



BLUE MARINE
FOUNDATION

MALDIVES CASE STUDIES

BLUEPrint for Marine Protected Areas:
A guide to establishing and managing MPAs

INFORMATION: BASELINE MONITORING

Laamu Atoll, Maldives: Collecting baseline data and strengthening local capacity for resource management in a cost- effective manner in partnership with research institutions and the private sector

In 2019, Blue Marine and other members of the Maldives Underwater Initiative based at Six Senses Laamu, conducted baseline surveys of selected coral reef, seagrass, and mangrove sites on Laamu Atoll. One of the main challenges working in the Maldives is the lack of information that is publicly available about the country's marine ecosystems. As the country is also so vast and remote, boat transport costs are extremely high. Local islands in the Maldives are still very basic with little resources available. Partnerships with tourism resorts support

conservation and research efforts because of the resources available at these sites (e.g. boats, personnel). Partnering with the Maldives Underwater Initiative is incredibly beneficial as it provides increased manpower to do the underwater surveys, which can require up to six team members. Partnering with university institutions offers a further cost-effective way to conduct research and get results published in a digestible report. Blue Marine covered field costs for master's level graduates from the UK to conduct projects and partnered them up with Laamu Atoll residents to conduct field work. This also helps to build local capacity through training and knowledge exchange. Master's students from UK universities repeated these monitoring surveys in 2022 and compared them with the existing baselines and some interesting preliminary results were shown. Three of these projects are currently being collated into a biodiversity baseline report for Laamu Atoll.

Blue Marine's Maldives team conducting a survey of a seagrass meadow on Laamu Atoll. Image by Jason Boswell.



INFORMATION: DATA COLLECTION

Maldives: Working in partnership with the Government to collect data to guide MPA designation

Blue Marine began working in the Maldives in 2016 to help the Government to better manage the commercial export grouper fishery. One of the main goals of this project was to identify where groupers were aggregating to spawn so that these sites could be protected.

In partnership with the Ministry of Fisheries, Marine Resources and Agriculture (MoFMRA), and the Laamu Atoll Council, Blue Marine interviewed 117 grouper fishers on Laamu Atoll. The support of the local and national government was critical to the success of interviews; local councils helped to identify grouper fishers on each of the eleven inhabited islands on Laamu Atoll. Blue Marine interviewed fishers about the catch and size of groupers caught over thirty years, the location and timing of spawning aggregations, their awareness of regulations and we asked them what management measures they wanted for the fishery. Blue Marine used information from fishers to guide its dive survey plan to try and locate spawning sites. One spawning

aggregation site was confirmed and well documented while two other sites were confirmed but not well documented.

In 2018, Blue Marine wrote a management recommendation report to the MoFMA recommending sites for protection and broader recommendations for improved management of the fishery including recommendations by fishers. A change in Government meant progress became delayed. However, in 2018 the new Government made a new pledge to protect “at least one island, one reef and one mangrove in each atoll”. As part of this, Atoll Councils were asked to recommend sites for protection. The Laamu Atoll recommended seven sites for protection including two of the spawning aggregation sites identified by Blue Marine, who then in turn provided supporting evidence to the Ministry of Climate Change Environment and Technology to protect these areas as nationally designated Marine Protected Areas. It is expected the third confirmed grouper spawning aggregation site will be designated as Locally Managed Marine Area in 2023.

Evidence collected by Blue Marine and partners helped the designation of seven new MPAs on Laamu Atoll



Blue marine's team members undertaking fisher interviews on Laamu Atoll

INFORMATION: DATA COLLECTION/ CITIZEN SCIENCE

Maldives: Promoting local ownership of resources and collecting biological data through citizen science

In 2019, Blue Marine started a programme on Laamu Atoll to train its local residents to conduct basic health assessments of their important coastal habitats- seagrasses, mangroves, and coral reefs. The programme is called “Laamaseelu Farudhun” meaning exemplary citizens in the local language, Dhivehi. In February 2019, Blue Marine invited two of the world’s leading seagrass experts to Laamu Atoll to help train individuals how to monitor their local seagrass meadows. 21 people from the community, local non-governmental organisations, higher education schools and local governments participated in the training and participants were from seven of the eleven inhabited islands on the atoll. These individuals are now able to independently conduct annual monitoring surveys of seagrasses across Laamu Atoll. Blue Marine analyses the data and publishes reports which are then shared with user group across Laamu Atoll. Blue Marine has extended the training to cover coral reef and mangrove monitoring. Managed Marine Area in 2023.



Maldives: Training dive guides to collect megafauna data on tourist excursions

Diving is offered as an excursion at every resort and guest house across the Maldives. This presents a huge opportunity to collect data which could help to inform marine environmental management at a large scale and focus research efforts. In 2019, Blue Marine and Six Senses Laamu trained the resort's dive team to collect sightings data on megafauna that they see on dive excursions. After every dive, guides fill in data sheets which record the time, date, temperature, dive site name, current strength and direction, and presence of species of shark, ray, napoleon wrasse, adult and juvenile turtle species and large groupers. This data is collected at no extra cost to the resort or to

Blue Marine. In 2019, a master's student from the UK analysed the data and produced a report. Findings have helped identify hotspots on the atoll for more than 30 species, many of which are listed as globally Threatened, Endangered and Critically Endangered on the International Union for Conservation of Nature Red List. Data were included in a briefing document sent to Ministry of Climate Change, Energy and Environment as evidence to justify the sites being put forward for protection. Blue Marine and Six Senses Laamu resort are including this data in a scientific paper which will be the first review of Napoleon Wrasse populations in the Maldives in more than twenty years since they were nationally protected. This paper, due for publication in 2023 will have implications for how populations can be protected through the creation of MPAs and by broader fisheries management measures.

A turtle encountered on a guest dive by Six Senses Laamu guides. Image by Alex Mustard.



Maldives: Building local capacity for marine conservation and collecting data through university internships

In 2020, Blue Marine designed a comprehensive resource use survey to interview all marine resource users on Laamu Atoll to better understand how, why, where and when they use the atoll's marine resources. All types of fishers and locals were interviewed, including women's groups, NGOs, atoll and island councils, businesses (including the local tuna processing factory) and tour operators. Blue Marine works closely with the Maldives National University to support students pursuing careers in marine science. Blue Marine recruited and trained six interns from the MNU currently doing their BSc in Environmental Management. Blue Marine covered their field costs and team members travelled with them around the eleven inhabited islands on Laamu Atoll to collect resource use data. For these students who have few opportunities to gain work experience, this is invaluable experience for them. Blue Marine also uses the experience as an opportunity to scout for promising individuals who it might wish to hire later in their careers. This research provided valuable data about marine resource use at an atoll level in the Maldives, which has never been done before.

This is invaluable experience for students who have few opportunities to gain practical field experience



Blue Marine's interns from the Maldives National University conducting resource use interviews on Laamu Atoll.

PEOPLE: STAKEHOLDER GROUPS

Maldives: The Laamu Atoll Tourism Coalition

In the absence of effective management, and as tourism has expanded throughout the country, many of the Maldives' marine ecosystems have become degraded, particularly in areas where tourism is concentrated. Fortunately, because an additional domestic flight is required to reach Laamu Atoll, tourism levels have remained low. Until recently, Six Senses Laamu was the only resort on the Atoll and there are only a few guest houses on the island of Gan. Now, there are plans to build eleven new resorts on the Atoll.

In 2021, the Laamu Atoll Tourism Coalition (LATC) was set up by Blue Marine to stem the risk of poorly regulated tourism impacting the Atoll's marine environment as tourism begins to expand.

The group currently has two members – one resort and one guest house. Their vision is to see the health of Laamu Atoll's marine ecosystems preserved for all who depend on them. The coalition mission is to see all tour operators following a set of standards which ensure that their tourism operations do not impact the local marine environment. Their hope is that by creating these standards of operating now, any future businesses that begin operations will be encouraged to join and follow suit. Regular meetings were required during the set-up of the coalition but will be reduced to every quarter in the future to reduce time commitment but to ensure continued engagement. The Committee meetings are expected to provide a forum for updates from stakeholders about relevant developments, sharing of ongoing sustainability programmes and reviews of standards of practice.

Aerial view of Six Senses Laamu resort.



PEOPLE: KNOWLEDGE EXCHANGE

Maldives: Facilitating a knowledge exchange trip for the Laamu Atoll Council to a protected area with a management plan

In July 2019, Blue Marine organised and led a two-day knowledge exchange trip for local leaders between two of the atolls, Laamu Atoll to Addu Atoll. The aim was to demonstrate to the councils how protected areas function on Addu Atoll and how they benefit the community, with the aim that to inspire council members to consider how protected areas could be replicated on Laamu. The trip was co-funded by Six Senses Laamu resort and supported by the Ministry of Environment, Climate Change and Technology.

Participants were taken on a tour of the Addu Nature Park, a protected area network under the Environment Law of the Maldives, comprising terrestrial and marine habitats as well as to a community protected mangrove site in Meedhoo called 'Mathiilhi Eco Garden'. Productive

discussion sessions were held with the park managers and the Equatorial Travel and Tourism Association of Addu (ETTAA), and participants discussed opportunities and challenges for biodiversity conservation. The ETTAA invited Laamu Atoll to join a network of southern atolls working together to promote eco-tourism in the atolls and it was well received by the Laamu stakeholders.

Post trip surveys were undertaken to investigate the effectiveness of the knowledge exchange. Results showed that after the visit more participants strongly agreed that protected areas benefit fisheries, create jobs, benefit wildlife and benefit tourism. Participants indicated that they saw the challenges to establishing protected areas in Laamu Atoll as: funding (82%), technical capacity (73%), community buy-in (36%) and administrative difficulties (36%). Blue Marine is working with the Atoll Council and relevant Ministries to develop sustainable funding mechanisms and build capacity to resolve this problem while continuing to build support for environmental protection.



Local policy makers from Laamu Atoll visiting the protected areas of Addu Atoll.

Maldives: Using social media polls as a cost and time effective tool to understand community support for MPAs

As part of the Government's pledge to protect "at least one island, one reef and one mangrove in each atoll" Atoll Councils were asked to recommend sites for protection. The Laamu Atoll recommended seven sites for protection – five of which were recommended to them by Blue Marine based on data from underwater surveys. All of these five sites have now been designated as new nationally designated Marine Protected Areas.

A large proportion of social media users on Laamu Atoll supported the designation of new MPAs on the atoll.

From 6-12 May 2021, Blue Marine and Maldives Resilient Reefs ran targeted ads on social media pages in Dhivehi to Laamu Atoll residents to understand whether the community were supportive of protection of these five sites. Ads were run for each of these five sites with a fact about the site and asking whether the individual supported the protection of the area. They ran on mobile devices only. Each ad reached at least 41-49 per cent of the population. Results showed that between 84-93 per cent of respondents were in favour of protection for all five sites. The polls were not only a powerful data collection tool and an easy way to gauge public perception, but they also provided educational facts to communities about each site. Blue Marine shared the poll results with the Ministry of Climate Change, Energy and Environment and proposed this as a model for use on other Atolls as they continue to designate additional new marine protected sites across the country.

A beautiful underwater scene from Laamu Atoll. Image by Marteyne van Well.



PEOPLE: EDUCATION CAMPAIGNS

In the Maldives, Blue Marine works through Maldives Resilient Reefs (MMR) to help bring marine protection into the public sphere. Educational activities include school visits, snorkelling camps (which to date have reached over 500 children), presentations at international conferences and citizen science programmes teaching young people scientific field skills.

Educational campaigns have been particularly influential in the Maldives, due to high utilisation of social media among residents. In 2019, the #ProtectMaldivesSeagrass social media campaign convinced more than a quarter of all resorts in the country to commit to protecting more than 830,000 square metres of seagrass by highlighting the value of this blue carbon habitat. The following year, MMR launched the #FishForTomorrow

campaign, which aimed to educate citizens on how to fish responsibly. The interactive educational game created to support this campaign has been played by 10 percent of the Maldivian population. Two months after the campaign, all parrotfishes were added to the protected species list.

The newest element of the Maldives education programme is a digital fisher education platform, which is to be piloted in Laamu atoll and scaled up country wide. Five modules, each consisting of videos, animations, infographics and quizzes are being crafted around key learning outcomes, including fisheries management and reef fish biology. It is hoped that by getting fishermen on board through meaningful and rewarding educational initiatives, marine protection principles will become instilled in local fishing practices.

**BUMPHEAD PARROTFISH
LIVE FOR
40 YEARS
THAT'S AS LONG AS A CAMEL!**



ECONOMICS AND FINANCING: REVENUE FROM SUSTAINABLE TOURISM

Maldives: Conducting willingness to pay surveys at a resort to determine user fees for MPAs

Between December-April 2021, Willingness to Pay Surveys were carried out with tourists at Six Senses Laamu resort on Laamu Atoll. Six Senses Laamu is a luxury five-star resort with a strong sustainability ethos. It is currently the only operational resort on Laamu Atoll but plans for eleven new resorts are underway and pressure

on Laamu Atoll's resources is expected to increase alongside this. Fortunately, the Government of Maldives declared seven new MPAs in 2021. The surveys aimed to assess how much tourists would be willing to pay to enter and use a MPA on Laamu Atoll. User fees are commonly used to contribute towards management of MPAs in tropical coral reef environments. Blue Marine is working with local stakeholders to develop a broader financial business plan for protected areas on Laamu Atoll. Research findings will contribute towards its design.

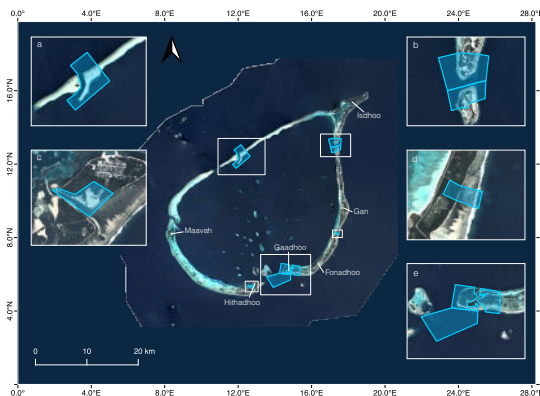
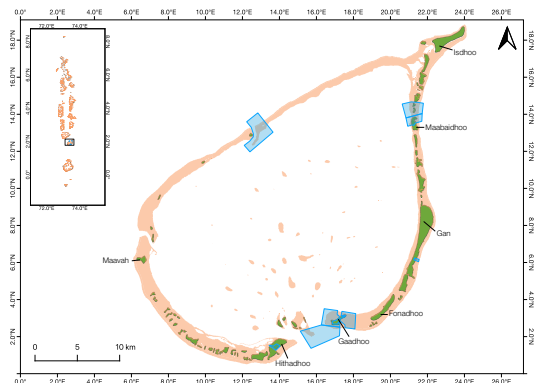
Canoes parked at Laamu Hithadhoo mangrove.



A guest visiting Laamu Hithadhoo mangrove.



Guest snorkeling on the seagrass meadow of Six Senses Laamu. Images by Andy Ball.



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