

BLUE & GREEN LAAMU

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

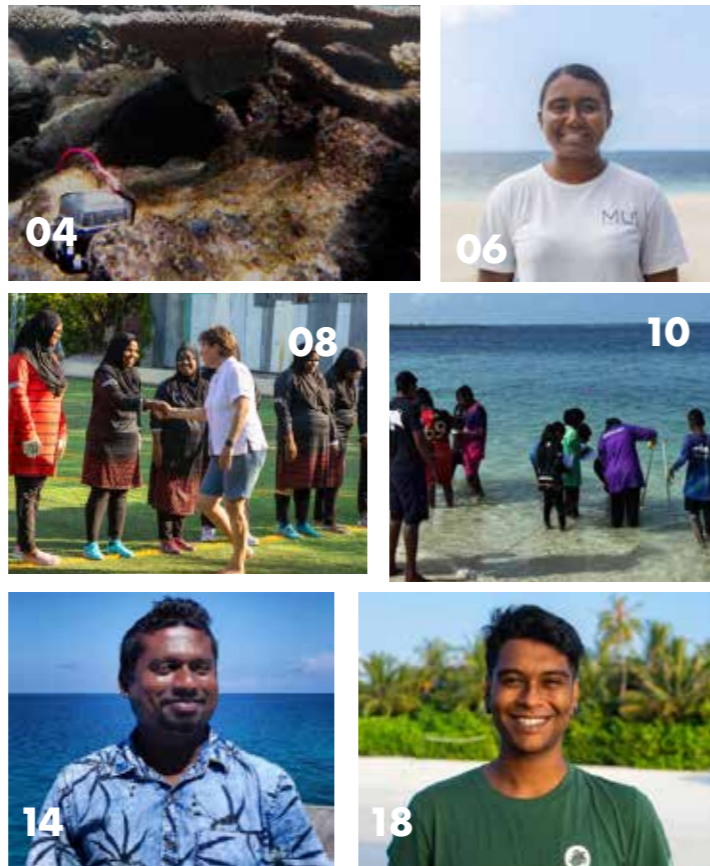
MARCH 2024







MALDIVES UNDERWATER INITIATIVE by Six Senses Laamu

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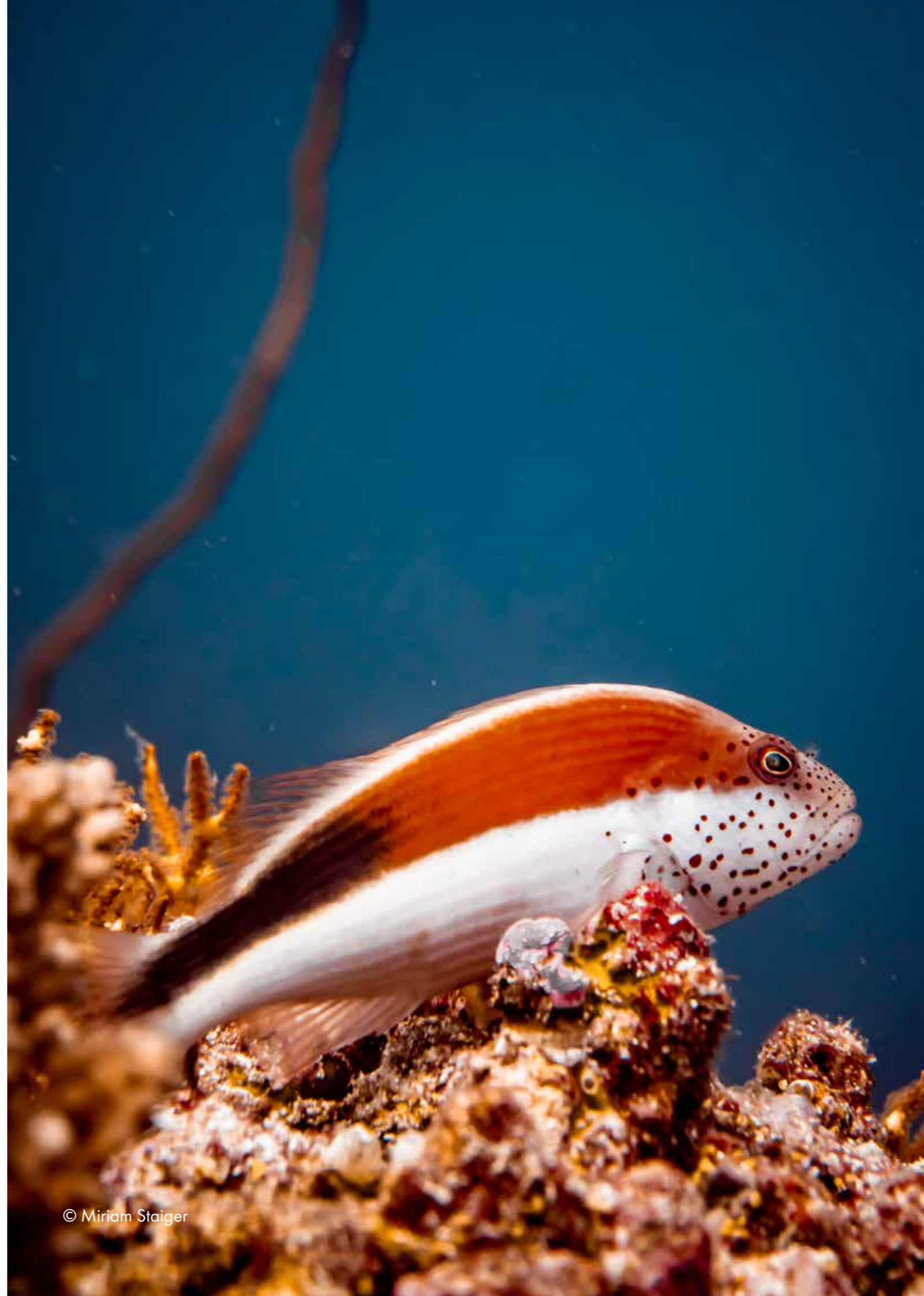


THE BIG STUFF IN 95% OF OBSERVATIONS

-  **27%** had blacktip reef sharks
-  **25%** had spotted eagle rays
-  **38%** had hawksbill turtles
-  **53%** had green turtles

OUR EDUCATION

-  **1442** moments of education were shared with guests
-  **115** moments of education were shared with hosts
-  **27** moments of education were shared with the community



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SIX SENSES CONSERVATION

CORALS IN ALL DIMENSIONS

During March, the MUI team has been monitoring the reef using their Autonomous Surface Vehicle, otherwise known as Brie. Brie navigates along the reef crest equipped with a camera, following accurate GPS coordinates and undertaking photogrammetry surveys. This data collected by Brie is then processed by the team to create detailed 3D models of the reef.

The MUI team has conducted multiple successful surveys on the reefs around Six Senses Laamu, Olhuveli Island. With these 3D models, the structural complexity, coral cover, coral species diversity and abundance, can be assessed. It is especially important to catalog this information now due to the predicting bleaching event. These 3D models serve a critical purpose by helping the team understand the severity of forecasted coral bleaching events. Additionally, these 3D models pinpoint areas of reef degradation,

guiding restoration using Larval Restoration methods. Furthermore, the team is actively 3D modeling various individual coral colonies of different coral species to add to coral identification resources. The team hopes the 3D models will aid species identification across multiple projects, often one of the more challenging parts of coral research!



5000+ photos taken to map one section of reef



MUI IS LISTENING AND THE WORLD IS WATCHING

The MUI team is continuing their exciting bioacoustics research here in Laamu atoll. Bioacoustics is a relatively understudied area of marine biology, particularly in the Maldives, however it could be instrumental in understanding the full complexities of the underwater world and also be a key to protecting it.

The MUI team has been regularly putting down long term hydromoths down on a variety of our reefs around Laamu to collect the full range of sounds that are being made on Laamu reefs. This audio will be analyzed to

help us understand the different sounds being made by different types of reef, and potentially help us identify key sounds on a healthy reef compared to a less healthy or degraded reef.

MUI's initial research with Professor Steve Simpson in March last year will be broadcast in April as part of the exciting Our Changing Planet series, keep an eye out on next months Blue and Green to learn more about it.



3 Hydromoths deployed

EASTER FESTIVITIES



This easter the MUI team joined in the festivities by inviting guests to the SHELL to take part in our Games afternoon on Easter Sunday!

Games included challenges to find certain animals around the SHELL, finding facts within the variety of displayed information around the SHELL and also word searches and animal matches! Lots of fun was had celebrating Easter and the kids enjoyed running around the SHELL learning from all of our many exhibit tables and interactive experiences. These games proved such a hit that the MUI team will be using many of these new challenges and games in our weekly kids club sessions so all the children who visit the resort get a chance to search the SHELL for elusive animals hiding in our displays.



4 new games and challenges based around the SHELL

JMB CONTINUES TO GROW

The JMB team continues to grow each month, with 3 new students and 2 returning students joining JMB sessions in March. Sessions taken in March included How We Got Here, our introductory session, perfect for new students to learn more about the MUI team and how the Maldives was formed. We also ran some of our more advanced sessions for our returning students such as Counting Corals, which gives students a sneak peak into coral research here in Laamu and they even get a chance to count some of our growing corals in our settlement tanks as well as survey the corals on our beautiful house reef.

It is always wonderful when we have students return after a year or two, knowing that their JMB sessions previously made a lasting impact on the student and that they want to continue their journey with us.



3 new students

WELCOME TO THE TEAM THUVA!



Welcome our newest team member! Thuva has joined MUI as the MUI Intern!

Thuva's passion for marine biology was sparked by countless hours watching Nat Geo Wild documentaries during childhood. However, it was the influence of her grandfather that truly cemented her career path in this field. From working at the Maldives Marine Research Institute, conducting coral reef research, to simultaneously pursuing a divemaster certification while completing her bachelor's degree online, Thuva has always been immersed in the world of marine biology. An internship in turtle conservation in Malaysia further enriched her practical experience. Recently graduating with a Bachelor's degree in Aquatic Resource Science and Management from Universiti Malaysia Sarawak (UNIMAS), Thuva is eager to utilize her knowledge and continue learning while gaining more fieldwork experience here at MUI.



1 new intern joined the team

OUR COMMUNITY

VICTORY AND UNITY ON WOMEN'S DAY

In the spirit of Women's Day, the women of Maamendhoo recently showcased their strength and unity in a friendly football match against the resort staff. With laughter and camaraderie filling the air, both teams displayed remarkable sportsmanship. As the women took to the field, their unity became a

powerful reminder of the strength found in togetherness.

Amidst cheers from spectators, the women of Maamendhoo demonstrated their exceptional skills and teamwork, ultimately securing a triumphant victory with a score of 5-1. However, beyond the scoreline, the

match served as a beautiful reminder of the power of community and togetherness, their collective spirit and support highlighted the strength found in coming together. In victory, they celebrated not just as players, but as a tightly-knit community bound by solidarity and sisterhood.



 **25** Maamendhoo players and supporters

 **8** Host players



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THE MANTA TRUST



First results of acoustic study



11 manta ray sightings



5 manta rays identified

MANTA TRUST ON THE BEACH

Manta Trust's assistant project manager Zakwan recently organized a beach monitoring session with the children of Maamendhoo. The aim was to teach them how to protect their local environment and develop it in a sustainable way. 19 kids from Maamendhoo School learned about the methodology of beach monitoring, its uses and the benefits of learning beach monitoring.

The kids were able to learn how to properly conduct beach surveys using the tools they have on hand and use the environment to their advantage. It was great to see how engaged and receptive the kids were during the lesson, picking up and learning the strategies quickly, demonstrating very impressive critical thinking skills and overall capacity. The session was educational and fun, encouraging the future leaders to advocate for sustainable development.



19 kids learnt about beach surveys



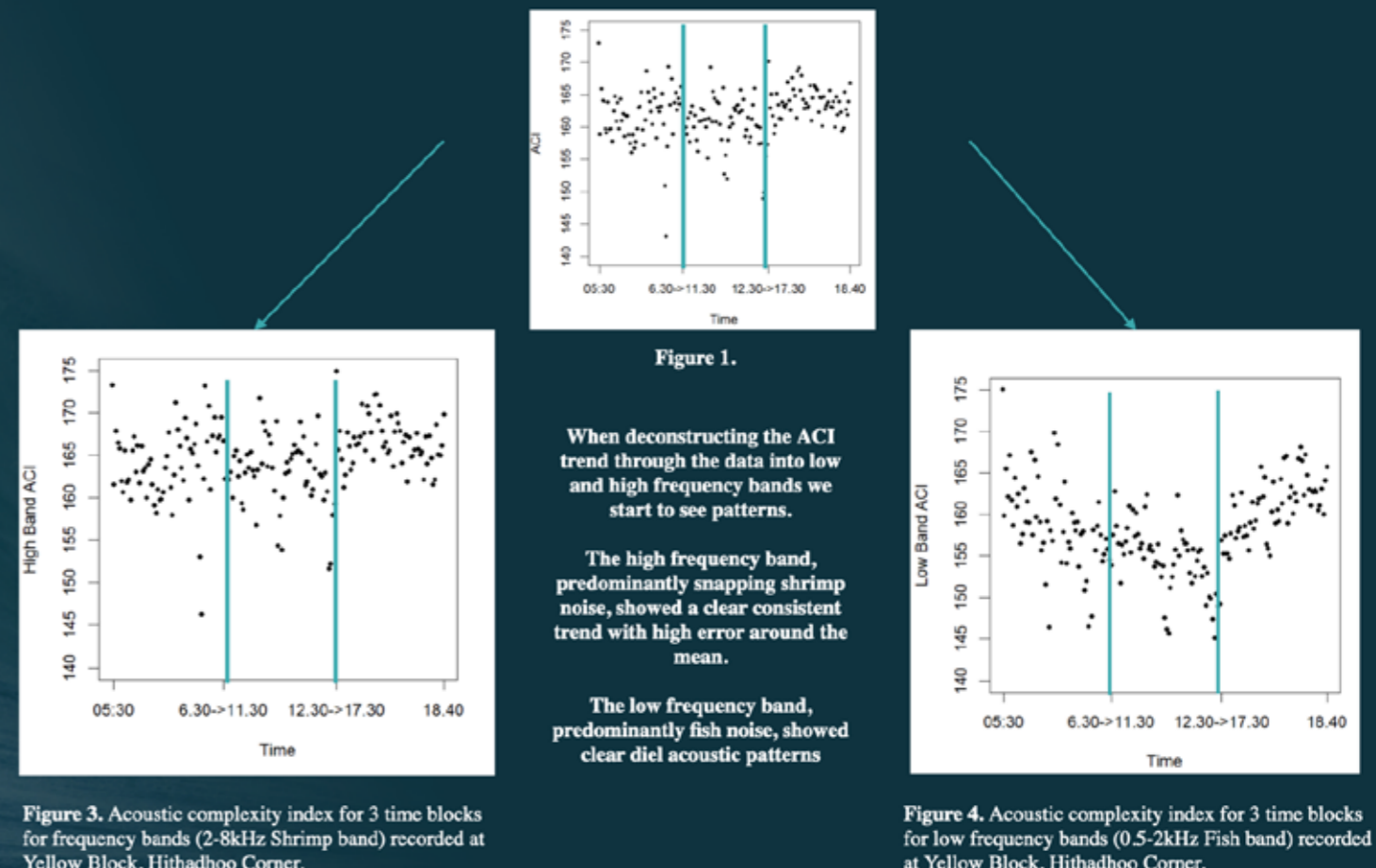
LISTENING TO CLEANING STATIONS

The Manta Trust's Master's students Sam and Mischa from the University of Bristol have had their heads in statistical analysis for the last couple of months to get a first insight into the acoustic data collected at Laamu cleaning stations. Under the guidance of Prof. Steve Simpson, they applied mathematical models to a small snapshot of the huge ton of data collected within the last 11 months - and safe to say, this project is already delivering exciting news!

Even from just this first check, they have seen significant differences between the cleaning stations in terms of acoustic complexity, abundance and intensity. This already shows us that the different reefs have their very own ecological and anthropogenic-related differences which is reflected in their acoustic footprint and the characteristics of the surrounding soundscape.

After some more detailed analysis and filtering, essentially removing high frequencies and focussing

on fish-vocalizations, they discovered varying levels of acoustic complexity throughout the day. There was high complexity in the morning, dropping off towards midday then suddenly rising again in the evening/dusk (see U-shape in graph). As the complexity reflects the number of sources of sound in a reef, this trend shows us that during the middle of the day fewer fish are vocalizing, potentially as the nocturnal species go to sleep or dive deeper for feeding. This shows us that even a very small sound snapshot of the reef provides us with an abundance of information ready to unpick. The team is now very excited that this project is being extended into Baa Atoll, a much busier area than Laamu Atoll; this will allow us to see whether these patterns and behaviors vary significantly between manta cleaning stations in different areas, as well as understand more about how reef health, time of day, lunar cycles and human activities impact the cleaning stations from an acoustic perspective.



GOPRO ALLAN GOES ON THE FISH WALL OF FAME

The team is so excited to have received more donations in the form of camera tripods, housings, children's books and more. Allan, you are so generous and we are so grateful for your support. After so many GoPros and incredibly useful accessories, the team have decided to call him "GoPro Allan". He now has his own fish on our wall of fame in the SHELL. Thank you again Allan for all your incredible support.



 1 guest donation

MIRI'S FEATURE IN TRAVEL + LEISURE



Miriam Staiger

Project Manager Maldives Manta Conservation Program (Manta Trust) at Six Senses Laamu



This month, the Manta Trust was featured in Travel+Leisure. With the title "What Does a Marine Biologist in the Maldives Do All Day? It's Even Better Than You Think" the magazine invites readers from around the world to get a small insight into a day in the life of a marine biologist in the Maldives. Our project manager Miri told them what it's like to study manta rays at Six Senses Laamu, and safe to say it is the best job in the world. From diving with manta rays and conducting exciting new research, to inspiring the next generation of marine stewards and letting guests dive into the amazing manta ray world - it never gets boring!

 1 magazine feature



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BLUE MARINE FOUNDATION



 **5** fishers sold fish

 **11** guest recreational fishing trips

 **116** fish landed

FISHER OF THE MONTH - MOHAMMED NAUSHAD

Naushad has been supplying fish to the resort even before the Laamaseelu Masveriyaa (LSMV) programme came into effect in February 2020. He is primarily a tuna fisherman who catches reef fish when his fishing dhoni is in the atoll waters. He really appreciates the Laamaseelu Masveriyaa programme for its sustainability focus as he believes that the future of the fisheries in the atoll could only be maintained if more people follow sustainability standards. He is a reliable fisher who the resort can always count on. In addition to being an open water certified diver, Naushad also collects lobsters when he is in his home island of Hithadhoo.



 **4** landings

 **2** sustainability points accrued

FISH OF THE MONTH - BLUEFIN TREVALLY



In March, the local fishers landed many bluefin trevallies through the Laamaseelu Masveriyaa programme. The bluefin trevally, scientifically known as *Caranx Melampygus* is a striking fish species found in tropical and subtropical waters all across the world, particularly in the Indian and Pacific Ocean. While adult bluefin trevally primarily feed on crustaceans and cephalopods (octopus, squids etc), juveniles consume a higher amount of crustaceans but slowly change into a more fish based diet as they grow. Despite its predatory nature, it also plays a crucial ecological role by helping to control the population of smaller marine species. Beyond its ecological significance, the bluefin trevally holds cultural importance in the local communities and traditional fishing practices in Maldives.

WELCOME DUA!

Meet Dua Abdullah, who joined the Blue Marine and Maldives Resilient Reefs team as a research and fisheries intern based in Six Senses Laamu.

Having spent her childhood snorkeling around the local reefs in Lh.Naifaru where she was born and raised, Dua developed an intense interest in marine life. Dua has always desired to be a diver working in a marine related field, and she just recently got certified as a rescue diver. Her dream began when she first went snorkeling at the age of 9. Since then, she has had a strong desire to help protect marine life and raise public awareness of environmental issues, and she enjoys sharing her knowledge with others.

After completing her secondary education at Madhrasathul Ifthithaah in Lh.naifaru, Dua worked as a marine biology intern at a sea turtle rescue center, Atoll Marine Centre, before becoming a marine biologist assistant and staying there for one and a half years. During her stay at AMC, she developed a strong interest in environmental education and marine biology, specifically reef fishes and marine megafauna in the Maldives, which prompted her to apply for this internship and to study marine biology in the future!

 **1** new intern joined the team





**OLIVE RIDLEY
PROJECT**

THE OLIVE RIDLEY PROJECT



5 newly identified turtles in Laamu



96 photo ID submissions by MUI and DBD



26 in-water surveys complete



1050 turtles in Laamu

WELCOME ALWAN!

Join us in welcoming Alwan, ORP's new Sea Turtle Biologist intern!

Growing up frequently traveling the islands of the Maldives, Alwan has had a deep connection to the ocean. Whether it be time spent snorkeling or diving, he's always been fascinated by life underwater and has had a strong passion for the preservation of marine life. After spending the last few years abroad in a different field, he's looking forward to starting a new chapter in something so close to heart, focusing on conservation through research and raising awareness within the local communities. ORP's holistic approach to the conservation of sea turtles and their natural environments really struck a chord with Alwan and he is eager to learn so much more about ORP's work over the next 4 months working with ORP and the MUI team at Six Senses Laamu.



1 new ORP intern



THE RESCUE STORY OF 'RAALHU'

Meet Raalhu!

Raalhu, meaning "wave" in Dhivehi, is an adult female olive ridley turtle that was spotted drifting just off the resort House Reef, entangled in a ghost net and unable to dive. The Olive Ridley Project team acted quickly to safely retrieve her from the water while working with their veterinary team to assess her condition and determine whether she needed emergency transport to the Rescue Center in Baa Atoll.

Sadly, upon closer inspection, Raalhu had suffered deep ligature injuries on her front right flipper from an entangled mix of fishing line and plastic mesh, which had also

caused her to lose most of her flipper. She also had cuts on her back flipper from a piece of fishing net and had ingested fishing line that, in the worst case, might have been attached to a fishing hook. Needless to say, Raalhu was in poor condition and needed immediate transport to the Rescue Center for further treatment. Despite this, Raalhu showed some incredible fighting spirit and we had no doubt that she would pull through.



1 rescued turtle



The very next day, Raalhu flew out on our very own "Flying Turtle" seaplane to Malé and then to Coco Palm Dhuni Kolhu in Baa Atoll, where our Rescue Center is based. Following a comprehensive health assessment, Raalhu was transferred to her new enclosure where she is resting and acclimatizing to her new temporary home. A huge thank you to the resort staff that helped in making sure Raalhu was well-looked after before making her trip out of Laamu! We wish Raalhu a speedy recovery and hope to see her returning to the ocean soon!

LAAMU MAKES IT DEBUT AT THE 42ND INTERNATIONAL SEA TURTLE SYMPOSIUM

In some very exciting news, a few of ORP Laamu's projects were represented for the first time at the 42nd International Sea Turtle Symposium (ISTS) that was held at Pattaya, Thailand from March 24th-29th. The Symposium is an annual event organised by the International Sea Turtle Society that brings together sea turtle biologists, conservationists, educators, community leaders and advocates to share knowledge, build capacity, network and collaborate and ultimately, to leverage conservation efforts for sea turtles.

ORP conducted a workshop on photo-ID based on the years of expertise in collecting photo-ID data in the Maldives - which is now one of the most extensive in-water databases in the world. Additionally, ORP also presented on the Sea Turtle Behavioral study conducted in Laamu in 2023, as one of its poster presentations.

Additionally, ORP participated in the largest regional gathering of the IOSEA, with over 120 participants. During this, Isha Afeef, ORP's Programme Manager for the Maldives, and Enas Mohamed Riyaz, a co-supervisor of the project from the Environmental Protection Agency

of the Maldives (EPA), both presented on the progress and successes of the Gaadhoo Ranger Programme along with other updates from Maldives. This presentation highlighted the strong collaboration between the Maldivian government and ORP in working towards protecting sea turtles and their habitats. Enas also gave an oral presentation on the Gaadhoo Ranger programme, highlighting the importance of empowering communities in bringing about behavioral change.

The Gaadhoo Ranger Program was even featured in the 2024 edition of the SWOT (The State of the World Sea Turtles) report - an award-winning magazine highlighting the success stories, innovations, and new findings from sea turtle conservation.

Additionally, the work undertaken by Amy Feakes on sea turtle sociability in Hithadhoo Corner was also presented as a poster at the Symposium.

Isha is also the first Maldivian from ORP to attend the symposium, marking a significant milestone in the development of ORP Maldives!

 **7** ORP staff attended

 **150+** people reached



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MAAHEFUN IN MAAVAH ON INTERNATIONAL WOMEN'S DAY

Working together with communities is not just about monitoring and data collection - it's also engaging in their celebratory occasions! And our Sea Turtle Conservation Officer for L. Maavah, Ibaadh, got the chance to just that when he joined the Women's Development Committee in their celebration of International Women's Day!

On March 8th, Ibaadh helped organise and run a special Maahefun (a traditional event celebrating Ramadan) event for the WDC and all female council staff as part of celebrations for International Women's Day and to welcome the start of Ramadan. During the event, Ibaadh introduced himself to the community members and highlighted his new role with ORP in helping to tackle the issue of sea turtle illegal harvest around the Maavah - a recognised hotspot for sea turtle meat consumption. He led discussions on the negative impacts that humans can have on sea turtles while also highlighting the importance of protecting them for reasons such as generating income through sustainable tourism. A total of 34 people participated in the event,

and Ibaadh engaged with 23 people, speaking about ORP's mission to change community perceptions about sea turtles and improve protection for them in Laamu. This is the first community event that Ibaadh has attended in his new role and as a representative of ORP. He is currently liaising with the school and local stakeholder groups to run regular educational and awareness sessions after the end of Ramadan.



 34 people attended

TURTLE IN THE SPOTLIGHT!

Say "Hello" to Linda (HK3777)!

Linda is a female hawksbill turtle who is frequently seen foraging along the sloping reefs of Kurethi - a hotspot in Laamu Atoll for the species. She is one of 134 identified hawksbill turtles on this 2 km stretch of reef and also one of the few adult females seen here! Since being sighting in April 2015, she has been encountered 9 times, which, while not a high number of encounters, does indicate an

impressive residency period of 9 years! Linda carries herself like a "Queen" on the reef, and her calm demeanor makes encounters with her a treat for divers.

The population of identified hawksbill in Laamu totals 653 individuals and comprises almost entirely of juveniles, making up 91.1% of the hawksbills of known size. Only 7.2% of the known population is female, and 1.7% is male, which follows the national

trend of a juvenile dominated demographic for this species. It is not yet understood why this is the case for the Maldivian population, but researchers at ORP suggest that the reefs around this island nation may only act as a developmental habitat for young hawksbills to forage and grow to adulthood, before moving on to other foraging grounds. This isn't yet the case for Linda, and we hope to continue seeing her on our reefs for years to come.



OUR HOME

 **26** guests experienced our local islands

 **26, 215** bottles of water made for guests

 **50** guests joined the sustainability tour

 **51, 417** kWh renewable energy

 **5,560** Kg metal recycled with SecureBag

 **315** eggs produced

 **32** Junior VIPs joined the organic garden tour

 **11** guests joined Earth Lab workshops

NATURAL DYE MAKING

Food waste is a big resource for us in Earth Lab. While we make almost 5,000 kg of compost each month, there is so much more that can be done with our leftovers. Citrus peels are used to make a cleaning solution, coffee grounds are added into our soaps to help exfoliate and invigorate the skin, and now certain foods are being used to make natural dyes.

When it comes to making natural dyes, there's a world of creativity waiting to be explored. Avocados, cabbage, spinach, red onion and pomegranate are some of the foods that we are experimenting with and turning into dyes, which we then use to make beautiful tie-dyed bandanas, handkerchiefs or pocket squares.

In our new workshop, we go through the process of extracting color from food or plants - one of the highlights is foraging for materials in our jungle and garden. This not only helps us reconnect with nature but also helps to reduce food waste. Best of all, it is beginner friendly and something that you can do at home! Whether you're a seasoned crafter or a curious beginner, there's something magical about the process of transforming natural materials into colorful works of art.



EASTER IN EARTH LAB

Easter was full of sustainability-focused experiences! During this time we did some egg-stra special activities designed for our little big VIPs. This included the Garden Gurus and Eggsplorers Extravaganza where we went to our organic garden and chicken farm. In the garden we learnt about what plants need to survive and sampled some of the herbs that we grow. In the Kukulhu Village chicken farm, we fed the chickens and experienced first-hand some of the language of chickens - learning the difference between a 'bok bok' and a 'bokaak'! is surprisingly intuitive.

We also made soap from coconut oil, recycled paper and crafted natural dyes that we used to color bandanas. To top it all off, we went on a local island adventure. In this excursion, we went to the local island of Hithadhoo, explored the streets, seeing the school, shops and the ancient mosque. We ended the tour with the best activity of all, a fun time at the brand new kids playground. Hold my juice box, I'm going to fly down this slide!



 **32** little VIP guests joined in Easter activities



WE COULD NOT HAVE DONE IT WITHOUT YOU!

We are tremendously grateful to the multitude of donors who so generously donated funds to the MUI team's research projects; we are indebted to you all.

A special shout-out to our friends who donated \$10,000 USD and more:

Jeffrey
Andy and Amy
Erin and Don
Take Two London
Sabine and Guy

We look forward to sharing with you the achievements that you made possible.

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

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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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