14.3.1. Creating Spaces for Aquatic Conservation Dialogue

Introduction

Effective aquatic conservation depends not only on scientific evidence and environmental regulations, but also on sustained dialogue among researchers, managers, government agencies, and the communities who depend on aquatic resources. Scientific findings can inform decisions when those responsible for conservation have opportunities to discuss them, raise concerns, and identify priorities for coordinated action.

During Academic Year 2024–2025, Davao Oriental State University (DOrSU) facilitated and participated in engagements that connected aquatic science with protected-area governance. These included hosting the 56th convention of the Federation of Institutions for Marine and Freshwater Sciences (FIMFS), communicating artificial reef monitoring results to the Pujada Bay Protected Landscape and Seascape (PBPLS) Special Protected Area Management Board (PAMB), and participating in the first provincial PAMB Summit in Davao Oriental.

The following accounts document these knowledge-sharing activities alongside a peer-reviewed study on marine protected-area effectiveness. Together, they illustrate DOrSU's contribution to creating forums where science, institutional experience, and community perspectives can inform conservation discussions. The documented achievements are convening, research communication, and stakeholder engagement; the eventual adoption of policies or measurable ecological outcomes requires separate evidence.

Bringing Aquatic Science Into a Shared Conversation

From October 22 to 24, 2024, DOrSU, through its Regional Integrated Coastal Resource Management Center XI (RIC-XI), hosted the 56th FIMFS Convention in the City of Mati. The three-day event brought together scientists, university representatives, government stakeholders, and conservation practitioners to exchange findings and perspectives on the protection and management of aquatic ecosystems.

The program addressed sustainable fisheries, marine biodiversity, 3D artificial clay reef systems, reef fish diversity and biomass, plastic pollution, blue carbon, and integrated lake-basin management. Presentations included Hanna Kuhfuss's discussion of 3D clay reef systems; Cleto L. Nañola Jr.'s presentation on reef fish diversity and biomass; Adelina C. Santos-Borja's discussion of science in integrated lake-basin management; and Deo Florence L. Onda's perspectives on plastic pollution in the Philippines (DOrSU PIO, 2024; CCEF, 2025).

By placing marine and freshwater questions within a common scientific forum, the convention encouraged participants to consider how habitat condition, fishing pressure, pollution, and watershed management are connected. It gave researchers and practitioners an opportunity to compare approaches, identify knowledge gaps, and establish professional contacts relevant to future conservation work. The convention itself documents knowledge exchange, not the completion of follow-up projects or implementation of specific management changes.



Figure 1. Opening activities during the 56th FIMFS Convention hosted by DOrSU in Mati, October 22–24, 2024. Photo credit: DOrSU–Public Information Office.

References

Davao Oriental State University, Public Information Office. (2024, November 4). DOrSU hosts FIMFS convention in Mati to advance fisheries and integrated marine studies. https://dorsu.edu.ph/dorsu-hosts-fimfs-convention-in-mati-to-advance-fisheries-and-integrated-marine-studies/

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Taking Reef Evidence to the People Who Manage the Bay

On July 23, 2025, DOrSU hosted the PBPLS Special PAMB meeting at the University Boardroom. During the meeting, rrreefs co-founder Hanna Kuhfuss presented monitoring findings from the artificial clay reef initiative in Pujada Bay. By bringing project observations into a protected-area governance forum, the engagement connected restoration research with stakeholders responsible for considering conservation priorities in the bay.

According to the results presented, coral recruitment on the artificial structures rose from 13 to 34 recruits per square meter within five months. After approximately one year, about 4,000 coral recruits were estimated to have colonized the 100-square-meter structure. The presentation also reported increases in fish numbers and biomass around the reef. These are project monitoring observations, rather than proof of long-term, bay-wide ecosystem recovery (DOrSU PIO, 2025; Oblianda, 2025).

The meeting addressed updates on existing artificial reef installations, possible additional deployment sites, and community involvement, including initial insights from a consultation in Barangay Tamisan. Participants also visited DOrSU's 3D Clay Bricks Fabrication Facility and RIC-XI to learn about the

university's technical and production capabilities. These interactions gave managers an opportunity to examine the evidence and practical requirements behind proposed restoration activities.

The immediate institutional contribution was communication: ecological monitoring results were shared with a management body, and researchers, agency representatives, and conservation partners had a venue to discuss proposed directions. Planned expansion should be distinguished from completed deployment, and the long-term ecological benefits of the structures require continued monitoring.



Figure 2. Hanna Kuhfuss presents artificial reef monitoring findings during the PBPLS Special PAMB meeting at DOrSU on July 23, 2025. Photo credit: DOrSU–Public Information Office.

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Davao Oriental State University, Public Information Office. (2025, July 23). Marine life booms in Pujada Bay after artificial reef installation. https://dorsu.edu.ph/marine-life-booms-in-pujada-bay-after-artificial-reef-installation/

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Connecting Conservation Research With Protected-Area Governance

DOrSU joined the first provincial Protected Area Management Board Summit held on November 21–22, 2024, in the City of Mati. Organized by the Provincial Environment and Natural Resources Office–Davao Oriental in collaboration with the Eastern Mindanao Biodiversity Corridor (EMBC) Project, the summit brought together stakeholders involved in protected-area conservation and governance.

DOrSU President Dr. Roy G. Ponce presented the university's conservation-related research and partnerships, emphasizing the role of research institutions in providing evidence for environmental planning. Assistant Professor Jhonnel P. Villegas delivered a talk on human–wildlife interactions, cultural sensitivities, and perspectives influencing the conservation of the Philippine brown deer, drawing attention to Mandaya Indigenous knowledge and values (DOrSU PIO, 2024).

The summit focused principally on protected landscapes and their governance, rather than solely on marine or freshwater areas. Its relevance to aquatic conservation lies in promoting coordination across connected ecosystems: upland management can affect downstream rivers, sediment movement, and coastal environments. The event also demonstrated how scientific perspectives and community knowledge can be discussed together within conservation planning.

The documented outcome was DOrSU's participation in a provincial forum and the exchange of research and cultural perspectives with protected-area stakeholders. The available record does not establish that a new management policy or aquatic conservation plan was adopted at the summit.



Figure 3. Dr. Roy G. Ponce shares conservation research and institutional perspectives at the first provincial PAMB Summit, November 21–22, 2024. Photo credit: DOrSU–Public Information Office.

References

Davao Oriental State University, Public Information Office. (2024, November 26). DOrSU shares insights at the first-ever PAMB Summit 2024. https://dorsu.edu.ph/dorsu-shares-insights-at-the-first-ever-pamb-summit-2024/

Research That Gives Conservation Dialogue Substance

Dialogues about marine conservation are stronger when participants can draw on research that evaluates how protected areas are managed and identifies the problems managers and coastal communities encounter. A 2025 study by Maria C. Galveia and Edison D. Macusi, published in Marine Policy, provides a relevant scientific contribution from the DOrSU research community.

The researchers evaluated four marine protected areas in Mati, Mabini, San Isidro, and Lupon, involving 12 villages. They combined the Marine Protected Area Management Effectiveness Assessment Tool (MEAT) with focus group discussions to examine both management scores and the experiences of local fishers. All four MPAs received excellent overall MEAT scores, yet none attained Level 3 ("Sustained") effectiveness.

The study identified weaknesses in enforcement, funding, and training as important challenges (Galveia & Macusi, 2025).

These findings offer specific questions for conservation conversations: how can enforcement become more consistent, how should management resources be allocated, and how can fishers' knowledge be incorporated into implementation? The published results can inform discussions by agencies, local governments, and protected-area managers. However, publication of the study does not by itself establish that its recommendations were formally adopted or implemented during the reporting year.

The study complements the university's documented meetings by showing the value of pairing forums for dialogue with peer-reviewed, site-relevant evidence. Its contribution is an improved knowledge base for future conservation planning, not a documented change in management effectiveness caused by the publication.

Marine Policy xxx (xxxx) 106596

Contents lists available at ScienceDirect

Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Full length article

Management effectiveness of marine protected areas (MPAs) in the Southeastern Mindanao, Philippines

Maria C. Galveia[a,b], Edison D. Macusi[b,*]

[a] International Master in Marine Biological Resources Program (IMBRSEA), University of Ghent, Ghent, Belgium
[b] Faculty of Agriculture and Life Sciences, Davao Oriental State University (DOrSU), Mati, Davao Oriental, Philippines

ARTICLE INFO

Keywords:
Davao Gulf
Food security
Mati
MPA
Small-scale fisheries

ABSTRACT

The increasing threats to marine ecosystems underscore the urgent need for effective conservation strategies. Marine Protected Areas (MPAs) serve as critical tools for safeguarding these ecosystems, shielding them from human-induced pressures. If well managed, these areas have the potential to increase ecosystem resilience and have positive impacts on their surrounding communities. This study will investigate the management effectiveness of four MPAs in the Southeastern Mindanao, Philippines. To do this the MPA Management Effectiveness Assessment Tool (MEAT) was used followed by focus group discussions (FGDs). Four municipalities (Mabini, Lupon, San Isidro, Mati) and a total of 12 villages were studied. All MPAs had an excellent rating in their overall MEAT score, however, none of the MPAs were able to achieve the necessary thresholds to reach effectiveness level 3 (Sustained). The main management challenges identified were poor enforcement, limited funding, and lack of training. MEAT results do not appear to show the whole picture as, during the FGDs, fishers revealed several challenges and recommendations of each MPA. This project provided several recommendations that can serve as a baseline for the MPAs to improve both its ecological and social systems.

1. Introduction

Marine ecosystems are increasingly threatened by various anthropogenic stressors, leading to a decline in ocean health. Ocean conservation is a growing priority with marine protected areas playing a crucial role in safeguarding these ecosystems [1–4].

Marine protected areas (MPAs) are globally defined by The International Union for the Conservation of Nature (IUCN) as, "Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment" [3]. Their objective is to protect biodiversity by alleviating anthropogenic pressures on marine ecosystems. They facilitate the existence of habitats in a more natural condition, acting as nurseries and sanctuaries for reef species populations to prosper [2–4]. If well-managed, MPAs have the potential to act as a buffer to species loss and enhance the ecosystems' health [1,2]. Boosting fish populations as an outcome of the MPA, will result in spill-over effects to its adjacent waters. This can also result in social benefits to their surrounding communities. The reallocation of fishing efforts creates an opportunity to mitigate competition among fishers. At the same time, alternative livelihood programs can decrease the fishing pressures in the area [4–6]. Nonetheless, MPAs can intensify negative effects on biodiversity. Failure to consider the requirements of local communities in MPA management often motivate fishers to ignore regulations. This can result in the further use of illegal methods that are unsustainable, leading to overexploitation [5,7,8].

There are over 1800 MPAs in the Philippines database [9] however not all are well-documented or regulated [10,11]. They can be divided according to their governance levels: National Integrated Protected Areas System (NIPAS) or Municipal and City (locally managed) [11–13]. Protected Landscape and Seascape areas are national parks that fall under NIPAS and as the name states, include both marine and terrestrial ecosystems [12]. NIPAS are considerably less in number, but with higher coverage (28 MPAs covering 14,500 km^2). While locally managed MPAs are far more in number, but with reduced coverage (1600 MPAs covering 240 km^2) [12,13].

The placement of the MPAs in the country reveals the absence of a more comprehensive representation of marine biodiversity [14]. MPAs in the country only encompass approximately 3.4 % of the country's total coral reef area, representing the lowest percentage of protected area

* Corresponding author.
E-mail addresses: maria.galveia@imbrsea.eu (M.C. Galveia), edison.macusi@dorsu.edu.ph (E.D. Macusi).

https://doi.org/10.1016/j.marpol.2025.106596
Received 2 November 2024; Received in revised form 13 January 2025; Accepted 13 January 2025
0308-597/© 20XX

Note: Low-resolution images were used to create this PDF. The original images will be used in the final composition.

Figure 4. Publication: Galveia and Macusi (2025), Marine Policy, Volume 174, Article 106596; DOI: 10.1016/j.marpol.2025.106596. This is a bibliographic record, not an event photograph.

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Galveia, M. C., & Macusi, E. D. (2025). Management effectiveness of marine protected areas (MPAs) in the Southeastern Mindanao, Philippines. Marine Policy, 174, Article 106596. https://doi.org/10.1016/j.marpol.2025.106596

Scopus publication record (supplied citation register): https://www.scopus.com/pages/publications/85215373366?origin=resultslist

Conclusion

DOrSU's work illustrates the value of creating sustained opportunities for researchers, managers, conservation organizations, government agencies, and communities to discuss aquatic ecosystem protection. The 56th FIMFS Convention brought marine and freshwater science into a common forum; the PBPLS Special PAMB meeting connected reef-monitoring findings with protected-area decision-makers; and the provincial PAMB Summit broadened the discussion to landscape governance, scientific knowledge, and Indigenous perspectives.

The peer-reviewed study on marine protected-area management effectiveness adds substance to these engagements by identifying strengths and weaknesses that can inform conservation priorities. Across the activities, the university's documented contribution was to convene, participate in, and provide evidence for conservation dialogue. Long-term ecological improvements, formal adoption of recommendations, and management outcomes require additional records and assessment.

By maintaining these channels for knowledge exchange and institutional collaboration, DOrSU helps strengthen the basis for coordinated, evidence-informed stewardship of aquatic and connected ecosystems in southeastern Mindanao.