat-based survey efforts from 2018-2024 March (final version will be available in December 2024) in Zee Gone, Chaungzon,

Survey Year	Survey Frequency	*Total Time (hr)	**Total Effort (hr)	Total Distance (km)	Total Effort (km)	# Sightings				
						Np	Ob	Sc	UNID	Total
2018	1	N/A	N/A	N/A	N/A	0	1	0	0	1
2019	14	N/A	N/A	N/A	N/A	13	45	1	0	59
2020	3	18.32	15.05	183	157	6	2	0	1	9
2021	10	66.68	53.65	667.11	551.49	26	12	1	2	41
2022	3	22.17	19.42	219.30	229.40	7	3	2	1	13
2023	16	108.98	94.25	1047.35	959.03	47	22	6	1	76
2024	9	57.85	48.13	605.88	552.07	18	10	3	0	31
<b>Total</b>	<b>56</b>	<b>274</b>	<b>230.5</b>	<b>2722.64</b>	<b>2448.99</b>	<b>117</b>	<b>95</b>	<b>13</b>	<b>5</b>	<b>230</b>

Note: Np = Indo-Pacific Finless Porpoise, Ob = Irrawaddy dolphin, Sc = Indo-Pacific Humpback dolphin,

UNID = Unidentified animal

\*Total time spent on boat during the survey

\*\*Total time spent on effort observing marine mammals during the survey

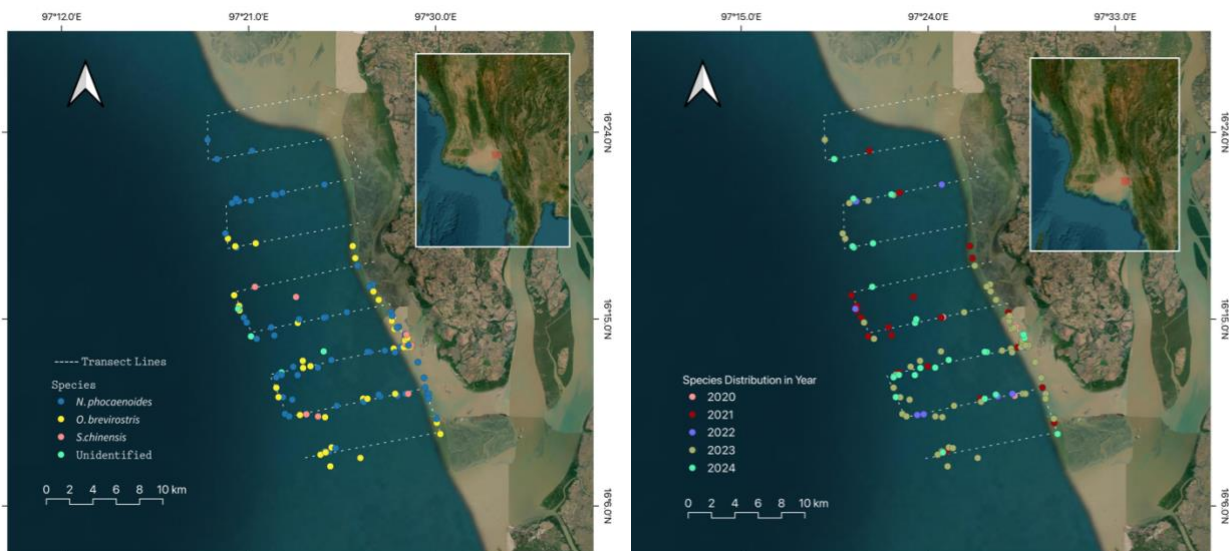
The opportunistic boat surveys began in October 2018 and were completed in March 2019. A total of 60 sightings were recorded in this survey, with Irrawaddy dolphins having the highest number of sightings at 46. The systematic boat-based line transect surveys recorded 170 sightings in total. These surveys initiated in December 2020, were completed in March 2024. Throughout these surveys, Indo-Pacific finless porpoises were the most frequently sighted animals (n = 86) (Table 1).

To determine changes in sightings from year to year, we analyzed the data provided in the table, which summarizes the number of sightings from 2018 to 2024. The data reveals fluctuations in sightings over the years. In 2018, there was only one sighting, which significantly increased to 59 sightings in 2019 during the opportunistic surveys. The line transects recorded 9 sightings in 2020. In 2021, sightings rose again to 41, then slightly dropped to 13 in 2022. The number of sightings peaked again at 76 in 2023, but decreased to 31 in 2024, noting that two more surveys are expected later in the year. These variations suggest that there have indeed been changes in sightings each year.

It is important to note that the survey methodology changed over the years. The 2018 and 2019 surveys were opportunistic, meaning sightings were recorded whenever possible without a structured survey design. In contrast, from 2020 to 2024, systematic line transect boat surveys

were conducted, which are more structured and consistent. This change in methodology likely impacts the number of sightings reported. Additionally, the frequency of surveys varied, which also influenced the sightings. For instance, there was only one survey in 2018, while 14 surveys were conducted in 2019, contributing to the higher number of sightings in that year. The survey effort, measured by total effort hours and total effort distance, further impacts the number of sightings.

However, the annual species distribution data shows that the southern transect lines are the most frequently sighted areas for the three small cetacean species, compared to the northern transects. In 2023, sightings were more concentrated in the muddy waters of the coastal areas. Other sightings were mostly recorded away from muddy waters, in clearer waters. In 2024, sightings were more dispersed across all transect lines, except for N07 and N08, which were excluded from the survey due to strong currents and shallow estuary waters (*Figure 2, right*). Basically, the distribution of these small cetacean across all transect lines might be possibly due to changes in density of prey availability, water conditions, fishing gear interactions, or migration patterns.



*Figure 2. Map illustrating the sightings of three cetacean species recorded during line transect surveys in the study area (left) and annual distribution of three cetacean species recorded during line transect surveys in the study area (right).*

For species-specific distribution, Indo-Pacific Finless Porpoise (*N.phocaenoides*) was observed in all transect lines, indicating a broad distribution across the study area. The Irrawaddy Dolphin (*O.brevirostris*) was sighted in all northern transects, suggesting a preference for this region. The Indo-Pacific Humpback Dolphin (*S. chinensis*) had scattered and less frequent sightings, only observed in northern transects. Despite their rarity, these dolphins were often found in large groups, ranging from 3 to 30 individuals on average during the surveys (*Figure 2, left*).



*Photos of sighted three marine mammals in line transect survey in the Gulf of Mottama: (S. chinensis) in top two photos, (O.brevirostris) in second row, and (N.phocaenoides) in the last row.*

We also observed injuries such as cut dorsal fins on Irrawaddy dolphins (*O.brevirostris*) and Indo-Pacific humpback dolphins (*S. chinensis*) from 2023 to 2024 boat survey, which might be due to entanglement in fishing gear. Therefore, bycatch remains the main threat to marine mammals in the Gulf of Mottama area.

In addition to bycatch, there are other significant threats. During our surveys, we observed numerous small and medium-sized fishing boats near our survey area, indicating potential threats from noise pollution and boat strikes. The presence of many fishing vessels generates underwater noise, which can disrupt the communication, navigation, and feeding behaviors of marine mammals. Additionally, pollution is another major concern, as evidenced by the large amounts of plastic debris found on the beaches. These observations underscore the various

threats facing marine mammals in the region, highlighting the need for comprehensive conservation measures.

During our 2023 boat-based surveys, our boat driver, a local fisherman from Zee Gone, mentioned a notable observation. He suggested that we might not see many marine mammals in the northern transect lines due to the presence of medium-sized drift net fishing boats harvesting fish there. He believes that the animals are aware of the danger and avoid the area. Indeed, when we conducted our survey, we observed more than 30 drift net boats within 4-8 miles from the shore. This raises the possibility that the northern transect might not be their preferred habitat. However, further study is needed to confirm this hypothesis.

Additionally, during the October 2023 – October 2024 boat survey, the MCCL team noticed an unusual behavior among the three small cetacean species: they would quickly swim away when we approached to take photographs. This strange behavior led us to speculate about the possibility of intentional hunting. Some fishers have informed us that there are individuals who hunt these marine mammals, which could explain their heightened wariness and avoidance of boats. These findings show more surveys are needed for future Marine Mammal conservation work in the Gulf of Mottama.

**\*\*more surveys are needed for future Marine Mammal conservation work in the Gulf of Mottama.**

### **2.1.3 Discussion**

The session discussed on the key achievements, insights, limitations, recommendation, and challenges in implementing of activities from 2019 to 2024

#### **Key Achievements**

- Established the first systematic monitoring program of small cetaceans in the Gulf of Mottama in collaboration with international experts and local young researchers.
- Well-established relationship and trust-building with fishing communities in the hot-spot areas for the cetaceans.
- The MCCL youths have gained valuable skills in boat-based surveys, empowering them to take the lead in guiding local youth through the surveying process.
- The MCCL youths have acquired technical expertise from international specialists and received mentorship from senior members, allow them to expand marine mammal conservation efforts across Myanmar.
- Built trust and relationship with local fishers and they become more open to discuss about bycatch issues and even and even share information of Marine Mammals.
- Trained community youths from Local Conservation Groups (LCGs) allow them to learn and apply skill in survey trip and they show significant interest and willingness to participate in marine mammal monitoring and conservation efforts.
- Survey trips allowed the team to immerse in the community and listen to the community ideas, voices, and perspectives well which will lead the strong community engagement in the future.

## Challenges and Limitations

- Limited facilities in conducting survey including: survey boat condition and limited good devices impacted the delay of the field works.
- Ongoing political conflicts impose safety issues, difficult to get approval, restrict travel and discourage youth participation.
- Limited technical capacities of local researchers to independently analyze and interpret the scientific research findings
- Detection and Identification Issues: Bad weather and the elusive nature of some species make it hard to accurately spot and identify marine mammals.
- Technical Challenges: Line transect tracker malfunctions during intense heat (11:30 AM to 2 PM), impacting data accuracy.
- Seasickness among new team members reduces their performance, and transporting equipment is challenging due to political instability.
- Limited and lack of budget is a major concern to sustain long term survey efforts

## Key Insights

- It is essential to estimate the population and abundance of small cetaceans in the Gulf of Mottama for effective monitoring and conservation of the animals against local conservation threats.
- Regular monitoring and longitudinal study of marine mammals are required to understand the population ecology of the identified population, habitat preferences are required to understand for better conservation management (especially for potentially habitat use of the upper part of the gulf by the animals)
- Required to identify hotspot areas to inform decision making for spatial management of the animals.
- Include more community youths in boat survey enhance their skills and interest in marine mammal research

## Recommendations

- Continue ongoing research activities and assess population estimates in the Gulf of Mottama to enhance scientific understanding of the animals in the area. Additionally, more opportunities should be designed to increase the participation of local communities and youth in the process.
- Coordinate with experts for data analyzing skill building and expand networking with local marine mammal experts to understand more about marine mammal research in Myanmar.

## **2.2. Test and establish an acoustic monitoring program for Indo-Pacific finless porpoises in the Gulf of Mottama for future population monitoring work.**

### **2.2.1 Method**

To overcome the challenges of visually detecting Indo-Pacific finless porpoises, an acoustic monitoring program was able to develop and piloted for Indo-pacific finless porpoises in the Gulf of Mottama in late 2023. Passive acoustic monitoring methods were applied widely on the same species (Jefferson et al., 2002; Kimura et al., 2009) as well as the vaquita (*Phocoena*

*sinus*) and Baltic Proper harbor porpoise (*Phocoena phocoena*) (Jaramillo-Legorreta et al., 2017; Owen et al., 2021). With remotely guidance, via zoom and email, by Dr. Nick Tregenza from Chelonia Limited and Dr. Tara Whitty, the MCCL team worked with fishers including, conducting focus group discussion to understand their willingness in collaboration, potential challenges, and location for the deployment of 3 FPOD units which were loaned from Chelonia Limited.

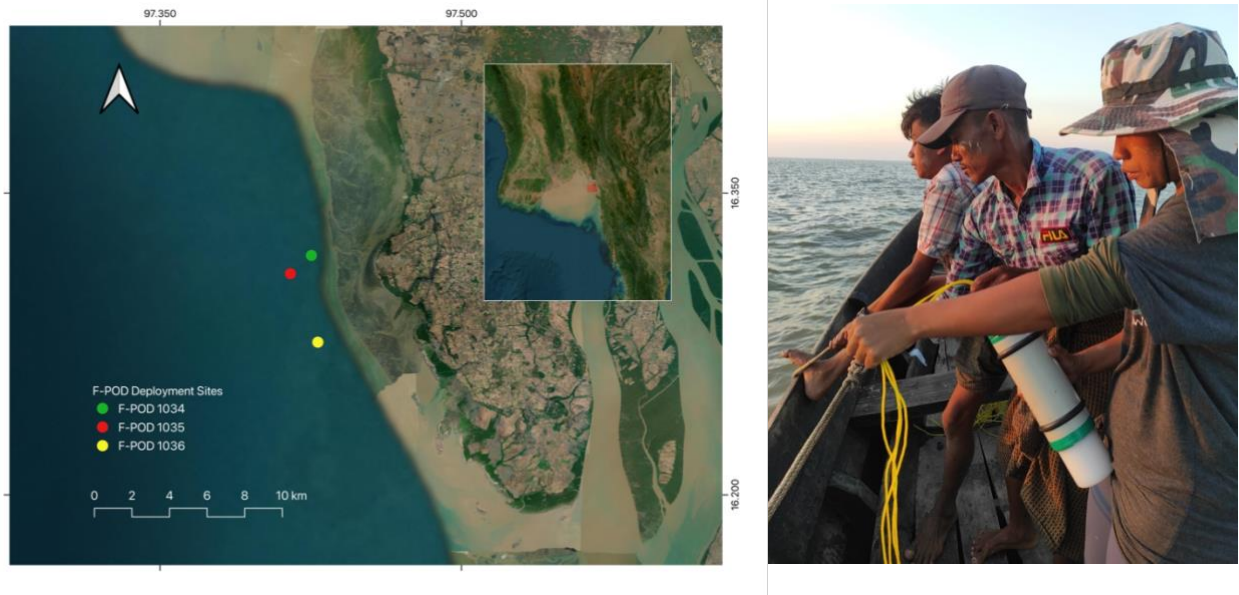


*Photo of Focus Group discussion with fishers for acoustic monitoring assessment in Zee Gone village, Chaung Zone Township, Mon State.*

Three locations were selected (see figure 1) based on input from local fishers, and start deploy 3 F-POD in dry season from November to April. The F-PODs were deployed at 2-week intervals, each session lasting 3-5 days, to ensure consistent data collection. The three F-POD were attached at the fishing net's string with vertical position and deployed it within 3-5 days in the water approximately in the depth of 14m to 16m. When fisher hauls fishing net, the F-POD were also brought back and took the SD card out from the POD for data retrieval. Before piloting the acoustic monitoring, the MCCL team reviewed and digested the process which is provided in the email link by Dr.Nick Tregenza. In addition, the team introduced three FPODs to fishermen and trained them how to operate the devices.



*Photo of one MCCL alumni introduces F-PODs and trains the local fishermen how to manage the acoustic devices.*



*Figure 1. Map of three F-POD were deployed in ZeeGone and Sepalar fishing ground in Chuang Zone and Paung Township.*

### 2.2.2. Results

In acoustic monitoring program in the Gulf of Mottama, community engagement was integrated into the project through Focus Group Discussions, where local fishers were informed about the monitoring process and encouraged to participate. The project not only advanced acoustic monitoring efforts but also strengthened the involvement of local communities in marine mammal conservation, ensuring a collaborative approach to protecting the Gulf of Mottama's marine ecosystem.

**Table 1. Details of activity in acoustic program**

Activity	Description	Frequency	Participants
<b>Focus Group discussion of assessment on acoustic monitoring</b>	Meet with 11 fishers and discussed the assessment questions.	1	11
<b>Skill building for acoustic device management and deployment</b>	Introduced F-PODs to fishers and practically trained how to set up, deploy, and haul the devices.	2	3

<b>F-POD deployment and retrieval</b>	Deploy and retrieval tree F-PODs	10	5
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In collaboration with local fishermen, we conducted one group discussion with 11 participants to gather insights on acoustic development. Additionally, organized two sessions to train fishermen on deploying the F-POD devices. Deployed F-POD devices a total of 10 times for each unit, between November 2023 and April 2024, with each deployment lasting 3-5 days. This provided a total monitoring period of approximately 35 days per device. We discussed assessment questions on acoustic monitoring, the questions included three main themes: 1. fishing activity and marine mammal sighting, 2. Fishing net issues, and 3. Participation (see annex 01).



*Photo of the boatman who is local fisher and the MCCL alumni are taking out the acoustic devices from the sea.*

**Table 2. F-POD Deployment Details:**

F_POD#	Total Deployments	Deployment (days)	Total Monitoring period (Approx. Days)
1034	10	3-4	35
1035	10	3-4	35
1036	10	3-4	35

Table 2 shows three devices (F\_PODs) labeled 1034, 1035, and 1036. Each of these devices was deployed 10 times approximately. For each deployment, they were active for approximately 3 to 4 days, resulting in a total monitoring period of about 35 days for each device. The data analyzing is still in the process and the team is planning to continue acoustic monitoring in October, and November 2024, so the acoustic monitoring final report will be developed in December and submit to SMM.

### 2.2.3. Discussion

The session discussed on the key achievements, insights, limitations, recommendation, and challenges in implementing of activities from 2022-2024

## Key Achievements

- Established the first acoustic monitoring program for Indo-Pacific finless porpoises in the Gulf of Mottama.
- MCCL youth gained hands-on experience with F-POD devices and software under the guidance of Dr. Nick Tregenza from Chelonia Limited.
- Local fishermen were actively involved in the deployment and recovery of the F-POD devices, increasing community engagement in marine mammal conservation efforts.
- Consistent F-POD deployments were conducted over a 6-month period, ensuring regular data collection for ongoing analysis.
- The boat man benefited from the acoustic deployment and retrieval process as he got paid for his boat rental and travel cost.
- Fishers who agree to deploy acoustic devices in their fishing net got rewarded with small gifts and they become more interested in the acoustic monitoring program.
- Local fishermen showed strong interest and were eager to participate in marine mammal conservation efforts, highlighting their commitment and potential for future collaborations.
- The project provided an opportunity for both MCCL youth and local fishermen to build skills in the use of advanced technology for conservation work.

## Challenges and Limitations

- This was the first-time using F-POD acoustic monitoring in Myanmar, leading to difficulties in understanding the technology, such as terminology, data analysis, and acoustic methods for the team.
- Recovery of F-PODs was inconsistent due to the environmental challenges in the Gulf of Mottama, such as high tides and strong water currents. Fishermen had to adjust recovery times based on these conditions.
- Transportation issues in the region made accessing deployment sites difficult.
- The political climate created difficulties in transporting FPOD devices.
- The devices cause some worry to fishermen in the first time as they are worry for the device lost.
- Limited technical capacities of local researchers to independently analyze and interpret acoustic data.

## Key Insights

- It is essential to estimate the population and abundance of small cetaceans in the Gulf of Mottama for effective monitoring and conservation of the animals against local conservation threats.
- Regular monitoring of finless porpoise are required to understand the population ecology of the identified population, habitat preferences through acoustic monitoring are required to understand for better conservation management (especially for potentially habitat use of the upper part of the gulf by the animals)
- The deployment and recovery process should be adapted to local environmental conditions, including tides and currents, to ensure consistent data collection.
- Engaging local fishermen in marine mammal conservation can encourage a sense of ownership and increase their commitment to the project.
- Further training and support are necessary to help participants fully understand acoustic monitoring methods and data analysis.

## Recommendations

- Increase training opportunities for both MCCL youth and fishermen to improve their understanding of acoustic monitoring technologies.
- Develop strategies to overcome transportation challenges, such as scheduling deployments during favorable weather and tide conditions.
- Consider alternative methods to minimize fishing net damage and address fishermen's concerns regarding the use of acoustic devices.
- Continue to empower local fishermen in conservation efforts, providing them with leadership roles in future projects.
- Follow up with regular community discussions to address concerns and further educate on the benefits of acoustic monitoring for marine mammal conservation.

### **2.3 Estimate the annual bycatch and bycatch mortality rate for the three species of coastal cetaceans in the Gulf of Mottama.**

See annex 2

### **2.4 Determine the current distribution of these three cetacean species in the Gulf of Mottama, including the Sittaung River, through expanded LEK survey efforts.**

In late 2023, we were able to expand LEK and RBA interview in Mi Lauk village in North-west of the coast in Kawa Township, Bago Region. Since then, we could not continue the interview due to the political conflict and travel issues. Based on the LEK & RBA report which is submitted in July 2022, we included data and updated its key findings, discussion, and recommendation from the last interview and had attached it as an annex 2. So, please see annex two for objective (3) and (4).

### **2.5 Engage communities in the monitoring, stranding response, and conservation campaigns of Gulf of Mottama marine mammals.**

#### **Method and Result**

This project was integrated with the broader GoMP-funded community engagement program, which will continue throughout the project and beyond in collaboration with GoMP.

#### **2.5.1 Participation of Community in the Research Activities**

All the marine mammal conservation activities and boat-based surveys are conducted in collaboration and coordination with local communities. The boat-based surveys hired one boat skipper and one assistant from the village where the surveys were conducted. In addition, 6 community youth from Local Conservation Group collaborated in the Boat surveys and community-led marine mammal conservation program which is funded by the GoMP project. They were trained in using GPS for navigating through transects and basic behaviors to interact in sightings with marine mammals. They were also trained to identify marine mammals. The project team also built very strong relationships with community leaders, fishers, and women through regular survey activities.

## 2.5.2 Community Awareness Raising Activities

To support better contribution of MCCL for community awareness raising in terms of marine mammal conservation, Dr. Tara Sayuri Whitty developed a series of lectures on marine megafauna in 2019 and the training was provided to the MCCL team. Dr. Louella and the MareCet team also provided marine mammal stranding response training to the MCCL team. In addition, Point B Design + Training also trained in the concept of community engagement through a human-centered design thinking approach based on empathizing the needs of the community. In combinations of these supports, the team contributed to community awareness raising activities and materials mainly in collaboration with GoMP.

## 2.5.3 Marine Mammal Stranding Response Training

In 2022, a total of three marine mammals stranding response training were conducted in Baing Laung (Paung Township), Aung Kan Thar (Thaton Township) and Sut Pa Nu (Kyaik Hto Township). In total, 70 participants (Male = 47, Female = 23) participated in the three training sessions. In 2024, with the broader GoMP funded Community Engagement Program, a total of 6 marine mammal stranding response training and citizen science were conducted in Paung, Thaton, Chaung Sone, and Kawa Township with 287 participants in total (Male = 117, Female = 170). As part of the training, the marine mammal story books were also disseminated to the participants.



*Photo of Community-based Marine Mammal Stranding Response Training in Zee Gone village, Paung Township in 2024.*



*Photos of Marine Mammal Stranding Response Training in Aung Kan Thar village, Thaton Township (left photo) in 2022 and Ahlat village in Paung Township (right photo) in 2024*

Before conducting marine mammal stranding response training, we provided training and skill-building sessions to MCCL Local Conservation Groups (LCGs) who would lead citizen science training at the community level in Bago and Mon. A total of 10 LCGs and 6 LCGs members from Bago received coaching from MCCL at Point B. Following their training, these LCGs led community training sessions.

The training included the following 4 main themes which were delivered and disseminated by using interactive, participatory training methodology to ensure the participant understood the training concepts and its practices.

- Concepts of marine mammals (basic morphology and biology of marine mammal, the importance of conservation of marine mammals)
- Concepts of marine mammal stranding (types of strandings and causes of strandings)
- Good practices of stranding response, and
- Demonstration and simulated practice of a marine mammal stranding response.

According to the evaluation with the participants, the training supported to understand as follow:

- Understood the similarities between marine mammals and humans as well as differences with fishes.
- Developed greater knowledge of the importance of marine mammal conservation.
- Gained awareness of the causes of strandings.
- Familiarized with practices to avoid stranded animals through training and the demonstration.
- Demonstrated enthusiasm to participate in future intensive training and became more willing to support in marine mammal stranding events.

### **2.5.4 Marine Mammal Community Campaign**

As Part of community engagement, marine mammal campaign is crucial for conservation as it raises public awareness about the importance of these species and the threats they face, engaging communities and fostering their involvement in protective efforts. By educating people, campaigns help shift behaviors that harm marine ecosystems.

In 2023, the team conducted 6 marine mammal community engagement in six selected fishing communities: Tadar Oo, Khae Nan villages in Kawa Township in Bago region and Zee Gone, Aung Kan Thar, Wae Patan and By Laung village Paung and Chaung Sone Townships. A total of 545 adults (Male = 183, Female = 362) participated in the events. In 2024, with community youths from Local Conservation Group in community-led marine mammal program, the team conducted 2 marine mammal community campaign and citizen science. A total of 263 participants (Male = 73, Female =190) actively participated in the campaign. The purpose of the project was that the locals could take part in the awareness campaign for the very first time in their lives and were able to get access to the awareness of marine mammal conservation through fun and simple activities as follow:

- **Photo gallery:** showcased the different species of marine mammals in the GoM as well as visually presented the threats they are facing.
- **Skeleton and sample Exhibition:** display a dolphin skeleton can create an emotional connection, inspiring visitors to support marine conservation efforts and take personal action to protect marine environments.
- **Games and question answer activities:** provided fun games and interactive activities to understand the conservation threats and the needs of community participation for effective conservation.
- **Demonstration the stranding response:** participant can also take part in the demonstration and it is easy for them to remember how to response marine mammal and record information from the event for citizen science program.



*Photos of Community-led Marine Mammal Community Campaign Paung Township.*

As part of the campaign, the merchandised materials such as tote bags and T-shirts were provided as small gifts to the participants. According to the evaluation with the participants,

they became knowledgeable about the three cetacean species, the conservation threats to marine mammals and more interested in conservation activities.

Table# Marine Mammal Campaign completed in 2023-2024

### 2.5.5 CEPA Awareness

In addition, collaborating with broader GoMP funding, the team conducted CEPA Awareness session which included awareness raising about three marine mammal (key learning points included: type of marine mammal, its threat, and way to conserve) species in the Gulf of Mottama. The awareness raising about marine mammal in CEPA awareness session were conducted in 56 villages in 8 Township in Mon and Bago. A total of 3139 (Male = 939, Female = 2200) participated in the awareness session. The awareness was designed based on the community need, so the team designed one act play to demonstrate about marine mammals in the Gulf of Mottama to educate the public.



*Photo of Community facilitators demonstrate marine mammal one- act play to educate about marine mammals in the Gulf of Mottama.*

According to the evaluation with the participants, the training support to understand as follow:

- Understood the existence of three marine mammal species in the Gulf of Mottama
- Developed knowledge of the general characteristic of dolphins and porpoise
- Gained knowledge of the different between fish and marine mammal and its threats in the Gulf of Mottama.
- Learned the importance of marine mammal for ecosystem.
- Demonstrated enthusiasm to share marine mammal information and becomes interested to learn about marine mammal.

### 2.5.6 Marine Mammal Story Book for Community Awareness

In 2022, the MCCL team collaborated with Myanmar Ocean Project on a storytelling project: “Our Ocean, Our Home”. The MCCL supported a storyline for the project about marine mammals in the Gulf of Mottama. This collaboration resulted in raising awareness and

prompting conversation amongst Myanmar society regarding marine mammals and conservation issues surrounding them. The comic also included the MCCL and real local community members in the storyline highlighting the importance of local capacity for sustainable conservation efforts. These stories were published and available to users on [Myanmar Ocean Project Website](#), Our Ocean, Our Home Facebook Page and Myanmar School application in both Myanmar and English languages.



Photos of Marine mammal comic book (left) and story book (right)

Furthermore, MCCL youths have developed a story reflecting key messages from the fisher's experiences in the community based on local ecological knowledge interviews. The story was created in watercolor arts in collaboration with two women artists and follows experiences of a young boy called “Min Min” from a fishing community who is curious about the marine mammals in the Gulf of Mottama. Therefore, the readers are able to learn about the charisma, intelligence of marine mammals, their similarities with humans in terms of communication and social behaviors, and the importance of these animals in supporting local fisheries. This creative piece from youths applying design thinking helps the readers to emphasize the marine mammals and motivate them to participate in conservation initiatives.

The story books were then distributed to 71 villagers (majorly fishermen) from three coastal villages. The reaction from the fishers is very positive as their experiences were applied in producing inspirational and educational purposes. Moreover, this activity also provided invaluable opportunities for youths who contributed to the development of story books as they experienced to listen to the perspectives from communities, interpret as insights and finally articulate as a story through creative process.

### Key Achievements

- Nine marine mammal community campaigns were conducted in Mon and Bago regions, reaching a total of 846 participants from various communities, including fishers, youth, women, and students from these villages.
- Seven Local Conservation Groups (LCGs), along with local youths and CEPA facilitators, gained confidence and increased their awareness of marine mammals through active participation in the campaign.

- The team effectively communicates and builds trust with local communities in the hotspots of marine mammals which are essential for further conservation activities.
- Developed innovative ways to visually engage or communicate about conservation of marine mammals with local communities through story books. The stories were informed by the research and community knowledge so that they are more inclusive and participatory.
- The community campaigns piloted by MCCL youths highlight the importance of youths' participation in sustainable conservation and designing more innovative community awareness programs. The campaign raises the knowledge and conservation issues about marine mammals in the fishing communities.
- The marine mammal stranding response workshops in the communities informed the importance local participation in conservation and motivate them to respond future marine mammal stranding events safely and ethically.

### **Challenges and limitations**

- The communities especially men are very busy with livelihood activities in the fishing villages and therefore, it is challenging for the communities to committedly participate in the conservation activities.
- Regarding current political landscapes, the community events need approval from local authority such as General Administrative Department (GAD). In addition, the approval needs long process and it limited time to implement activities in the communities.
- Political conflict and military conscription law reduced youth resource in the team.

### **Key insights**

- Community should be center of the conservation and therefore active and meaningful participation of communities from different background and social class is essential. In order for them to participate effectively, both soft skills and conservation knowledge should be supported for them to motivate to engage in conservation
- Community needs incentives to commit to participate in conservation and therefore, the needs of the community should be assessed empathically and applied the needs in conservation planning.
- Integrating creative and interactive activities allow participants to participate in the campaign especially in group discussions.
- Create opportunities or roles for community youth to learn and participate in marine mammal outreach activities, encouraging greater involvement in marine mammal community engagement.
- Storytelling methods were especially effective in keeping participants engaged and helping them relate to marine mammal conservation efforts.
- Campaign reflection sessions encouraged open dialogue, allowing participants to share their thoughts and feelings about marine mammals, which helped shift mindsets towards conservation.
- Participants felt a deep connection to marine mammals, promoting empathy and a sense of ownership in conservation efforts.
- The marine mammal community campaigns and citizen science created a chance for the community to share insightful information about marine mammal ecological knowledge and raise their voice about marine mammal conservation.

## Recommendations

- Empower local youths by giving them leadership roles in future conservation outreach campaigns to enhance ownership and engagement.
- Use more interactive activities and hands-on opportunities to maintain engagement and improve understanding in villages where participants are less familiar with marine mammal conservation.
- Continue conservation outreach activities for strong community engagements so that community access knowledge and able to share about the marine mammal updates.
- Conduct regular marine mammal stranding response training in February, ahead of the peak stranding events in March and April, and to strengthen community engagement in the citizen science program to improve access to marine mammal stranding information.
- There is an opportunity to work with existing community-based organization in villages in GoM such as LCGs, and Fishery Development Association (FDA). Therefore, collaboration with such institutions should be extended.
- Continue collaboration with local conservation group (LCG) and village development committee (VDC), which are community-based organizations in the Gulf of Mottama (GoM), to expand and sustain outreach activities

## **2.6 Build conservation research and action skills among local youths through MCCL's community youth internship program. As part of larger GoMP-funded efforts, with this specific element to be funded through the SMM Conservation Fund.**

### **2.6.1 Method and Results**

In 2022-2023, 14 MCCL youths developed marine mammal conservation related research skills through seminars and training sessions provided by Dr.Tara Sayuri Whitty, Dr. Lousia Ponnampalam and the Marecet team, Point B, and senior staffs (see table 1). Additionally, there are 49 CEPA community facilitators, including 28 youths from Bago and Mon, were trained by the MCCL team under Point B Design + Training. They received training in facilitation skills to lead CEPA awareness sessions in the coastal villages of the Gulf of Mottama. These community youths applied their facilitation skills in CEPA awareness activities, which included raising awareness about marine mammals in the Gulf of Mottama (see table 3)

In 2024, MCCL @Point B recruited 7 community youths (who are from Local Conservation Group - LCGs) from Mon and 10 LCGs from Bago to work in community-led marine mammal conservation which is as part of larger GoMP-funded effort. MCCL@Point B supported those community youths soft and hard skills (see table 2) in order to work in marine mammal conservation research and outreach as part of the community-led marine mammal conservation activities. Working with community youths included the following process:

- Reviewed the backgrounds of community youths.
- Conducted informal interviews to assess their commitment and interest in marine conservation work within community-led initiatives.
- Selected community youths and provided an orientation on community-led marine mammal conservation activities.

- Conducted a Focus Group Discussion to assess skills and prioritize the ones they wanted to learn, aligning with conservation work especially in community engagement in marine mammal conservation
- Planned and scheduled skill-building activities, organizing monthly training sessions.
- Took them on field trips and assigned roles to apply the skills they learned from the training.
- Organized team meetings for feedback as part of the mentoring process.
- Held a co-creation workshop with them to co-develop plans for outreach activities such as campaigns and community trainings.



*Photos: Conducting Skill building trainings to community youths from local conservation group*

Table (1): Skill seminar for MCCL youths in 2022-2024

<b>Trainer</b>	<b>Topic</b>	<b>Key Outcomes</b>
Dr. Tara Sayuri Whitty	General good practices for research Basic Ecosystem ToT trainings System thinking for marine conservation Online research search	<ul style="list-style-type: none"> <li>- Understood the whole process of research (writing proposal, research design, field data collection, analysis, and reporting) so that more confident to participate in diverse research activities.</li> <li>- Developed concrete knowledge on Ecosystem.</li> <li>- Experienced the importance of system</li> </ul>

Trainer	Topic	Key Outcomes
		thinking in considering the connection within social-ecological systems so that the participants better designed human-centered conservation interventions for marine mammal conservation with communities
MereCet	ToT for marine mammal stranding response Bio-acoustician	<ul style="list-style-type: none"> <li>- Understood the basic concept of marine mammal science.</li> <li>- Learned basic concept of marine mammal stranding.</li> <li>- Designed the stranding response training and conducted the trainings in three coastal villages</li> </ul>
Nick Tregenza	Data analysis training for finless porpoise acoustic monitoring	<ul style="list-style-type: none"> <li>- Learned the process of acoustic data analysis</li> <li>- Able to use software and practice the data analysis</li> </ul>
Dr.Louella Dollar	Line transects survey & Distance Sampling data analysis skill buildings	<ul style="list-style-type: none"> <li>- Understand the concept of line transect boat survey and why it is important</li> <li>- Learned distance sampling method and data analysis for population estimate</li> <li>- Able to practice data analysis</li> <li>- Practice Distance software for data analysis</li> </ul>
MCCL	Line-transect survey Skill building to MCCLs. Acoustic. Marine Mammal Social Media Search skill building Data management skill building Research paper reading Water safety training	<ul style="list-style-type: none"> <li>- Understand the concept of boat survey</li> <li>- Able to practice survey equipment, and note taking.</li> <li>- Learned how to manage data and practice data analyzing</li> <li>- Learned from others research and improved in reading skill</li> <li>- Learned basic method of how to stay safe in the water</li> <li>-</li> </ul>

Table 2. MCCL @ Point B facilitated action skill to 49 community people in CEPA Program

<b>Trainer</b>	<b>Topic</b>	<b>Key Outcome</b>
MCCL@ Point B	Marine Mammal Conservation Orientation and Boat Survey Skill Building	Understand the basic concept of Marine mammal science. Learned line transect survey to conduct field activity and applied the skill and knowledge in field survey in Zee Gone. Practically trained in using survey equipment and learned device management. Learned observation and note taking skills.
MCCL@ Point B	Team Building Training for Community-led Marine Mammal Conservation	Focused on team-building exercises to enhance collaboration among LCG members for community-led conservation efforts. Able to identify their individual values and developed team values to work as a team.
MCCL@ Point B	LCG Community Training for Personal Development and Soft Skills	Understand bias and learned how to build trust for working with their community, how to keep learning throughout their life (life-long learning), and how to be mindful for their personal growth and in working with community.
MCCL@ Point B	Skill building for Leadership and community engagement	Learned leadership skills, collaboration, communication, empathetic listening skills through experiential learning activities to be able to engage with community. Built a strong team and learn how to coordinate the community in conservation activities. Understand good practice for working with community. Understand community engagement method.
MCCL@ Point B, IUCN	Community Training for Marine Mammal Stranding Response Lesson Planning and Citizen Science**	Understand the basic Marine Mammal stranding response and citizen science process. Able to discussed and develop goal and objectives of the training in the community. Ideated new ideas, provides suggestions, discussed the challenges and opportunities for the citizen science program.
MCCL@ Point B	Skill building training for marine mammal Campaign Lesson Planning and Citizen Science	Learned the basic concept of campaign activity. Able to review data from campaign assessments

from co-creation workshop with fishing community. Able to develop goal and objectives for the campaign and co-created campaign plan.

Table 3. MCCL @ Point B facilitated action skill to 49 community people in CEPA Program

Year	#CEPA Facilitator	Topic	Outcomes
2023	49	CEPA ToT Training including Marine Mammal Conservation	Learn and understand basic marine mammal science concept, able to facilitate marine mammal concept in the community by demonstrated in one act play.

### Key Achievement

- Fourteen MCCL youths were trained in various research skills and conservation activities. Eight young researchers were contracted part-time and full-time in 2022 and five of them were continuing to support conservation activities in 2023 as conservation and research associates, two of them were contracted as main staff under Point B Design + Training, to support in marine mammal research and outreach project activities up to 2024. In addition, two MCCL alumni were contracted as conservation researcher in 2022 and one MCCL conservation intern contracted as conservation intern in 2023 to support in marine mammal research and outreach activity.
- Seven community youths from Mon State were intensively trained and apply their skills in marine mammal line transect surveys, marine mammal stranding response and citizen science training, marine mammal community campaign.
- Five community youths that we trained received youth biodiversity conservation grant which is funded by GoMP.
- Community youth able built trust with their community and they got informed by the stranding event and they manage stranding response event in their area, able to record stranding data for citizen science program
- Community youths become more interested and have strong commitment in performing their effort in marine mammal research and community engagement.
- Community youths become more confident and improved communication, facilitations, and community engagement skill.

### Challenges and Limitations

- Political conflict such as military conscription law impacted in youth involvement and local travelling, implementing conservation activities could be risky under the military conscription law.
- The pandemic and political situation limited the in-person engagement and activities with youths. Therefore, the engagements were only via online platform in 2022.

- Due to current political transition, the younger generations are in crisis especially in accessing education (including university) as higher proportion of the youths are participating in civil disobedient movements. In such cases, it may be challenging to motivate youths to participate in conservation activities.
- From the perspectives of youths, there is very few opportunities or job security to extend and/or invest in conservation related trainings and practical experiences.
- Political conflict such as military conscription law impacted in youth involvement and local travelling, implementing conservation activities could be risky under the military conscription law.
- Community youth have busy schedule with their livelihood works and some schedules are need to adjusted according to their schedule.
- Coordination with VCD: Difficulty in following up with the VDC chairperson due to a busy schedule led to delays in community engagement.
- Limited or lack of full-time job opportunity for community youths in marine mammal conservation field is a barrier for them to hold their skills and continue the conservation activity in the future.
- Budget limitation is a barrier to organize training in town, most of the training were conducted in the villages with the space limitation.

## Key Insights

- The inclusive and meaningful participation of youths in conservation is essential. However, youths in the community are still limited in practical skills and knowledge to involve in conservation activities.
- Job opportunities and career security in the conservation field remain challenging for youths the region. To enhance their motivation to learn and apply skills and knowledge in conservation, more job opportunities dedicated to early graduates and community youths are necessary. Even though the community youths have skills and interest to work in conservation field, if there is no job opportunity for them, it is difficult to sustain their skills for long tern conservation
- Community youths' involvement have strong impact on marine mammal conservation research and outreaches activities as they have strong connection with the community and able to engage community people well.

## Recommendations

- Provide more training on marine mammal species in the Gulf of Mottama: Many LCG members have limited knowledge about marine mammals, so continuous skill-building sessions will improve their capacity to contribute effectively.
- Continue the MCCL Internship program especially with community youth by providing part-time or full-time job opportunities for underprivileged youths to participate in the conservation activities.
- The trainings and capacity building should also extend to wider youths. Alternative design and channels to involve more disadvantaged youths are recommended.
- Support conservation grants to community youths motivate them and sustain their skills
- Focus on community values and sustainable involvement: Conduct team-building sessions that emphasize identifying the personal values of LCG members. This will ensure greater commitment and long-term engagement in conservation efforts.

- Strengthen community-based monitoring efforts: Build on the success of the community-based conservation workshops by expanding long-term monitoring initiatives in marine mammal hotspot areas to ensure more effective conservation action.
- Develop conservation research skill training program for community youths

### 3. CONCLUSION

From 2018 to 2024, the project was conducted to survey marine mammal populations in the Gulf of Mottama (GoM) through boat-based and systematic line transect surveys in Zee Gone, Chaung Zone Township, as well as local ecological knowledge and rapid bycatch assessment interviews in 11 coastal villages. The project recorded a total of 230 sightings and identified small-scaled fishing as the main threat to marine mammals through bycatch events using drift net, set bag net, and gill net. Bycaught dolphins and porpoises were consumed as a delicacy, particularly in Paung Township. Despite the threats, the study showed that the majority of the sample population recognized the need for conservation of marine mammals. With the funding of the Marine Mammal Society (2022 – 2024) the finless porpoise acoustic monitoring program was able to start in the early of 2023 and early 2024. The study is still in the process and the result will be reporting in December.

The project also engaged with local communities in research activities and integrated community-led marine mammal conservation activities including; marine mammal stranding response training, marine mammal community campaigns, citizen science program, community youth empowerment and developing educational materials, to motivate communities to participate in conservation activities. This approach involved youths in the MCCL organization who were trained in research skills and knowledge in conservation and provided opportunities to participate in hands-on activities through the MCCL internship program and career advancement program. With the support from the Society of Marine Mammalogy, we were able to broader our research activities and community engagement.

## SMM Conservation Fund Budget

Budget Item	Proposed Expenditures (U.S.Dollars)	Actual Expenditures (U.S.Dollars)	Details and Comments
<b>Personnel*</b>			
Primary Investigator	<b>2,000</b>	<b>1,173.63</b>	For Yin Yin Htay; Wint Hte's salary to be covered by other sources
Staff salary/contract 1	<b>3,600</b>	<b>532.63</b>	Zun Pyae Oo working 2022 April until to December 2022.
Staff salary/contract 2		<b>687.06</b>	Zun Pwint Oo working 2022 April until to December 2022.
Staff salary/contract 3		<b>1,387.57</b>	Moe Kyaw Kyaw Hein working 2023 January until to year 2024.
Staff salary/contract 4		<b>878.03</b>	Su Su Maw working 2023 January until to year 2024.
Staff salary/contract 5		<b>1,034.48</b>	Thae Eindra Hsu working 2023 January until to 2023 December.
<b>Equipment (&gt; \$1000 US)</b>			
FPOD (x3) shipping and taxes	<b>1,500</b>	<b>601.90</b>	The taxes to be levied are uncertain; the FPODs will be listed as a donation, but this does not ensure low tax charges. We anticipate that the costs will be lower than this
<b>Supplies</b>	<b>1,000</b>	<b>703.19</b>	Interview materials, workshop and training supplies, campaign materials
<b>Travel</b>			
Interview Field Trips (est.40)	<b>2,800</b>	<b>2,025.90</b>	Includes transportation costs (bus, car, motorbike, boat) and DSA (meals and accommodations) according to GoMP cost norms
Community engagement trips and workshops	<b>2,800</b>	<b>2,840.00</b>	Includes transportation costs (bus, car, motorbike, boat) and DSA (meals and accommodations) according to GoMP cost norms
Rental N/A			
Publication costs N/A			
<b>Publication costs</b>	<b>1,300</b>		For open access publishing of 1 peer-reviewed article
SUB TOTAL	<b>15,000</b>	<b>11,864.39</b>	
Management fee 7%		<b>830.51</b>	
<b>TOTAL COST</b>	<b>15,000</b>	<b>12,694.90</b>	