

BLUE & GREEN LAAMU

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

APRIL 2022

*Four male and one female turtle were rescued this month
after guests and staff from Six Senses Laamu found them
piled up on a beach of an uninhabited island in Laamu.*



SIX SENSES

LAAMU



MALDIVES UNDERWATER INITIATIVE by Six Senses Laamu

This shot by Marteyne van Well, Six Senses Regional General Manager, was ranked in the top ten of last year's Six Senses Laamu's Underwater Photographer of the Year Competition.



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THE BIG STUFF



186 megafauna surveys were conducted by the MUI and DBD teams



714 sharks were sighted



300 rays were sighted



447 turtles were sighted

OUR EDUCATION



1,910 moments of education were shared with guests



222 moments of education were shared with hosts



326 moments of education were shared with the community

SIX SENSES CONSERVATION

CORAL BLEACHING SIGHTED IN LAAMU

This April, the MUI team recorded high sea surface temperatures ranging from 30 to 32 degrees Celsius in different areas. Because of these high sea temperatures, and in combination with the recent coral bleaching warning in the Maldives issued by NOAA, the Six Senses Laamu research team were using both aerial surveys and in water observations to monitor corals for signs of coral bleaching at the resort House Reef, as well as other reefs within Laamu Atoll.

In the last few weeks of April, more corals started to show heat stress symptoms such as losing their color (which is a result of the corals expelling their symbiotic algae) and, in some cases, fluorescing in vibrant colors of neon green, pink and yellow. Corals display these extreme colors as a protective response to the heat stress after they have bleached. It is thought that this acts as a protective layer, similar to humans using sunscreen. The high production of colorful photoprotective pigments is also thought to promote the return of the algae to the fluorescing coral, and hence it is not surprising that scientists suggest that colorful bleached reefs have better chances of recovery.

Despite signs of both colorful and white bleaching, a recent change in weather, including stronger winds, give the team hope that the temperatures will decrease soon and corals can re-establish their algae. 🌊



2 drone surveys were conducted in April to assess the coral bleaching status of the house reef



CORAL LARVAE REARING WORKSHOP

This month, Six Senses Laamu's Research Coordinator, Miriam, was given the exciting opportunity to participate in a workshop, titled "From larvae to livelihoods: restoration of coral reefs in the Maldives" organised by CSIRO (Australia's National Science Agency) and MMRI (Maldives Marine Research Institute). Located on the local island Omadhoo in South Ari Atoll, the five day workshop provided Miriam with important knowledge in coral reproduction and recruitment, including skills in collecting and culturing coral larvae and using different deployment methods for reef restoration.

These skills will become increasingly important for Six Senses Laamu's future coral projects which are already in their planning stages. For Miriam, one of the highlights of the workshop was staining larvae with a non-toxic dye which later allowed for easier identification of settled larvae under the microscope. The team would like to thank the whole workshop group, in particular Dr. Christopher Doropoulos from CSIRO and Fathimath Hana Amir from MMRI, for running and organising the workshop, as well as the Six Senses Laamu management and rest of the MUI team for providing Miriam with the opportunity to attend it. 🌊




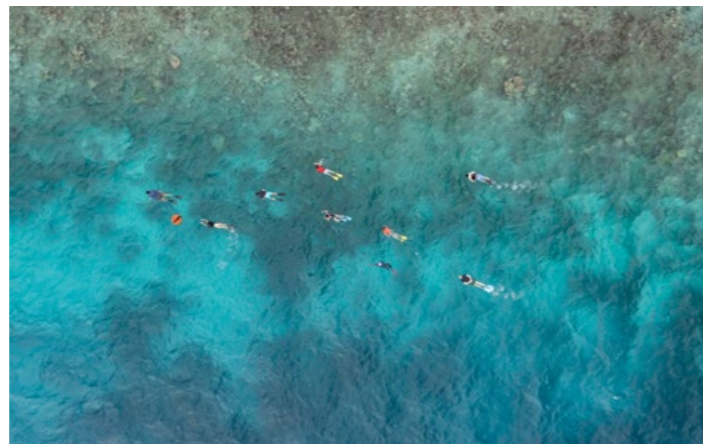
EARTH DAY AT SIX SENSES LAAMU

Every year April 22 is celebrated worldwide as World Earth Day. The day marks the start of the environment Movement in 1970. Since then, we have witnessed raised awareness of the environment which have reflected in policy change. Earth Day's theme for this year was 'Invest in our Planet,' urging a call to action.

To celebrate the day, the MUI team hosted an Earth Day special snorkel trip to one of the most pristine reefs in Laamu. Guests and hosts alike witnessed, first-hand, just how incredible our Earth is and why we need to align our efforts with this year's theme. The event started with a short presentation about Earth day and how we can all become part of the change for the good of our planet.

A total of 25 guests and four hosts joined the snorkel, as well as several hosts from the Deep Blue Divers team. The team hopes that all the participants walked away inspired, aware, and determined to make a change. 🌊

 **25** guests at Six Senses Laamu celebrated Earth Day with MUI



EARTH DAY WITH OCEAN GEOGRAPHIC

Whilst the rest of the team we're celebrating Earth Day with guests, Six Senses Laamu's Research Coordinator, Miriam, was invited to speak at Ocean Geographic's live webinar about the importance of Blue Carbon habitats in the Maldives. The event connected viewers with many experts from across the world, including whale specialist Dr. Olaf Meynecke, her deepness Dr. Sylvia Earle in San Francisco and the team from Ocean Geographic: Alex Rose in Chicago, Janel Kok in Singapore and Michael Aw in Manado.

The aim of the webinar was to inspire listeners about the important connection of life above and below the water. Dr. Olaf taught the audience what role whales play in the carbon cycle and what their protection means for carbon emissions, while Miriam focused on the importance of seagrass meadows and mangroves here in the Maldives, including Six Senses Laamu's vital role in protecting our seagrass meadows. 🌊



You can watch a recording of the webinar [here](#).



Find out more about the program [here](#).

MUI'S BIG SCREEN DEBUT

In November 2021, a film crew from the BBC Studios' Natural History Unit arrived at the resort, with renowned presenter Steve Backshall. Steve sat with Ali, MUI's Community Outreach Coordinator, to discuss the state of coral reefs and the research the Six Senses Laamu team are doing to better understand how we can help. After getting a bit of background on the project, the boys jumped into the water for a dive along our house reef. The crew filmed as Ali checked on the status of egg development in colonies he had been monitoring.

The footage was featured in Our Changing Planet, the first installment of the most ambitious environmental series the BBC has ever commissioned and was watched by 2.7 million viewers in the U.K. when it aired on April 24, 2022. The episode also featured Shaha, Blue Marine Foundations Maldives Project Manager, conducting a snorkeling camp session with school children in L. Gan, which provided a beautiful ending to the first installment of the series. In addition to Six Senses Laamu and Blue Marine Foundation's work, it was great to see a huge part of the episode also dedicated to the Manta Trust's research in Baa Atoll. 🌊

VISITING RESEARCHERS

Collaboration is at the foundation of all of MUI's work. MUI was formed to unify the efforts of Six Senses Laamu's partnerships with several marine conservation organizations. Beyond this, the team often reaches out to scientists around the world to get their expertise and guidance on projects the team are taking on. In light of this, in April the team were delighted to welcome a range of scientists to Six Senses Laamu whom could learn from.

As the world's most low-lying nation, the Maldives are highly vulnerable to the impacts of climate change. To understand the future of coral reef islands, we need to understand how reef islands formed in the past and how their shorelines are maintained today. Last month Dr. Holly East, a specialist in reef island formation, visited the team at the resort to discuss research projects and provide her guidance. She gave a fascinating guest presentation on the linkages between islands, coral reefs and seagrass meadows with many guests joining the presentation in person and over 400 people watching the streamed presentation [online](#).



Later in the month, the team welcomed Holly's PhD students, Lucy Carruthers and Matthew Floyd, and assisted them with conducting their research on the water quality of the resort island. For this, they took samples from groundwater, sea surface, algae and corals. Taking coral cores provides an insight into water quality and pollution levels over time, even from before Six Senses Laamu was built more than ten years ago. By comparing these samples to other samples they have collected from local and uninhabited islands, the human impacts on water quality and coral reef health will be better understood and will formulate important management recommendations. In Lucy's guest presentation, she discussed her previous research into coral reef island shoreline change over the past 50 years, as well as her current research into water resources and marine pollution in the Maldives.

It didn't stop there though! The team were also delighted to welcome back two visiting experts- Dr. Julie Hawkins and Dr. Callum Roberts. In recent years, Julie and Callum, who are course leaders at the University of Exeter, have provided the team with scientific advice, supervised students conducting studies on Laamu's resources and provided great support in our successful application for Laamu Atoll to become a Mission Blue Hope Spot. Whilst at Six Senses Laamu last month, Julie and Callum took time to provide the MUI team with invaluable advice on current and future research projects, from manta ray and turtle research, to sustainable fisheries and coral recruitment success. 🌊



A HUGE THANK YOU

In April, MUI was delighted to welcome some very close and special friends back to the resort. Talented underwater photographers, Amy and Andy, visited Six Senses Laamu in 2020 and showed particular interest and support when it came to MUI's work. They have already been very generous benefactors of MUI and Amy donates her handmade cards to the resort's boutique so that the funds from these sales can be donated to the team.

This year however, Amy and Andy were particularly generous during their visit and provided the team with a substantial financial donation, by far the largest we have received to date. These funds will be used to help our team better achieve our goals in the realms of research, education and community outreach.

The MUI team were rendered speechless by the generosity of Amy and Andy's donation, so to show their appreciation, Amy and Andy received a framed certificate, a manta ray book about Laamu and a private tour of a local island to see the schools and the communities their funding will help to support. 🌊



USD 152,692 of the resort's sustainability fund was used in 2021 on projects that positively impacted numerous people, wildlife, and habitats.



THE MANTA TRUST

MASTERS STUDENTS IN LAAMU

Two of the Manta Trust's research interns have just arrived in Laamu! In April the team welcomed Chris Wenham and Hannah Cocks, who are MSc Marine Environmental Management students from the University of Exeter.

Hannah and Laamu's Manta Trust Assistant Project Manager, Jinaad, are spending one month visiting every inhabited island in Laamu to conduct interviews with fishers and boat captains about manta ray abundance, seasonality, and potential threats.

Chris is staying at Six Senses Laamu and assessing one full year of the Manta Trust's remote underwater photography data for Laamu. This data set (which consists of approximately 156,472 photos!), has been collected using one time-lapse camera that was continuously placed at a manta ray cleaning station where it took a photograph every minute from sunrise until sunset. Through his analysis of this data set, Chris is investigating manta ray abundance, behavior, and the environmental conditions that influence manta ray presence at the site. The results of both Hannah's and Chris' projects which will be published in September 2022...watch this space! 🌊



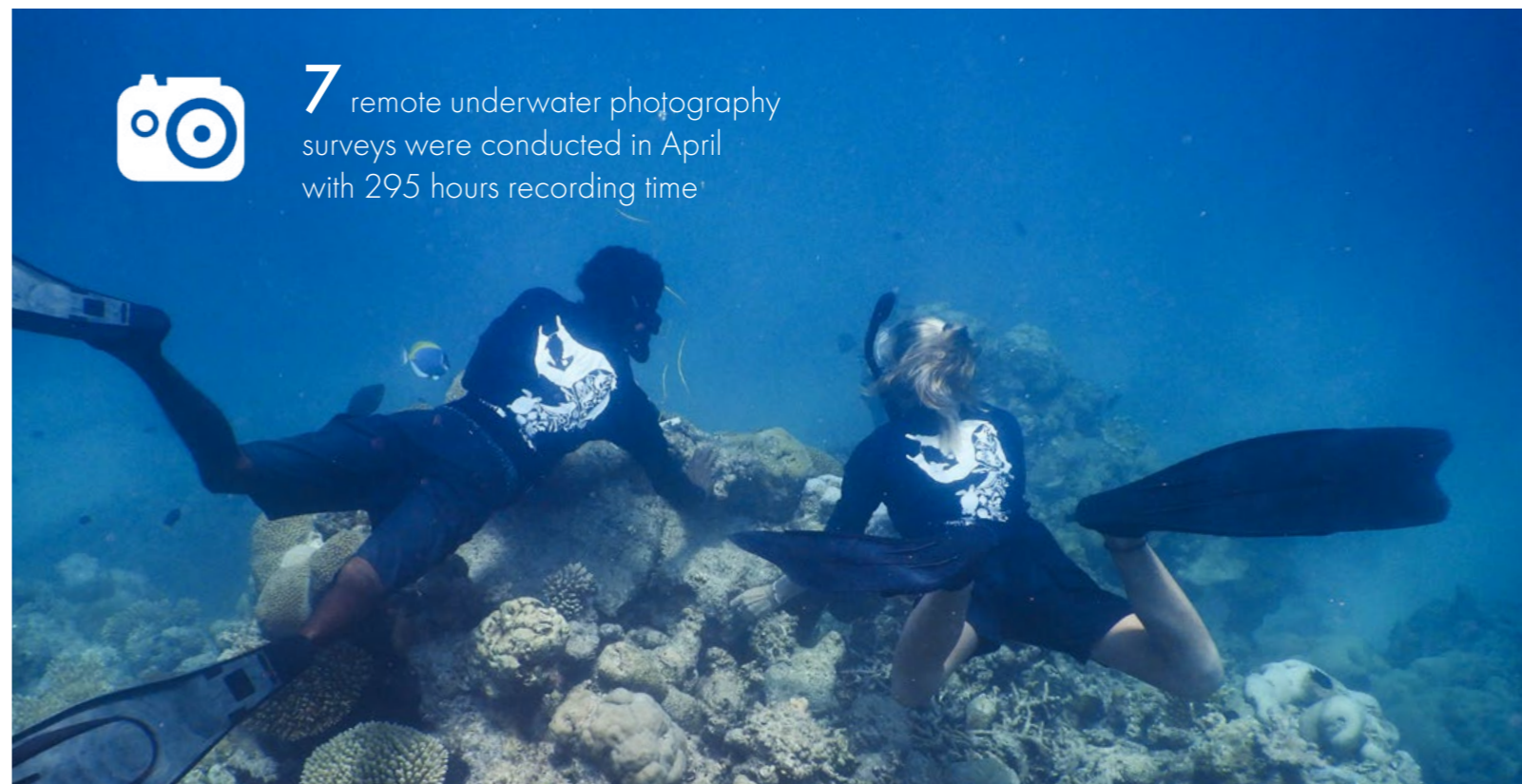
EYES ON THE (HOUSE) REEF

After receiving repeated sighting submissions of manta rays at the end of Jetty A by guests, the Manta Trust team decided to deploy one of their "Eyes on the reef" remote underwater time-lapse cameras on Six Senses Laamu's house reef. They were excited to bring back the camera and were looking forward to discovering manta sightings from a previously unrecognized manta ray aggregation site... but what they found instead was many shades of blue and curious parrotfish!

However, no data is still useful data. The team are gradually deploying these systems at more sites around the atoll with the hopes of discovering new manta cleaning stations and aggregation sites, and better understanding the seasonality and site preferences of Laamu's manta rays. From May until November, they will be deploying a system at Fushi Kandu, a manta ray cleaning station in the Northeast of the atoll which peaks in sightings during the Southwest monsoon. 🌊



7 remote underwater photography surveys were conducted in April with 295 hours recording time!



A RISING STAR

The Laamu Manta Trust team are very proud of their newest staff member Jinaad (Assistant Project Manager) for being featured as the "Rising Star" in the Maldives Tourism Bulletin in April. In the article, Jinaad talks about how he got to where he is today, how we can address the challenges young Maldivians face in the field of marine conservation and offers advice to locals wanting to enter this field.

Read the full article [here](#). 🌊



22 manta ray sightings confirmed through photo identification



36 social surveys conducted on local islands in Laamu



77 guests dived with and taught about manta rays



49 manta memos sent to guests from dives



BLUE MARINE FOUNDATION



MASTERS STUDENTS IN LAAMU

Just like the Manta Trust, this month, Blue Marine and the Maldives Resilient Reefs Project are hosting research students from University of Exeter, UK, at MRR's base on Laamu Gan island. Professor Callum Roberts and Dr. Julie Hawkins, the course leaders from the university, are also joining the expedition. The students have been assisting the team with their ongoing coral reef and fisheries research projects. So far, they have successfully completed their fish length training to accurately estimate the size of fish underwater and are fully trained on how to complete coral reef surveys.

With this team, Blue Marine and MRR are aiming to conduct surveys of ten coral reef sites on the Northeastern side of the Atoll and will be analyzing this data, together with the data from the coral reef surveys on the Southwestern side of the atoll conducted by the rest of the MUI team earlier this year. This information will show how Laamu's coral reefs have recovered, two years since we conducted our baseline surveys. 🌊



UNDERSTANDING SEAGRASS FISHERIES

In 2019, a masters student from the University of Exeter recorded over 140 species of fish in the seagrass meadows of Laamu Atoll. Many of the fish were juveniles, confirming that the seagrass meadows were acting as nursery habitats. This April, Blue Marine and Maldives Resilient Reefs, in collaboration with University of Northumbria, UK, have embarked on a more comprehensive study to understand the fisheries value of seagrasses in the Maldives.

Field work has been completed on the seagrass meadow of Laamu Hithadhoo and is currently ongoing on the uninhabited island of Laamu Gaadhoo. Researchers are using a variety of different methods to investigate seagrass fish populations such as small nets to sample species that live on the canopy, remote underwater videos to sample highly mobile species of fish that live above the canopy, and quadrat surveys to sample invertebrates. This is very important research which has the potential to influence better seagrass conservation in the Maldives! 🌊



LAAMASEELU MASVERIYA HOST TRAINING

In April, the Blue Marine and MRR team conducted Laamaseelu Masveriya program host training, to build awareness of the vital role the program plays in ensuring that Six Senses Laamu sources sustainably caught local seafood to its guests.

It is important that hosts recognize the importance of the Laamaseelu Masveriya program and support the operations of it. The training was well received among all hosts, with high engagement from multiple resort departments who play a critical role in ensuring the smooth running of the program. 🌊





OLIVE RIDLEY
PROJECT

THE OLIVE RIDLEY PROJECT

NATIONAL RED LIST ASSESSMENT OF TURTLES

The first IUCN national red list assessment of marine reptiles in the Maldives was published on April 7, 2022. The national red list assesses the risk of the species going extinct at regional levels, which aids national reporting and international conventions with specific biodiversity targets. The Maldives Red List will be used for decision making at government levels in regards to species protection and conservation measures.

The Olive Ridley Project's (ORP) CEO Dr. Martin Stelfox and senior scientist Dr. Stephanie Köhnik participated in the working group for the national red list assessment. Dr. Martin led the assessment of olive ridley turtles, while Dr. Stephanie led the assessment for greens and hawksbills. Information acquired from ORP's photo-identification database, nesting research, and entangled turtle research played a critical role in the assessments. From Laamu, the data collected from L. Gaadhoo's nesting beach was also crucial for the assessment of green sea turtle population numbers.

Since very little is known about leatherbacks, loggerhead, and olive ridley, these have been listed at a national level as data deficient. The last recorded sighting of a loggerhead turtle in the Maldives was in 2019 at Hithadhoo Corner, a dive site just five minutes away from Six Senses Laamu, by Blue Marine Foundation.

Now, in the Maldives, hawksbill turtles are listed as critically endangered, with the majority of known local population consisting of juveniles- a reflection of historical decline. Historical data also indicates a 95% collapse of nesting trends in hawksbill population in the Maldives.

Green sea turtles are now listed as endangered in the Maldives, with the most significant turtle population identified in Lhaviyani, Laamu, and Baa. Green sea turtle nesting has also been recorded in nine different atolls, of which Laamu is a hotspot.

ORP is continuing to work with national stakeholders to address the threats and declines to sea turtle population. 🌊



TURTLE RESCUE MISSION



5 turtles successfully
rescued and released

On the afternoon of Sunday, April 17 2022, the watersports operators at Six Senses Laamu, OCEAN Group Maldives, found five turtles unnaturally rolled over, on their backs, and immobilized on an uninhabited island of Laamu Athahendha. OCEAN group's team and their guests - David, Sue, and Natalie Burns - kept the turtles cool and monitored the situation until a rescue team including members of MUI and Laamu's police officers arrived on the scene.

At the scene, the rescue team quickly jumped into action to douse the turtles in water, and seeing movement, slowly and carefully carried each turtle to the beach and flipped it back to its front. The rescuers followed the Olive Ridley Project's code of conduct for sea turtle rescue. Our turtle biologist also took ID-photos of the turtles as well as measurements of it's shell sizes to be sent to the Environment Protection Agency (EPA), which was advising the rescue.

Despite being very confused and a little bloody from a fish hook injury to their neck, all four males made it back to the sea with no issues. The female however, took a little longer to recover. She had an eye injury caused by the pressure exerted on her eye from lying on her back. The team therefore called [Dr. Minnie](#) at the [Marine Turtle Rescue Center](#) just to be sure that she would be okay back in the water. Dr. Minnie assessed the injury through a video call. She assured the rescuers that the turtle would recover once she was over the initial confusion. The female turtle took the longest time to dive down but the team stayed with her till she had gone into the deep.

Once the five sea turtles returned to the sea safely, the Maldives police and the EPA took over the case, to determine the cause and the events leading up to this incident. All five rescued turtles are new to the Laamu sea turtle photo-ID database. 🌊



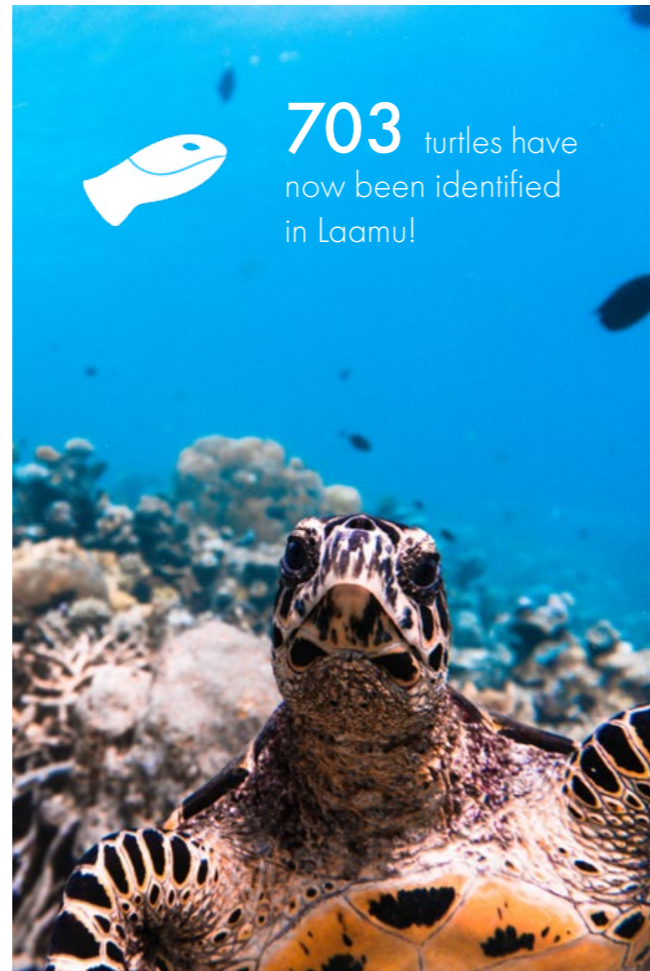
OVER 700 TURTLES IN LAAMU

A key part of ORP's research in Laamu is understanding the population of the atoll and, as of this April, ORP has identified over 700 different individuals of turtles in Laamu!

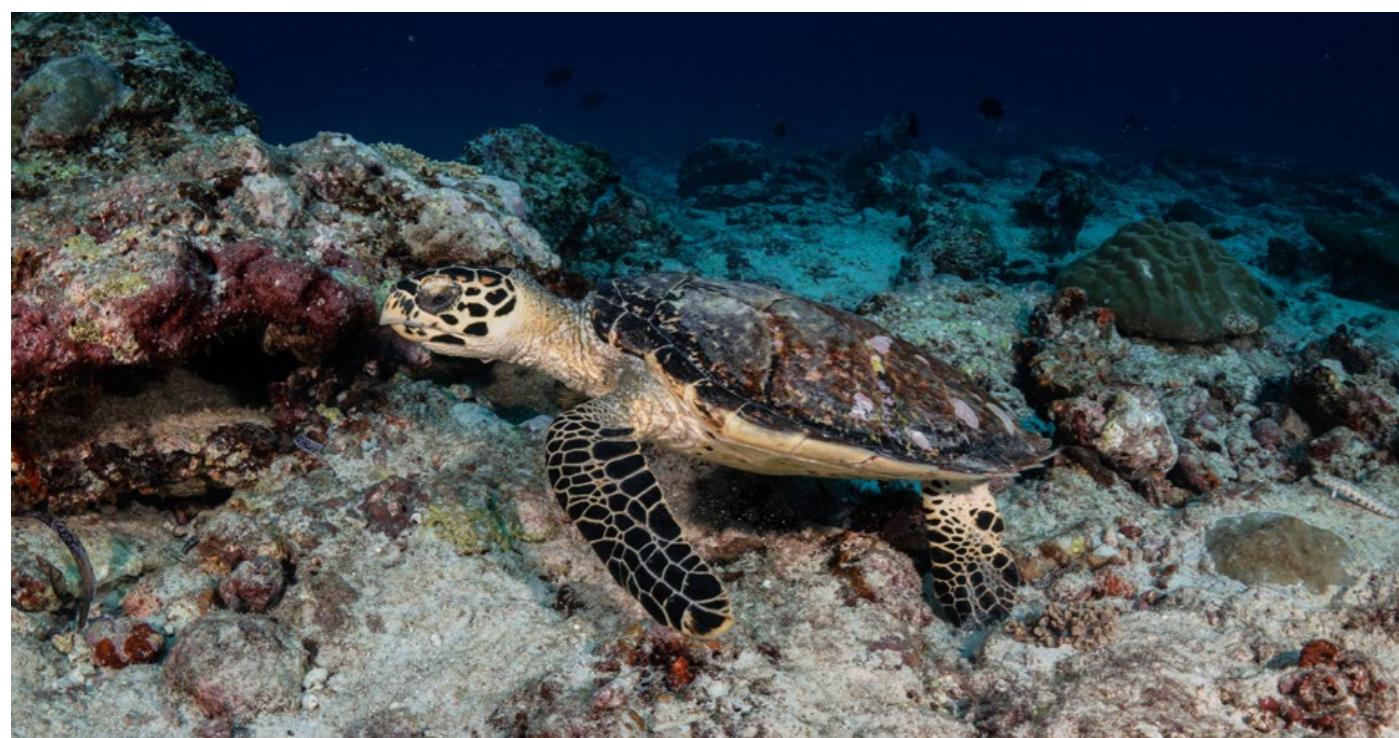
Every turtle has a unique pattern on their face, so by photographing every turtle we see, we can identify them as individuals and add them to a database. ORP's main goal with photo-ID research is to understand the baseline population of turtles in the atoll, the population structure and dynamics of these populations, and the threats and injuries they're facing. The research also focusses on recording the sex and size of turtles identified, as well as their primary behaviors. Re-sighting data is also collected, either by submissions through MUI members or from guest submissions, which gives an indication of their apparent survival rate, allowing ORP to track their movement in a non-invasive manner.

This data helps analyze the population dynamic of turtles by different site types and the frequency of re-sighting. This is a long-term study that will take over 15 years to get accurate results, and 2022 is the fourth year of data collection in Laamu.

In 2022 alone, over 40 different individuals have been identified in Laamu thanks to the efforts of researchers from Six Senses Laamu, Manta Trust, Blue Marine Foundation, in collaboration with Olive Ridley Project. 🌊



703 turtles have now been identified in Laamu!



TURTLES OF THE MONTH

TOM8 & SHELLY

This month's turtles in the spotlight are Tom8 and Shelly! Tom8 and Shelly are two adult residents of Hiithadhoo Corner, both of whom were first recorded in 2016. Tom8 is a large male, while Shelly is a large female that's usually seen resting on the sandy bottom with her head under a rock.

On April 30, 2022, Laamu's Manta Trust's Project Manager, Jas Corbett, saw Tom8 slowly approaching the infamous 'Turtle block' cleaning station, searching for a suitable spot to rest at. Unfortunately, Shelly came into his line of sight at this moment, as she also tried to take a seat at the Turtle block, and Tom8 wasn't having it. He quickly dissuaded her to leave the cleaning station, which included displays of aggressive behavior such as biting, kicking, and trying to roll her over. In the end, Shelly gave in and settled down far off from the cleaning station, while Tom8 claimed himself a victor's seat on top of the cleaning station.

Tom8 can often be seen lounging on the cleaning station, but this is the first time a territorial dispute has been recorded between these two turtles. It's an indication of the complex social lives of the turtles, who are known to be solitary, and the lengths they may go to get a decent resting spot. 🌊



149 encounters of turtles were recorded, including 2 from guests



26 never seen before turtles were identified

OUR HOME

INTRODUCING CLIMATE WARRIORS

In conjunction of the celebration of Earth Day, the Earth Lab team at Six Senses Laamu was delighted to launch the Climate Warrior program for the Little VIPs at the Den (Six Senses Laamu's Kids Club) on April 22, 2022.

The Climate Warrior program focuses on inspiring and empowering children to have a positive impact on their environment and communities. During the specially crafted activities, the kids learn about the effects of climate change, how we can mitigate it and the daily habits that Warriors can share with their families and friends.

The Climate Warrior program is divided into three days of activities, which includes tea-making, paper recycling, clean-ups on local islands with brand auditing and, most importantly, making a plea to local stakeholders encouraging change. 🌊



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

Leanna Crowley

Marketing Communications Manager
leanna.crowley@sixsenses.com

Philippa Roe

Head Marine Biologist
philippa.roe@sixsenses.com

To stay up to date with the latest news, events and visiting experts follow the Maldives Underwater Initiative and Six Senses Laamu on social media

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