Understanding marine protected areas and the ASEAN ENMAPS Project

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Imagine the ocean as a bustling, vibrant city, with marine protected areas (MPAs) serving as its green parks—safe havens where marine life can thrive, sheltered from human activity.

But these are not just any parks. MPAs are vital for keeping the ocean healthy and balanced, acting as nature's way of protecting and nurturing its wildlife.

MPAs offer real, everyday benefits that go beyond protecting fish. They help in food security by supporting fish populations, allowing them to grow and reproduce. They provide a steady supply of larvae to replenish marine species. They also act as nurseries nurturing newly settled juveniles dispersed from elsewhere.

MPAs also safeguard marine gene pools, protecting biodiversity that could be vital for future generations. In addition, they create ecotourism opportunities, giving local communities a chance to earn income while preserving the environment. And by reducing overfishing and discouraging harmful fishing practices, MPAs help to keep the oceans in balance.

In short, MPAs are much more than ocean parks—they are vital lifelines, keeping our seas, marine wildlife, and coastal communities thriving.

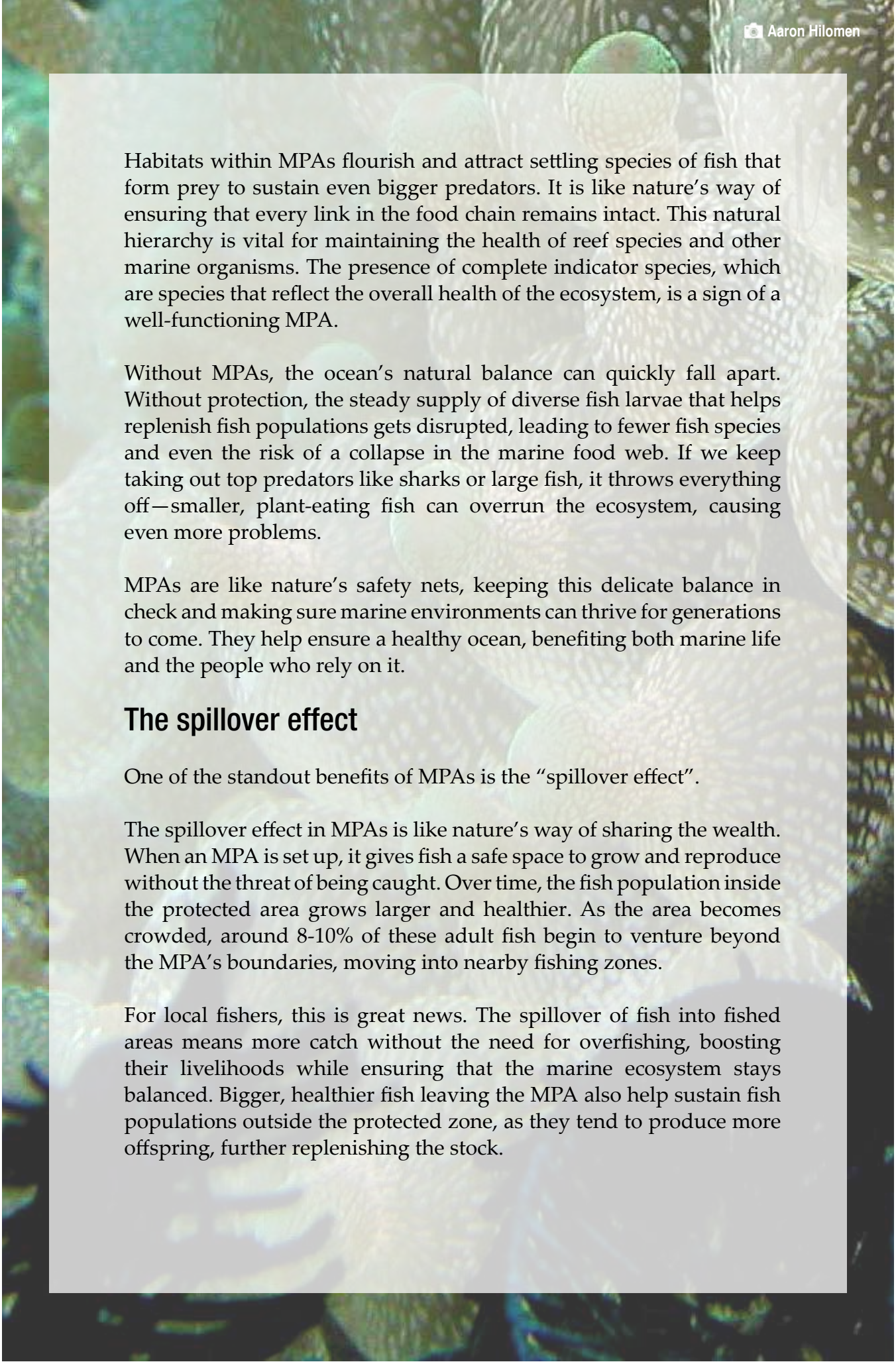
Muko Similan National Park
Roderick Eime

What are marine protected areas?

Marine protected areas (MPAs) are specially designated zones within the ocean or along coastlines. They are established through legal mechanisms such as municipal ordinances, where human activities like fishing, drilling, and other potentially harmful practices are restricted or regulated. These zones allow marine ecosystems to function naturally, providing a safe haven for species with high habitat fidelity—those that remain in specific areas—to flourish.

Most MPAs are established because of their high biodiversity value, have a potential to recover and reach a balanced state, albeit a few are often declared at a time when the area has already been quite degraded but are strategically located. Some are established because they need to be preserved as they still have complete ecosystems, where all layers of the marine food web are intact.

In MPAs, every part of the marine food web gets a chance to thrive. Young fish can grow into healthy adults, helping to boost the population and ensure there is a steady supply of fish larvae to replenish other MPAs and nearby habitats. These protected areas serve as nurseries, keeping the ocean ecosystem strong and balanced for future generations. Looking ahead, MPAs may become the last functional marine ecosystems near human populations—providing a vital refuge for marine life and a chance for the ocean to heal and thrive in the face of growing environmental pressures.



Habitats within MPAs flourish and attract settling species of fish that form prey to sustain even bigger predators. It is like nature's way of ensuring that every link in the food chain remains intact. This natural hierarchy is vital for maintaining the health of reef species and other marine organisms. The presence of complete indicator species, which are species that reflect the overall health of the ecosystem, is a sign of a well-functioning MPA.

Without MPAs, the ocean's natural balance can quickly fall apart. Without protection, the steady supply of diverse fish larvae that helps replenish fish populations gets disrupted, leading to fewer fish species and even the risk of a collapse in the marine food web. If we keep taking out top predators like sharks or large fish, it throws everything off—smaller, plant-eating fish can overrun the ecosystem, causing even more problems.

MPAs are like nature's safety nets, keeping this delicate balance in check and making sure marine environments can thrive for generations to come. They help ensure a healthy ocean, benefiting both marine life and the people who rely on it.

The spillover effect

One of the standout benefits of MPAs is the "spillover effect".

The spillover effect in MPAs is like nature's way of sharing the wealth. When an MPA is set up, it gives fish a safe space to grow and reproduce without the threat of being caught. Over time, the fish population inside the protected area grows larger and healthier. As the area becomes crowded, around 8-10% of these adult fish begin to venture beyond the MPA's boundaries, moving into nearby fishing zones.

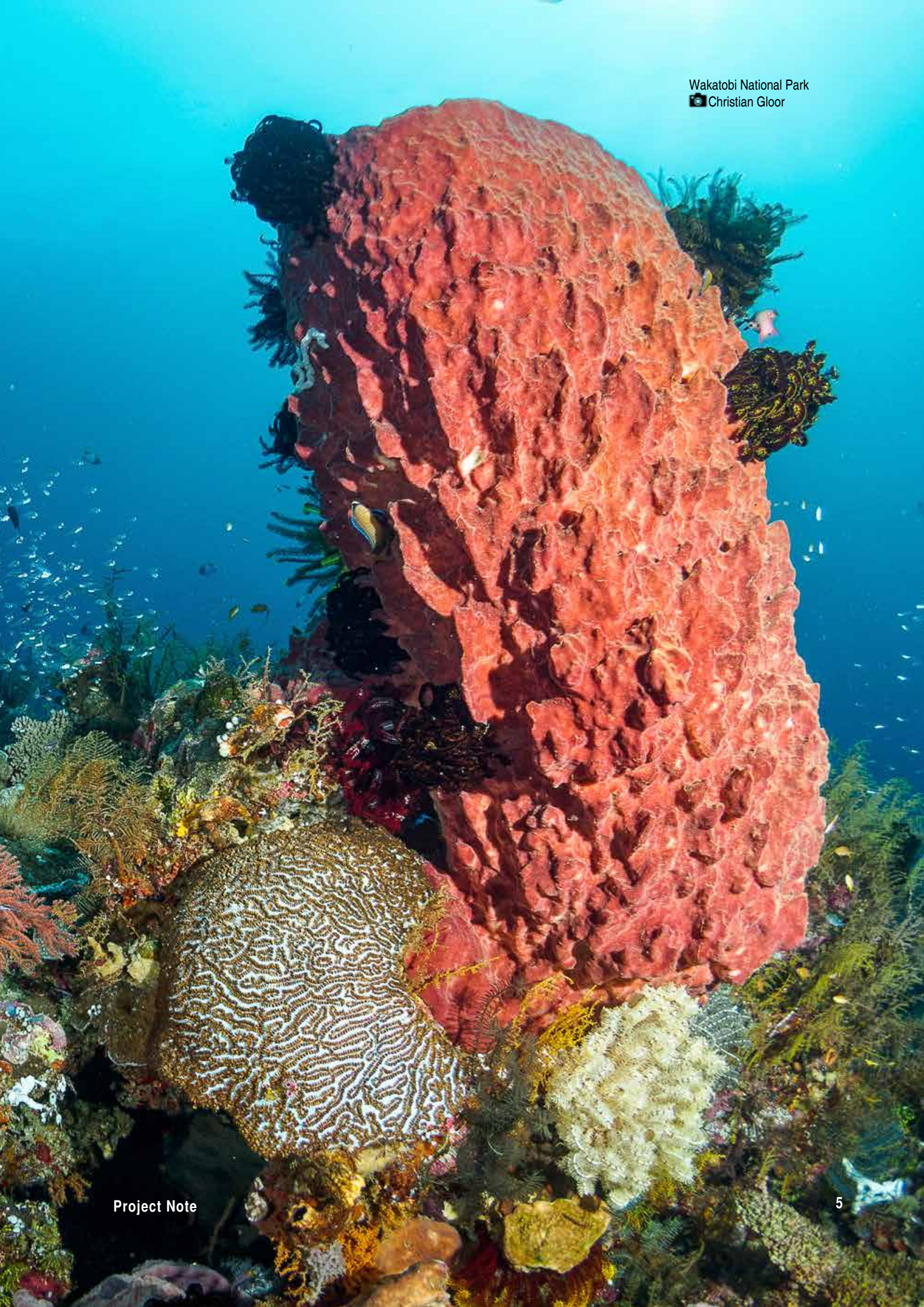
For local fishers, this is great news. The spillover of fish into fished areas means more catch without the need for overfishing, boosting their livelihoods while ensuring that the marine ecosystem stays balanced. Bigger, healthier fish leaving the MPA also help sustain fish populations outside the protected zone, as they tend to produce more offspring, further replenishing the stock.

In short, MPAs do not just protect marine life inside their borders—they also benefit nearby fisheries by supplying them with more fish, making it a win-win solution for both conservation and the people who rely on the sea for their living.

However, MPAs do not mean that all fishing is off-limits. Instead, they are divided into zones with specific rules tailored to different activities—such as research, small-scale fishing, and recreational diving. This zoning is designed in collaboration with local communities, ensuring that conservation goals are met while still supporting local livelihoods.

ASEAN ENMAPS: Expanding the vision

The project *Effectively Managing Networks of Marine Protected Areas in Large Marine Ecosystems in the ASEAN Region (ASEAN ENMAPS)* of the ASEAN Centre for Biodiversity (ACB) takes the concept of MPAs to a new level by focusing on developing interconnected networks of MPAs. This approach builds on existing MPAs but aims to enhance their effectiveness by linking them together based on connectivity studies and fishery studies. These studies help to identify areas where the settlement and spillover effect is most beneficial, allowing for better conservation of these crucial zones.



Wakatobi National Park
Christian Gloor

Think of it like investing in a larger savings account to yield more interest: by expanding and connecting MPAs, we ensure that the benefits of marine conservation are more widespread and impactful. ASEAN ENMAPS begins with established MPAs and looks to broaden the conservation by creating a network that supports a larger, more resilient marine environment.

The design of these networks involves detailed consultations with local stakeholders and communities. This collaborative approach helps to determine how much area can be temporarily restricted from fishing, balancing immediate needs with long-term benefits. The larger the protected area, the more diverse the habitats that can be safeguarded, including vital seagrass meadows, coral reefs, and mangroves.

The importance of habitats

Seagrasses, for instance, play a multi-faceted role in marine ecosystems. They not only provide food and shelter for marine animals but also help protect coastlines from storm surges to a certain extent. Moreover, seagrass beds serve as crucial nurseries for baby fish, while their leaves support the growth of algae known as epiphytes, which are a food source for various marine organisms.

Mangroves, with their tangled roots, offer protection and shelter for many marine species, further enhancing the health of marine ecosystems. Mangroves serve as nurseries and feeding grounds to a wide array of marine species. Moreover, many fish species need the coral reefs, seagrass beds and mangroves during their ontogenetic habitat shifts as well as during their daily movements as adults to these sites to feed. By including these important habitats in MPAs, ASEAN ENMAPS ensures that the ocean's intricate web of life is preserved.

A brighter future for the ocean

The ASEAN ENMAPS Project is not just about creating isolated MPAs, but about developing a cohesive network that maximises the benefits of marine conservation. By linking MPAs and enhancing their management, the project aims to foster a more robust and resilient marine environment. This interconnected approach ensures that our marine ecosystems in the ASEAN region remain vibrant and full of life, supporting both marine ecosystems and the communities that rely on them.

In summary, ASEAN ENMAPS revolutionises marine conservation by thinking big and acting strategically. It is about creating networks of MPAs that ensure the long-term health of our oceans and the sustainability of marine resources. With initiatives such as these, we can look forward to a future where our oceans continue to thrive, benefiting both marine life and human communities.

This article is based on the presentation of Dr. Sheila G. Vergara, ASEAN ENMAPS Project Manager and Chief Technical Adviser, during the MIMAROPA Economic Development Committee Meeting on 1 August 2024.

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ASEAN ENMAPS is a regional initiative designed to enhance the management of networks of marine protected areas and marine corridors within selected Large Marine Ecosystems in Indonesia, the Philippines, and Thailand. It has 11 pilot sites within the four Large Marine Ecosystems of Bay of Bengal, Indonesian Sea, South China Sea, and Sulu-Celebes Sea. The project is implemented by UNDP through the funding of the Global Environment Facility, and with the ACB as the executing agency.

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