

BLUE & GREEN LAAMU

*The Marine Conservation & Sustainability
Newsletter by the Maldives Underwater Initiative*
JUNE 2023



SIX SENSES
LAAMU



MALDIVES UNDERWATER INITIATIVE by Six Senses Laamu

Credit: Miriam Staiger



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THE BIG STUFF

-  **430** sharks were sighted
-  **173** rays were sighted
-  **389** turtles were sighted
-  **160** Guests joined on megafauna surveys

OUR EDUCATION

-  **820** moments of education were shared with guests
-  **178** moments of education were shared with hosts
-  **252** moments of education were shared with the community

SIX SENSES CONSERVATION CCAP - LONG-TERM REEF MONITORING



In June, MUI completed their 9th bi-annual reef survey for the Climate Change Adaptation Program. This survey allows the team to assess changes in the health of the reef to contribute to effective management. By tracking changes in coral cover it can indicate if the populations are stable, decreasing or increasing and feed into our understanding of coral reef recovery. Previously we have found that the house reef has been making a gradual recovery after the 2016 bleaching event, which caused many coral colonies to die. Once the analysis has been completed, we hope to see that our house reef is growing strong. With a healthy coral population, it allows the reef to support an abundance of invertebrates and fish life. In turn, this allows megafauna such as turtles, sharks and rays to thrive on the reefs around Laamu!

 **26** genera of coral recorded

 **9** surveys completed since June 2019

 **72** transects in total



BLUE CARBON - VISIT FROM PROF PETER MACREADIE

World leading expert in blue carbon, Prof Peter Macreadie, has been visiting the team in Laamu to offer his assistance in the Blue Carbon research and to offer training for the team. Peter previously visited Laamu to sample the mangrove and seagrass habitats and he has returned this year to share his findings and discuss how the MUI team can use them to progress. The MUI team has learnt a lot about what blue carbon is and how it can help to tackle climate change.

Blue carbon is the carbon that wetland ecosystems such as seagrass and mangroves capture and store (sequester). Blue carbon is particularly important as the carbon that it removes from the atmosphere is stored for millennia, rather than tens or hundreds of years which is the case for terrestrial forests. This makes blue carbon habitats the most effective natural carbon sinks, and protecting and restoring these ecosystems holds the potential to mitigate the impacts of climate change. By ensuring that blue carbon habitats around Laamu Atoll are protected, we can prevent their destruction so that they continue to sequester carbon and we avoid the release of carbon into the atmosphere.


Blue Carbon ecosystems are found all over the globe, learn more about the blue carbon ecosystems near you and how you can help their conservation!



GUEST PRESENTATION FROM PROF PETER MACREADIE

As part of Peter Macreadie's visit to Six Senses Laamu, it was important to educate and inform guests on Blue Carbon and the potential it has to fight climate change. During Peter's stay he hosted, with MUI's assistance, a Blue Carbon experience in the SHELL allowing guests an opportunity to see first hand some of Blue Carbon Lab's work and the importance of the Blue Carbon habitats Six Senses Laamu is lucky enough to have around the resort. Peter also gave an inspiring special presentation to guests at the arrival jetty again highlighting the importance and significance of Blue Carbon habitats.



 **22** guests joined the special Blue Carbon presentation

TRAINING WEEK FOR MUI



In June, the MUI team took the opportunity to ensure continual professional development by making and participating in a training week. Each afternoon different training sessions were run either by members of the MUI team or other staff members around the resort. Training sessions ranged from presentation skills and video editing, to R Statistics software and QGIS mapping software as well as fish length estimation and freedive training. With two to three hours of training each afternoon, it's fair to say the team has come out of this week with many new and improved skills enhancing many areas of work .

 **18** hours of training

 **14** different topics covered

HOST EDUCATION

In June MUI focused on giving the hosts of the resort more opportunities to get in the ocean and witness marine life around Laamu while using this opportunity to educate and inform them on the importance of the marine world and how we can protect it. The MUI team invited Six Senses hosts on a snorkel on the resort House Reef for World Ocean Day on the 9th of June. In addition, MUI also invited hosts that couldn't snorkel to join them on a snorkel lesson in the lagoon. The aim was to help as many of the Six Senses hosts as possible not only to be able to experience the underwater world, but also to do it safely.

Following this, for World Sea Turtle Day on the 22nd, the ORP team from MUI gathered hosts up to venture to one of the most popular snorkel sights for turtles near to the resort, Laamafaru Haa. Hosts were lucky enough to spot some of the most frequently encountered turtles as well as reef sharks and many other wonderful reef species.

 **68** hosts taken by MUI on organized activities



BLUE MARINE



**BLUE MARINE
FOUNDATION**

FOUNDATION FISHER SIGNATURES FOR MPA MANAGEMENT

After the designation of 6 new Marine Protected Areas (MPAs) in Laamu atoll, one of the major goals of the MUI team has been finalizing the management plans for these areas. To get the ball rolling the Blue Marine and Maldives Resilient Reefs team started conversations with the fishers of the atoll. Over the course of the next six months the team will travel to each of the 11 inhabited islands of Laamu to interview the fishermen. These interviews will be crucial in understanding the fisher perspectives and thoughts about the MPAs. The interview questions will focus on the different types of fishing methods, gear and the different levels of restrictions which the fishermen would like to see. As MPAs will be helping fishers in the long run by providing more and bigger fish, it is in their best interest that these areas get the best protection.

To ensure this, the interviews are carried out after an educational session about protected areas, their importance, uses and how they benefit the fishers using the Masmahaaveshi education portal. These discussions hold significant importance as the fishermen serve as crucial stakeholders in these areas, possessing extensive knowledge and understanding of their intricacies. Moreover, their livelihoods are intricately tied to these areas, making their perspectives invaluable. The team has already conducted interviews with fishers from the nearby islands of Maamendhoo and Hiithadhoo this month and plans to cover all 11 inhabited islands of the atoll by the end of the year.




 **28** fishers interviewed

FISH OF THE MONTH – BIGEYE BARRACUDA

The Bigeye Barracuda (*Sphyraena forsteri*) is a remarkable fish found in warm tropical waters spanning the Indo-Pacific region. With a sleek and muscular body, it grows up to 1 meter in length and boasts disproportionately large eyes. Known for their social nature, they spend their juvenile phases schooling in sheltered mangrove forests and seagrass meadows and become more solitary and move to reefs and channels as they grow bigger. This apex predator possesses sharp teeth and preys on smaller fish and crustaceans with lightning-fast bursts of speed. The Bigeye Barracuda's captivating appearance and hunting prowess make it a cherished icon of the underwater world. Because of their speed they are a guest favorite to catch on the morning fishing trips by trolling.



 **9** Bigeye Barracuda landings

MASMAHAVESHI SESSIONS FOR HITHADHOO SCHOOL

The Blue Marine and MRR team conducted two educational sessions for students of Laamu Hithadhoo school. These sessions were a trial run for the educational outreach initiative of the MUI team – Hello Hallu. Hello Hallu is an initiative that seeks to raise awareness, enhance education, and foster a love for marine ecosystems among students across Laamu. The educational sessions were conducted over two days and catered to students aged 10-13 from different grades. A total of 37 students participated in these sessions. To facilitate interactive learning, the team utilized the newly developed education portal Masmahaaveshi, which incorporated engaging hands-on activities. The sessions focused on emphasizing the importance of Maldivian marine ecosystems, highlighting their interconnectedness and their crucial role in maintaining the health and abundance of reef fish. Special attention was given to the recently designated Marine Protected Area in Hithadhoo, and another community-led conservation area set to be designated soon. The team was delighted to witness the student's enthusiasm and love for the marine ecosystems and looks forward to using Masmahaaveshi in other schools in the atoll.



 **37** students participated

LITTLE BIG FESTIVAL

The Maldives Resilient Reefs and Blue Marine Foundation team participated in the Little Big Festival held on Kudafari island, Noonu atoll to celebrate World Environment Day and World Ocean's Day. The event was a true community celebration of the ocean, island ecosystems and Maldivian culture, bringing together diverse groups of people including the Noonu community, divers, conservationists, engineers and architects from across the country, united in their shared love for the islands and ocean.



 **133** people engaged

During the one-day event, the MRR team participated in some great conversations about resilience, sustainable island development and inclusive community engagement. Petu took part in a breakout session presenting the Laamu Hithadhoo Community Conservation Area project as a model of conservation that can be led by communities across the country to protect their local marine ecosystems. Meanwhile, Jenny shared the Laamaseelu Masveriyaa programme being run at Six Senses Laamu as a sustainable resort reef fishery programme that enables tourism operators to source seafood in a sustainable manner with minimal impact on Maldivian marine environments. The festival was made extra special by the great spirit and hospitality demonstrated by the Kudafari community, delicious food and traditional music, showcasing a true celebration of island life and culture that is dependent on our oceans and coral reefs.


HITHADHOO MANGROVE CLEAN UP

As part of their 2023 work plan to support the establishment of a Community Conservation Area on the island of Hithadhoo, the MRR and Blue Marine team took the lead in organizing a clean-up of the mangrove Marine Protected Area on the island. Mangroves are a very important ecosystem and provide a multitude of benefits to humans and the environment such as capturing and storing vast amounts of carbon, providing coastal protection by absorbing wave energy, filtering heavy metals and agricultural run-off and providing safe nursery grounds for juvenile fish and invertebrates to feed and grow.



Five commercially important fish families were recorded in these mangroves in 2019 so protecting them is vital as eventually these fish will move out to the coral reef and become part of commercial fish stocks. Habitat is provided above ground for crabs and birds too. On Saturday 17th June, the MRR, Blue Marine and MUI team joined the Hithadhoo council, school, health center, businesses and community for two hours to remove litter and clear away dead natural debris such as coconuts, leaves and branches, the removal of the natural detritus revealed more hidden litter. A total of 63kg of plastic and 9kg of metal was collected from an area that is used by the community for picnics, relaxation and canoeing.

 **63** kg of plastic collected

 **54** participants involved in the mangrove clean up



THE MANTA TRUST

AMAZING MONTH OF MANTA SCANS



June was an incredibly successful month for Manta Trust's research and the team is unbelievably excited to share that they have conducted 32 underwater ultrasound scans on 13 individual manta rays of which 12 were female. One of these females is a potential "new" Laamu manta and at least four of the scanned females were pregnant: Lady Mcbeth, Xena, Zaara and Mother Goose. Mother Goose is already showing a baby belly meaning that she must be in her 2nd Trimester or further. Her wingspan measures 3,20m, the team have known her for 10 years now and since then she has developed a special trust in the team. She is always calm and this month the team managed to obtain a very clear ultrasound image of her baby.



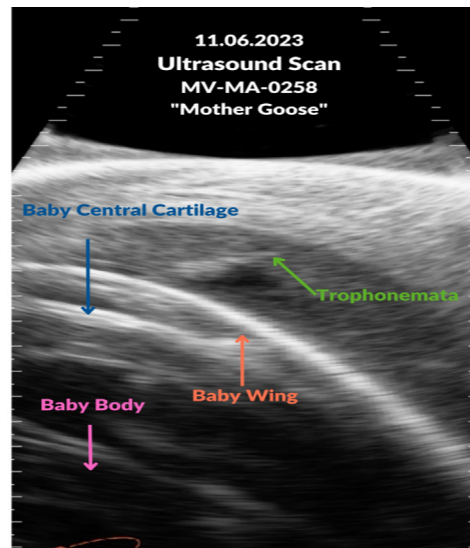
The ultrasound image shows parts of the manta ray pup inside the uterus. As manta ray pups are already 1.5m wide at birth, they have their wings folded up on their back (like a burrito)! In this scan you can clearly see the pups' wing and also part of its body.

The team received additional ultrasound trainings by Prof. Marie-Aude Genain from the University of Cambridge in the UK which were vital to improve the team's scanning technique and interpretation of the images, directly resulting in better quality scans this month. We would like to thank Marie-Aude and Ray for dedicating their time in supporting the team so tirelessly.

4 pregnant mantas scanned



32 underwater ultrasound scans performed



13 individual mantas scanned

WORLD OCEAN DAY CONFERENCE

This month the Manta Trust Assistant Project Manager Jinaad gave a talk at the "International Conference on Sustainable Blue Planet: Conservation, Augmentation, and Remediation" - an online event organized by the Sathyabama Institute of Science and Technology in India.



As part of the World Ocean Day celebrations, Jinaad delivered an insightful talk on manta ray conservation, shedding light on the challenges and threats faced by these magnificent creatures, as well as emphasizing the importance of maintaining a healthy ocean environment for their survival. Over 40 scientists and students from around the world were watching the presentation virtually online. The Manta Trust would like to thank the organizers for inviting us to speak at this conference.

MANTA SPECIALITY DIVE COURSE

The Manta Trust and Deep Blue Divers teamed up this month to teach one of our lovely guests Caroline the PADI Manta Specialty Dive course which is offered at the resort. In this course, guests get the opportunity to really dive into manta ray research and learn more about manta ray's ecology and biology, as well as be a manta scientist for a day and learn how to be true manta advocates. Caroline really brought the manta luck and encountered 11 manta rays in a single dive, which she then successfully identified using the Manta Trust's regional database. The team is incredibly grateful to have met Caroline, who was a wonderful student and incredibly supportive of the work the Manta Trust is conducting on island and beyond.

Caroline writes:

"I feel so lucky to have been able to complete my PADI Manta Conservation Diver course this past week at Six Senses Laamu with the incredible team from SHELL, the Manta Trust and DBD. It is such a privilege to dive with these incredible creatures and it's so vital that we protect them. Knowing what I do now about these gentle giants and just how vulnerable they are particularly to overfishing has been an eye opening education. I am thrilled to now be a certified Manta conservation diver and I am committed to doing my part in spreading awareness as well as identifying and sharing information with the team on these amazing creatures when I'm lucky enough to dive with them again in future. I highly recommend this course to everyone. Thank you again to Miriam and the whole Manta team!!"



81 confirmed manta sightings



16 remote underwater cameras deployed



OLIVE RIDLEY PROJECT

THE OLIVE RIDLEY PROJECT

HITHADHOO CORNER BEHAVIOURAL STUDY- AN UPDATE

For the past 3 months, the ORP team have been intensely surveying the sea turtle population at Hithadhoo Corner. This channel corner site is an underwater field of rocky outcrops and coral bommies, making it a popular resting site for green sea turtles.

Amy, a master's student from Imperial College London, has been out here with ORP as part of her MSc thesis to study the behavior and intra-species interactions of individuals based at Hithadhoo Corner. Her research focuses on the fidelity of green turtles to specific blocks, and the presence and absence of other individuals on those blocks.



During this period of data collection, ORP completed over 60 dive surveys at this site and compiled 350 independent sightings of individual turtles, with some sighted more frequently than others.

Amy's next step is to analyze the data to better understand the behavior of individuals and their social interactions with other turtles in the area. While Amy will sadly be leaving us soon, the team will continue to regularly survey this site to build on our understanding of how environmental factors can impact the presence of turtles here.



350 encounters



60+ in water surveys

WORLD ENVIRONMENTAL DAY CLEAN UP

ORP took part in a beach cleanup organized by the Laamu Atoll community and NGOs to celebrate World Environment Day. The Laamu Atoll Council, Laamu Gan Council and Women's Development Committee L. Gan, Endheri, Maldives Police Service, Maldives Transport and Contracting Company Plc, Maldives Resilient Reefs, Horizon Fisheries Maldives, and Outreef Sports Club all participated in the clean-up event, which was put together by the Maldives Heritage Society. The event took place at the "Paree Fengandu" (Fairy Pond) cultural heritage site. It is one of the few freshwater mangroves in the nation and has significant cultural significance for the Laamu people. The Maldives government declared it to be an environmentally sensitive area in December 2021. Inaan, the Sea Turtle Ranger and Community Officer for L. Gaadhoo, represented ORP during this event and even jumped into the pond to remove trash from the waters. Now that's commitment!

We at ORP and MUI want to express our gratitude to the Laamu community for taking the initiative to fight plastic pollution in vital habitats and support cleaner environments!



3 bags of rubbish collected



24 community members attended

DIVING INTO WORLD SEA TURTLE DAY!

On June 16th, the team celebrated World Sea Turtle Day at the resort by organising an array of sea turtle themed activities for both guests and hosts!

Using the new facilities at the SHELL (Sea Hub of Environmental Learning in Laamu), the team hosted a 'Sea Turtle Experience' for guests, which included a photo ID workshop, a sea turtle rescue demonstration, and an exhibition of sea turtle anatomy.

Out in the water, hosts were taken out on a boat snorkel to Laama Faru Haa, one of our popular turtle sites. The team was joined by 14 Six Senses staff from six different departments. Before the snorkel, the ORP team gave a quick introduction to sea turtle biology, and highlighted the major threats facing turtles, such as pollution, poaching, and climate change. The group had an amazing encounter with five of our resident hawksbill turtles, and came out of the water with a renewed enthusiasm, not only for turtles, but for all ocean life.



14 hosts joined

NEW NESTING MAMA!

Say hello to our newest nesting green sea turtle!

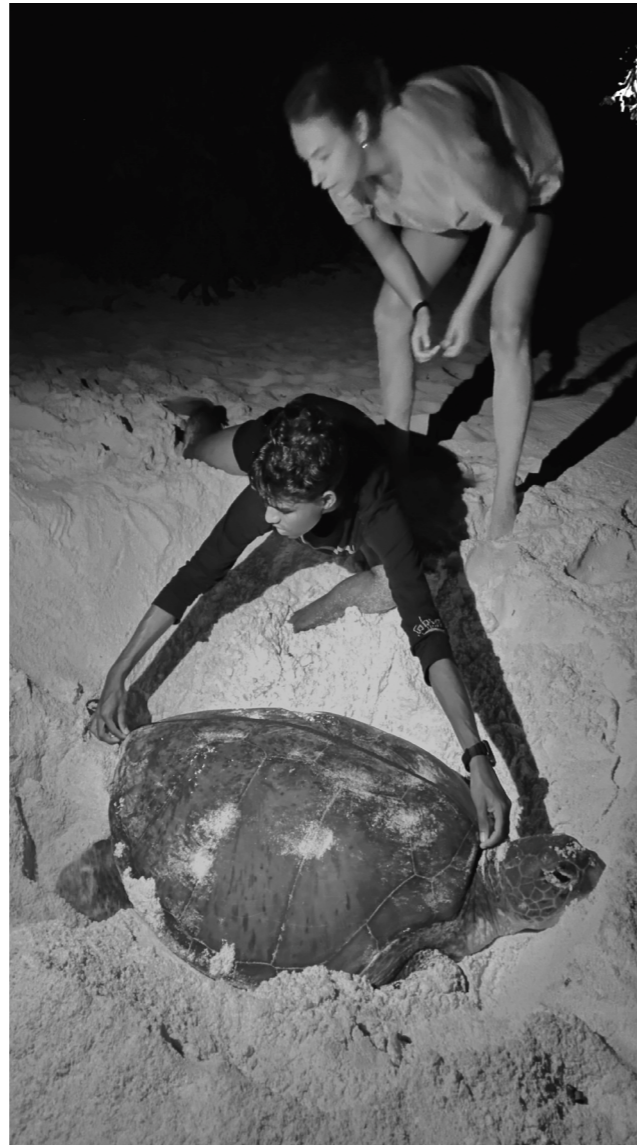
This nesting mama graced the team with her presence twice this month. She emerged onto the beach in the dark of night to lay two nests, one on June 1st and another on June 12th. Fortunately, the ORP team was able to encounter her while on night patrol during her second visit, which allowed them to take her carapace measurements and facial ID photos. After checking their database, the team confirmed she was a new turtle that had never been seen nesting on the island before.

 **2** nests laid

Female green sea turtles migrate to lay nests every two to four years, and lay up to eight nests each time. They only ever come up onto land to nest, normally during the night when it is cooler, and will lay their eggs in an egg chamber about 70 cm below the surface. This whole process can take several hours, giving the ORP team plenty of time to collect the data they need.


With only 12 individuals identified since ORP joined in 2018, it is always an exciting moment for the team when a new female is added to their growing database of nesting green turtles in Laamu.

 **120** eggs total



Monthly statistics

 **309** ID submissions

 **950** turtles identified in Laamu

 **28** newly identified turtles

OUR COMMUNITY CELEBRATING ENVIRONMENT DAY WITH HITHADHOO SCHOOL

As part of World Environment Day Six Senses Laamu and the MUI team hosted 16 students and five dedicated teachers from Hithadhoo School to showcase our sustainable practices through technology.

The students from grade six had an educational tour of the resort, starting with a tour of the SHELL, where students were thrilled to explore the Lab, Glass Bottom Boat, and Blue Discovery room to learn about how we use technology to strengthen our message and inspire more people to conserve our natural world. This was followed by a session with our IT team, learning about the network infrastructure at the resort. The students even explored the heart of the house, witnessing how we seamlessly integrate technology into our daily operations while prioritizing sustainability.

The highlight of the visit for many of the students was the visit to Earth Lab, where they learned about the importance of sustainable waste management. They actively participated in making coconut oil and crafting paper, gaining hands-on experience and understanding the significance of eco-friendly alternatives.

WORLD OCEAN DAY SNORKEL

To celebrate World Ocean Day, The Manta Trust team and MUI recently organized an exciting snorkel event for school kids from Laamu Hithadhoo School. The event commenced with an engaging and informative talk led by marine experts from MUI. Students had the opportunity to delve into the fascinating world of marine ecosystems discovering the incredible diversity of marine species and the importance of preserving marine habitats. Following the educational talk, the students eagerly participated in a short run to support Manta Trust's run for the ocean challenge. Promoting physical activity and appreciation for the coastal environment. The snorkel event provided an opportunity for students to witness the first-hand wonder of the waters around their island, to explore vibrant coral reefs and observe fascinating marine species;



OUR HOME WASTE SEGREGATION TRAINING

 **11,593** bottles of water produced

 **2,111** kg of homemade compost produced



This month, the Six Senses Laamu Sustainability team held plastic free training sessions for 34 hosts from the kitchen and stewarding teams. The training concluded with them creating a list of solutions to implement in the resort that will help to reduce the waste they produce and recycle more materials. Together the team created a strong foundation in understanding the preservation of resources, particularly in understanding the importance of segregating waste items whenever possible. All participants thoroughly enjoyed the training and realized the impact of reducing, reusing, and recycling all waste properly. The aim of the workshop is that by promoting sustainability awareness, we can create real and significant change in how we manage our waste and achieve better environmental outcomes in the long-term.

 **34** hosts joined

NEW EXPERIENCES AT EARTH LAB

Coaster Making

At the Earth Lab, we are thrilled to offer our guests a unique coaster making experience as part of the Earth Lab Discovery and rainy-day activities. This engaging workshop allows participants to transform wasted corks from wine bottles into beautiful coasters, serving as both functional and decorative pieces. The Earth Lab Discovery Workshop also includes additional workshops such as paper making, coconut crafts, and glass cutting to foster a sense of shared responsibility among our guests, hosts, and community in upcycling waste materials, inspiring a sustainable lifestyle.



Liquid Fertilizer

Introducing Liquid Fertilizer at Earth Lab! We're excited to educate our guests on the innovative use of kitchen waste by transforming it into liquid fertilizer. This initiative is particularly beneficial for those facing space constraints, as traditional composting methods require significant physical space. Our Earth Lab team is currently creating fertilizer using onion peels and wasted tea bags. Conveniently located separate bins for tea bags have been placed around our outlets, and our hosts are fully informed about this new initiative. By utilizing onion peels and tea bags, our liquid fertilizer provides numerous benefits, including enhancing plant growth, improving soil quality, and reducing waste.

To learn more about marine conservation and sustainability initiatives at Six Senses Laamu please contact:

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