ANNUAL REPORT 2019

Front cover photo © Alex Mustard

OUR STORY

I am incredibly grateful and feel tremendously lucky to have been able to call Laamu my home for the last nine years. Every day I discover new beauty on land, underwater and within the community. As an avid diver and underwater photographer & videographer, I am constantly in awe of the magical underwater world and inspired by conservation photographers who tell stories with their incredible images; images which inspire and give hope, but also images that make one keenly aware of the fragile state of our natural world and the responsibility we have to protect it.

Every picture tells a story through which we hope to educate, inspire, and do our part to help save the planet. The team and I strive to share our passion for the incredible life that exists right here in Laamu, and we hope to inspire others to join us on these adventures.

Our conservation story began the same day Six Senses Laamu first opened its doors in 2011. Sustainability, wellness (for people and the planet), and marine conservation have been core pillars for the resort from the beginning. We have welcomed nature enthusiasts, marine biologists, sustainability ambassadors, wellness experts and scientific advisors, and have developed three incredible partnerships over the years with The Manta Trust, Blue Marine Foundation and The Olive Ridley Project. In 2018 it was apparent that our team of marine conservationists had grown to become an institution in their own right, and thus the Maldives Underwater Initiative (MUI) was formed.

In its second year, MUI has made incredible achievements towards our goal of protecting the Laamu Atoll. The teamwork and determination brought about new scientific discoveries, incredible experiences for our guests and invaluable partnerships within our wonderful local community. With profound thanks and gratitude to our owners, our guests, our supporters, our hosts, and Six Senses Hotels Resorts & Spas, we have been able to start making our goals a reality and we have ambitious plans to achieve much more in the years to come.

We release this 2019 annual report in the midst of a global pandemic; a pandemic which has had an unprecedented impact on lives, societies and economies, and a pandemic which has shown the detrimental effects humankind can have when nature's laws are ignored. As we embark on defining this new chapter together, I am more determined than ever to make healthy communities, sustainable development, species protection, and habitat conservation of utmost priority in Laamu Atoll. My wish is that in the wake of all that has happened, more people will realize the importance of conservation, sustainability, and wellness; more people will choose to travel to places which leave them in awe and full of gratitude for nature's beauty; and more people will work with companies and organizations that inspire them to take action in their personal lives to make the world a better place. In pursuit of making this wish a reality, myself and the rest of the MUI team commit to continuously inspiring others, continuously driving action, and continuously spreading these important messages of wellness, sustainability, and conservation within our spheres of influence and beyond. Thank you so much for joining us on this journey and we hope to reconnect with you soon.

#WithLoveFromLaamu

Marteyne van Well
General Manager, Six Senses Laamu

OUR

MISSION

To lead the tourism industry in the Maldives through meaningful marine conservation efforts based on research, education and community outreach.

OUR

VISION

A local and global community of marine stewards that will create a culture of positive action for our oceans in Laamu and beyond.

Photo credit © Matt Porteous

FOR

SHELLEY

This report is dedicated to our beloved friend Shelley, who believed every interaction, no matter how short, is an opportunity to inspire, educate and motivate. You are dearly missed but you continue to inspire and guide us through your teaching, legacy and unwavering friendship.

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SIX SENSES

LAAMU

SIX SENSES
LAAMU

There is no better designer than nature, and we have a duty to respect it. But who says sustainability can't be sumptuous? Or that travel can't be purposeful? At Six Senses Hotels Resorts Spas, we believe it can.

The home base of Maldives Underwater Initiative, Six Senses Laamu sets itself apart from the 144 other resorts in the Maldives with its dedication to sustainability and marine conservation. Six Senses Laamu has provided us with the resources to conduct leading research, a captive audience through our guests and an incredible home within Laamu's community.

9 years of sustainable tourism

USD 163,219 spent on local community and environmental projects

1 Sustainability Manager

5 Specialist Marine Biologists

1 Community and Outreach Manager

1 Permaculturalist

Photo credit © Leanna Crowley

Manta TRUST

THE MANTA TRUST

The Manta Trust is a UK-registered charity that coordinates global mobulid research and conservation efforts. Their mission is to conserve mobulid rays and their habitats, through research, education and collaboration. Since 2014, the Manta Trust have been working in Laamu to study the local manta ray population and to educate guests and the local community about the importance and vulnerability of manta rays in the Maldives.

5 years of partnership with Six Senses Laamu

2 permanent staff based at Six Senses Laamu

132 manta rays identified in Laamu

Photo credit © Alex Mustard

BLUE MARINE

FOUNDATION

Blue Marine Foundation (BLUE) exists to combat overfishing and the destruction of biodiversity – arguably the largest problem facing the world's oceans – by delivering practical conservation solutions, including the creation of large-scale marine reserves. Since 2016, the BLUE team at Six Senses Laamu has been working closely with the local community to address knowledge gaps and work towards better fisheries management and creation of functional marine reserves. Their work focuses on strengthening local capacity to protect their natural resources and working with all stakehlders to implement sustainable tourism and fisheries initiatives.

3 years of partnership with Six Senses Laamu

2 permanent staff based at Six Senses Laamu

5 areas in Laamu committed for protection

BLUE MARINE FOUNDATION

THE OLIVE RIDLEY
PROJECT

The Olive Ridley Project is on a mission to protect sea turtles and their habitats in the Indian Ocean through research, rehabilitation, education and outreach. Since 2018, a sea turtle biologist has been stationed at Six Senses Laamu to pursue the project's mission in the south of the Maldives. In Laamu, Olive Ridley Project focuses on studying the local turtle populations, monitoring turtle nests, and collecting data on ghost nets found in and around the atoll. Education, for both the local community and international guests, is also a huge focus of their work in Laamu.

1 year of partnership with Six Senses Laamu

1 permanent staff based at Six Senses Laamu

478 turtles identified in Laamu

OLIVE RIDLEY PROJECT

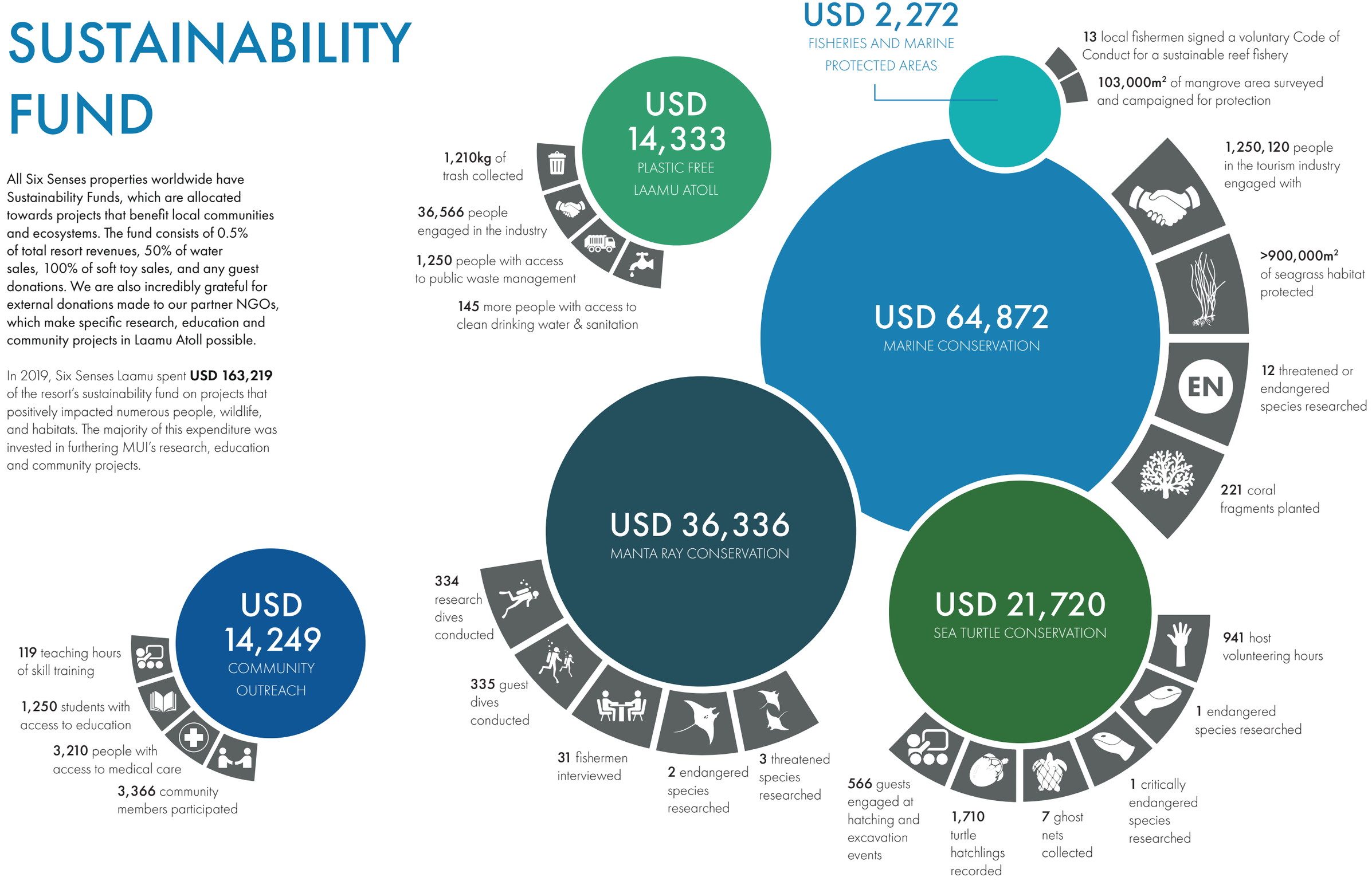
Photo credit © Alex Mustard

SIX SENSES

SUSTAINABILITY FUND

All Six Senses properties worldwide have Sustainability Funds, which are allocated towards projects that benefit local communities and ecosystems. The fund consists of 0.5% of total resort revenues, 50% of water sales, 100% of soft toy sales, and any guest donations. We are also incredibly grateful for external donations made to our partner NGOs, which make specific research, education and community projects in Laamu Atoll possible.

In 2019, Six Senses Laamu spent **USD 163,219** of the resort's sustainability fund on projects that positively impacted numerous people, wildlife, and habitats. The majority of this expenditure was invested in furthering MUI's research, education and community projects.



OUR GLOBAL
NETWORK


Dr. Mark Erdmann presenting to guests and hosts the new species of fish he discovered during a week-long trip to Six Senses Laamu.

Dr. Martin Stelfox,
Olive Ridley Project, Maldives
(Sea turtle conservation)

Dr. Eleonora Manca
Joint Nature Conservation Committee, UK
(Marine mapping and sediment dynamics)

Roger Munns,
Underwater Cameraman, UK
(Storytelling to aid conservation)

Dr. Alex Mustard MBE,
Underwater Photographer, UK
(Renowned photography and teaching)

Dr. Paul Kench,
Simon Fraser University, Canada
(Sediment dynamics and atoll and island formation)

Prof. Callum Roberts,
University of York, UK
(Marine conservation and scientific advisor to BBC's Blue Planet II)

Dr. David Vaughan,
Mote Marine Laboratory, USA
(Coral reef restoration and aquaculture)

Dr. Guy Stevens
The Manta Trust, UK
(Manta ray research and conservation)

Prof. Yvonne Sadovy,
University of Hong Kong, Hong Kong
(Fisheries conservation and spawning aggregations)

Andrew and Marit Miners, Misool Foundation
Conservation International, Indonesia
(Private MPA's establishment and management)

Mariyam Shidha Afzal,
Environmental Protection Agency, Maldives
(Coral identification and biodiversity)

Dr. Mark Erdmann,
Conservation International, Indonesia
(Marine protected area management)

Dr. Michael Rasheed,
James Cook University, Australia
(Seagrass ecology)

Dr. Mike van Kuelen,
Murdoch University, Australia
(Seagrass ecology and restoration)

Dr. Paul York,
James Cook University, Australia
(Seagrass ecology)

Dr. Gerry Allen,
Western Australian Museum, Australia
(Finding new fish species in the Maldives)

Prof. Peter Macreadie,
Deakin University, Australia
(Blue carbon valuation)

At the Maldives Underwater Initiative we recognise the value of external partnerships. We have developed a network of global experts to assist our research and help tackle Maldivian conservation challenges.

Over the years we have invited some of the world's leading marine conservationists to Laamu. In 2019 we worked with a range of researchers and storytellers, entrepreneurs and lecturers, all of whom played a vital role in helping us achieve our goals this year.

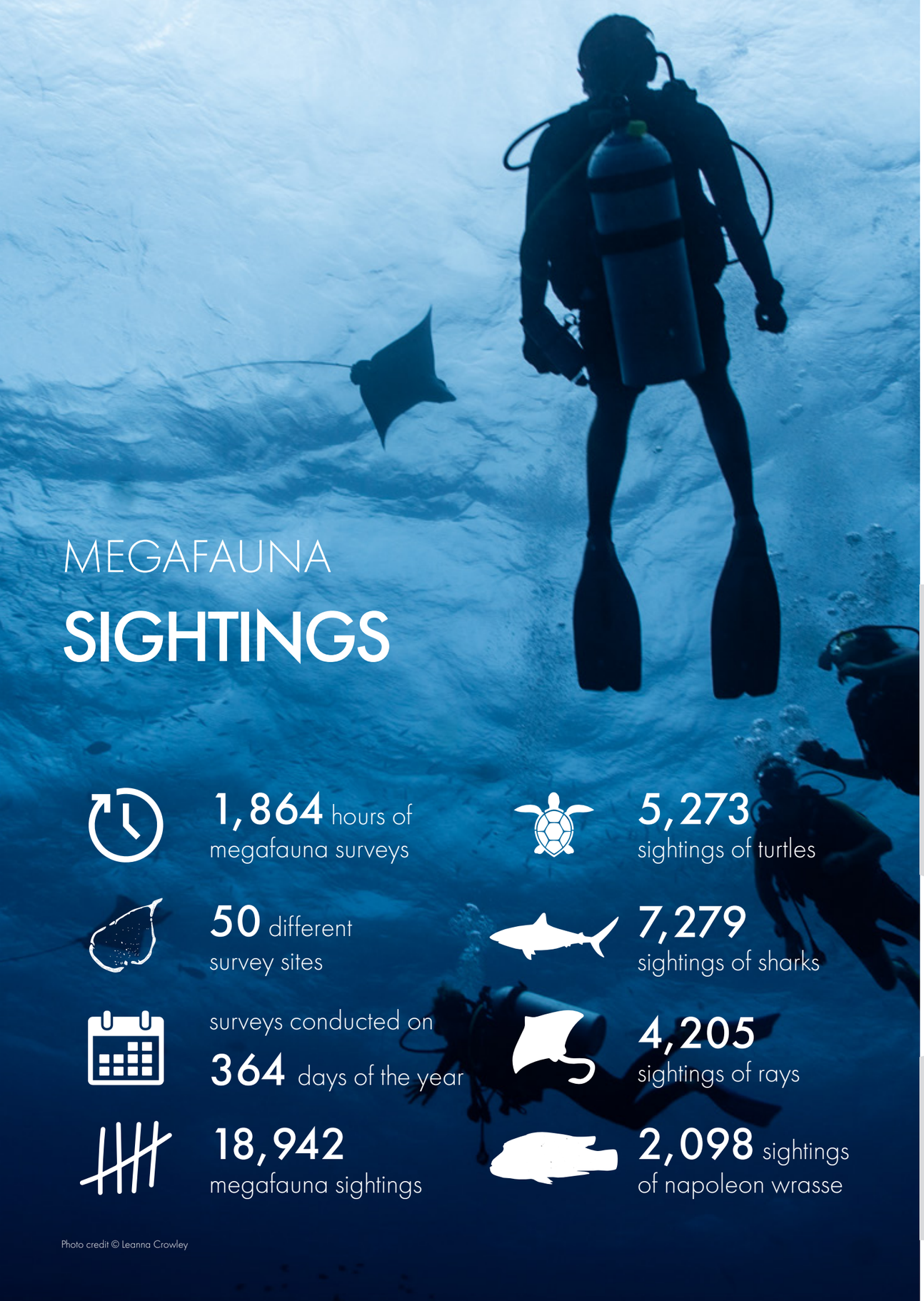

Dr. Mike Rasheed explaining seagrass monitoring techniques to Laamu's citizen scientists. On his trip to Six Senses, with Dr. Mike van Kuelen, these methods were finalized and recognised as protocol for the Maldives National Seagrass Monitoring Network.

OUR RESEARCH

At Six Senses Laamu, sustainability is at the heart of resort operations. The research we conduct around Olhuveli Island, where Six Senses Laamu is located, is a guiding light for the sustainability and conservation measures here at the resort. However, our research projects span further than Olhuveli Island.

As the only resort in Laamu Atoll, we are fortunate to be located in a relatively untouched region of the Maldives. We are in Laamu to create a legacy, to leave this beautiful and unique part of the Maldives better than we found it. This vision was ignited by our General Manager, Marteyne van Well, and continues to burn through our research projects, which allow us to fully understand the marine resources that exist in Laamu and how we can best protect them. With scientific based evidence and the support of the Laamu community, we hope to protect Laamu's natural resources for generations to come.

Photo credit © Alex Mustard



MEGAFAUNA SIGHTINGS

1,864 hours of megafauna surveys

50 different survey sites

surveys conducted on **364** days of the year

18,942 megafauna sightings

5,273 sightings of turtles

7,279 sightings of sharks

4,205 sightings of rays

2,098 sightings of napoleon wrasse

Photo credit © Leanna Crowley

Anytime a member of the MUI team or our dive center, Deep Blue Divers, is in the water, data is being collected. We are looking out for the megafauna, or the 'big stuff', including all species of turtles, rays, and sharks. We have been recording this data for the last seven years at more than 50 dive and snorkel sites across Laamu.

In September, we welcomed Professor Yvonne Sadovy, a grouper expert from Hong Kong, who identified that some locations in the Maldives may be a spawning hotspot for napoleon wrasse, a significantly threatened coral reef fish. As a result, napoleon wrasse were added to the megafauna sightings data collection and Yvonne provided a training session for MUI and Deep Blue Divers so that they could recognise spawning behaviors.

In 2019 the MUI and Deep Blue Divers teams conducted an impressive 2,259 megafauna surveys, with 63% on SCUBA dives and 37% on snorkels. These surveys clocked 1,864 hours in the water on 364 days of the year. Even while our guests are enjoying their holidays, the science never stops!

What did we see? A total of 18,942 sightings of megafauna were recorded with an average of 8 sightings every time we got in the water! Sharks, turtles, rays and napoleon wrasse were recorded in the hundreds each month. On each snorkel or dive in 2019, we saw an average of three sharks, two turtles, two rays and one napoleon wrasse. These sightings also included some unusual encounters such as nine whale sharks, three oceanic manta rays, one loggerhead turtle, one lemon shark and one tiger shark. We also spotted many critically endangered species such as giant guitarfish, bow-mouth guitarfish, great hammerhead sharks and scalloped hammerhead sharks. Hawksbill turtles, another critically endangered species were encountered over 2,000 times in Laamu last year, an indication of how important our atoll is for turtle populations and even more evidence for the need for marine protected areas.

4 sightings of critically endangered shark species

8 sightings of endangered shark species

61 sightings of vulnerable shark species

2010 sightings of critically endangered turtle species

3264 sightings of endangered turtle species

2098 sightings of the endangered Napoleon Wrasse

4 sightings of critically endangered ray species

75 sightings of endangered ray species

626 sightings of vulnerable ray species

SEA TURTLE

CONSERVATION

In the Maldives, endangered green turtles (*Chelonia mydas*) were once commonly harvested for their meat, and their eggs were poached as a local delicacy. Critically endangered hawksbill turtles (*Eretmochelys imbricata*) were often harvested to fuel the tourism-driven demand for turtle shell in the jewelry market. In 1995 a nationwide ban was placed on turtle harvests, which was followed in 2005 and 2016 with the implementation of egg harvesting bans. Despite these laws, turtles in Maldives unfortunately still face significant threats, including the capture of hatchlings for the pet trade, entanglement in ghost nets (discarded fishing nets), and destruction of nesting and foraging habitats.

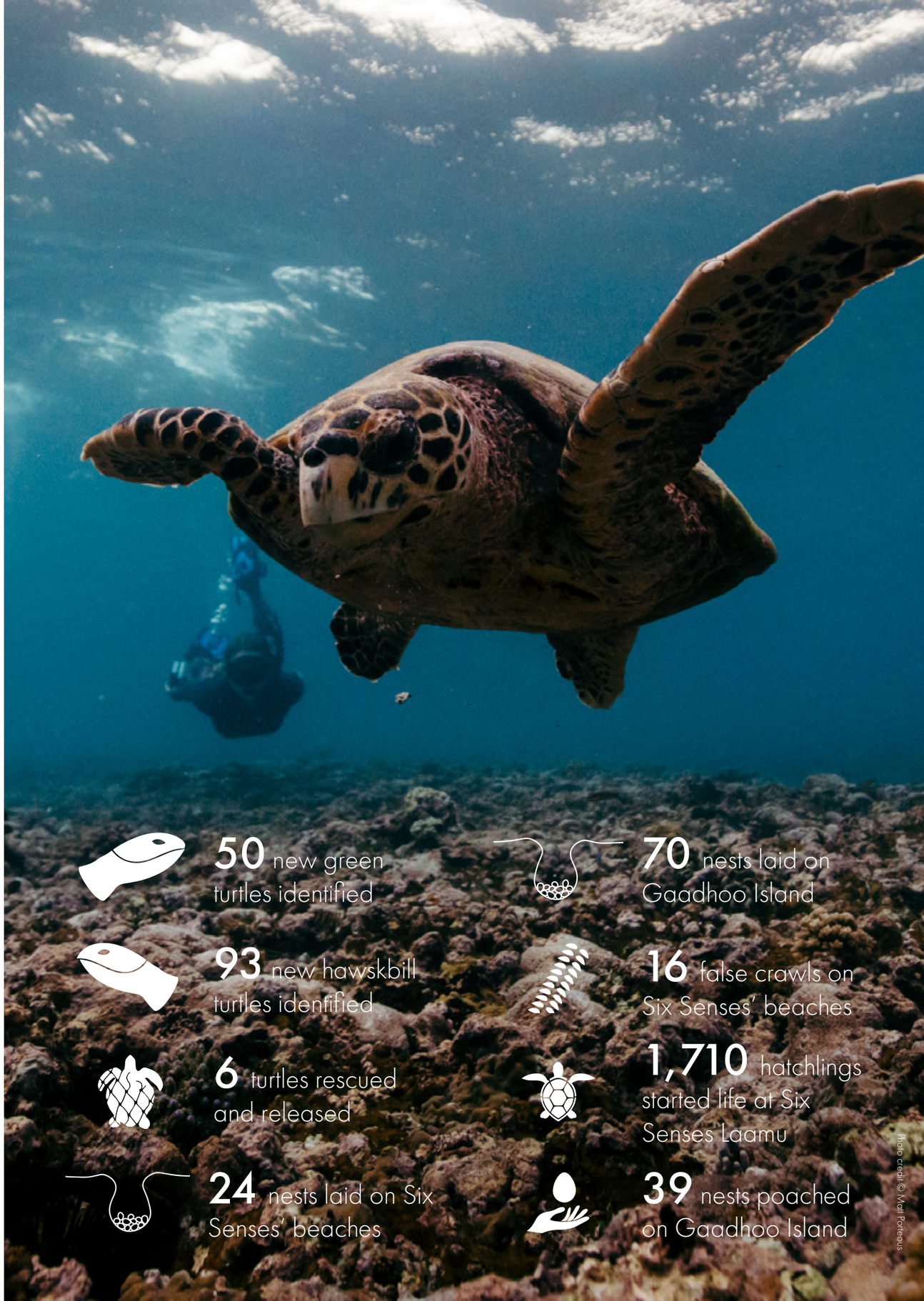
Olive Ridley Project's (ORP) vision is to safeguard turtles in the Indian Ocean from these threats. Now, in their second year as part of MUI, they are making this dream a reality here in Laamu. ORP safeguards Laamu's turtles through a wide range of research projects, including studying turtle population demographics, monitoring turtle nests, and collecting data from ghost nets found in and around the atoll.

Our ORP team can quantify how many individual turtles call Laamu home. How? Each turtle possesses unique facial scales, so through photo identification, ORP can reliably identify individuals. In 2019 we reached almost 500 identified turtles in Laamu, making this database one of the largest of its kind in the Maldives. There is no sign of slowing down either, with an average of 12 new individuals identified every month. What's more, now that the Laamu photo ID database has been established for multiple years, we have started to identify nesting females and mating males, identifiable as they only grace us with their presence during nesting season. Our nesting females and mating males travel huge distances to return to Laamu's beaches where they were born to produce hatchlings of their own.
Turtles met technology in 2019, as the Laamu turtle photo ID database was incorporated into the 'Internet of Turtles', an artificial intelligence facial recognition software adapted for facial scales. This software simplifies the processing of ID photographs and collates data from a global network of turtle ID projects.

Abandoned, lost or discarded fishing nets or ghost nets drift into the Maldivian Archipelago and are responsible for trapping 1000s of turtles" or "Abandoned, lost or discarded fishing nets or ghost nets drift into the Maldives and entangled sea turtles. Every year the ORP record an average 100 entangled turtles, however the number that go undetected is likely much higher. Thankfully, in the southern Laamu Atoll, fewer cases of entanglement are encountered. However, in 2019, we did rescue 6 turtles from entanglement in ghost nets or plastic debris. 100% of these turtles have since been successfully released back into the wild. Many of these entanglements were reported to MUI by members of our local community, and we are incredibly grateful to work with such a supportive and enthusiastic community here in Laamu.

2019 was another very successful year for nesting green sea turtles. 24 nests were laid on beaches at Six Senses Laamu, all of which successfully hatched, resulting in 1,710 baby turtles scurrying down the beach into the waves to start their long journey out to sea. This year, the ORP team also recorded some of our first estimates of the inter-nesting period, which is the length of time between consecutive nesting events at Six Senses Laamu. One frequently sighted nesting turtle, 'Davi', rested an average of 14 days between nesting attempts in 2019.

One of Six Senses Laamu's neighboring uninhabited islands, Gaadhoo, is believed to have one of the highest rates of turtle nesting activity in the Maldives, and is therefore a significant focus of ORP's work in Laamu. The ORP team conducted surveys on Gaadhoo's beach throughout the year to document nesting and poaching activity. 70 nests were recorded on the island and 56% of these had been poached, thus highlighting the significance of Gaadhoo's nesting beach and the need for further and improved monitoring efforts. Additional research was then conducted into methods to establish a locally-driven research program with the aim of better assessing the nesting population on Gaadhoo and simultaneously deterring poachers. ORP developed a nest monitoring handbook to train community members on how to collect the data required. Blue Marine Foundation helped the Laamu Atoll Council to declare Gaadhoo island as a priority area for protection in the Atoll as a 'nature reserve'.



MANTA RAY

CONSERVATION

155 hours of RUV footage recorded

450 confirmed sightings in 2019

55 measurements of manta rays

132 individual mantas sighted since 2014

12 individuals ultrasound scanned

6 new manta rays identified in 2019

Photo credit © Alex Mustard

The Manta Trust team has been studying Laamu's gentle giants since 2014 and has now completed their fifth year of data collection. As this partnership has grown, we continue to learn about the manta ray populations and aggregation sites around Laamu Atoll. Almost every day of the year, a Manta Trust team member is diving one of the key manta aggregation sites, Hithadhoo Corner or Fushi Kandu. Thanks to Six Senses Laamu's research boat this survey effort is made possible, and we are maximizing our chances of collecting manta ray data daily.

Similar to the facial scales of a turtle, each manta ray has a unique spot pattern on their belly, enabling researchers to differentiate and identify individuals. In 2019, the database of individual manta rays increased with sightings of six newcomers, bringing the manta ray population of Laamu to a total of 132 individuals. This year, manta rays were recorded at a total of ten different sites, three of which were newly identified in 2019.

The Manta Trust works to track manta ray pregnancies through photographs but researchers still know very little about where manta rays go to give birth and how long pregnancies last in the wild. The team at Six Senses Laamu has been working with great minds in veterinary technology to develop a new device for gaining insight into manta ray pregnancies. Through a collaboration between Six Senes Laamu, Vetsonic, IMV imaging, the University of Cambridge and the Manta Trust, the first underwater contactless ultrasound scanner was developed and the team at the resort have been testing prototypes of this device since it's inception.

The Duo-Scan: Go Oceanic is the first-ever portable technology to allow contactless scanning of wild marine animals at depths of up to 30 meters. After a year and a half of field testing in Laamu, our Manta Trust researchers have successfully developed approach methods and obtained ultrasound scans of wild pregnant and non-pregnant reef manta rays. In 2019, MUI released the world's first-ever images of a pregnant wild reef manta ray using this contactless technology.

To learn more about how quickly they grow and mature, the Manta Trust has been measuring manta rays for several years. In 2019, the team in Laamu shifted from using paired lasers to stereo video technology to record measurements of the population. The new method allows for manta rays to be accurately measured from behind, and will also enable the team to compare the two measuring techniques.

Most manta ray encounters in Laamu occur whilst diving. For this reason, the team at the resort is limited in the amount of time they can spend collecting data. In past years, the team trialled Remote Underwater Video-cameras (RUVs) to record data between dives. This year, they increased the use of this technology to see what could be recorded at cleaning stations when divers weren't present. The Manta Trust recorded more than 150 hours of footage with the RUVs and captured 79 manta ray ID photographs using the cameras in 2019.

The team have also been developing an "Eyes on the Reef" camera system to deploy at Hithadhoo Corner and other manta ray aggregation sites in Laamu Atoll. These systems have been used in other locations to record footage over multiple days, sometimes even weeks! After working with the engineering team at the resort and Manta Trust colleagues throughout the country, the team built a housing that can withstand the depths and currents at Hithadhoo Corner. The 'Eyes On The Reef' system was deployed for the first time in early 2020. These cameras can give valuable insights into manta habitat use over an extended period and allow us to gain additional insight into manta behaviour. With advents in technology, we are no longer limited to a 60 minute dive for studying the manta rays of Laamu Atoll.

Photo credit © Marteyne van Well

LAAMU STORIES

A beach in Laamu Gan gained a new resident in 2019: a manta pup who can't seem to get enough of the bay and Gan's community. After hearing of these encounters, the Manta Trust team conducted a site visit and were delighted to meet not only this curious pup but also the locals of Gan who were eager to learn more. From the taxi driver to the cafe owners, the kids of Hello Hallu and their curious parents, the entire neighborhood welcomed us to their beaches. After spotting the pup, the onlooking crowds also had the opportunity to meet a manta in virtual reality, measure its size, and ask all sorts of questions. We are incredibly grateful to the residents of Laamu Atoll for supporting and assisting our work, as sightings like these are invaluable to our research and conservation efforts.

Photo credit © Megan O'Beirne

CORAL REEF

ECOLOGY

The atolls of the Maldives are remarkable. They are the seventh-largest reef system in the world and the largest in the Indian Ocean. These reefs contain over a quarter of the world's known hard coral species, almost a fifth of all coral reef fish as well as charismatic giants like manta rays, whale sharks, green and hawksbill sea turtles. Not only are these coral reefs home to a magnificent array of marine life, but they are the actual foundation of every island. They act as natural barriers protecting the low-lying islands from the eroding forces of the sea and are the environmental setting for the country's key industries- tourism and fisheries. Unfortunately, due to overexploitation- fishing, tourism, pollution, coastal development, climate change- these reefs are degrading and losing their capacity to provide support to those who depend on them. In 2016, more than 75% of corals across the Maldives were killed in a mass bleaching event due to elevated sea temperatures.

We are supporting the Laamu Atoll Council to protect its reefs so that they can remain healthy and withstand future climatic events like coral bleaching which are predicted to increase in magnitude and intensity. In 2019, BLUE and Six Senses Laamu undertook baseline surveys of more than 20 sites to get a better understanding of the health of Laamu's reefs.

These surveys revealed which reefs are faring best and would be best suited for protection. On average we found that live coral cover across Laamu's reefs was just short of 20% which is synonymous with national averages. The abundance and diversity of butterfly fish was an encouraging sign of recovery. Six Senses Laamu's house reef had the highest coral diversity, with 36 different genera found. This suggests that the level of protection we implement on our reef would greatly benefit the recovery of reefs elsewhere in the atoll.

One of our visions is to bring together the greatest minds in marine conservation, and so this year we welcomed Maldivian coral expert, Mariyam Shidha Afzal. While staying with us, Shidha looked at the distribution patterns of hard coral in Laamu and found over 47 genera at just six sites. Considering there are only 57 genera recorded so far in the Maldives, this is an excellent sign of the biodiversity of Laamu's reefs. A highlight of this study was the discovery of *Seriatopora*, a coral rarely found in the South of the Maldives since a bleaching event in 1998 and thought to be locally extinct.

Swimming amongst the reefs of the Maldives is a live-action nature documentary, and the characters you encounter are endless. This year we reviewed all the entries within our historical biodiversity database to create a list of the different fish and invertebrates that can be found here in Laamu. BLUE, Six Senses Laamu, and our colleagues of the dive center, Deep Blue Divers, came together to identify over 350 species of fish around Six Senses Laamu, 27 of which have not yet been reported in Maldivian fish ID books. Deep Blue Divers worked with John Hoover to collate this information into a fish ID app under the dive center name. The app has empowered our guests, and other divers who want to explore Laamu's water, to identify the marine life they meet along the way.

MUI contributes to a national reef monitoring program by The Maldives Marine Research Institute through bi-annual surveys looking at substrate composition, fish abundance, and invertebrate abundance on a permanent transect. The December 2019 survey saw the coral cover on Six Senses Laamu's house reef rise to an average of 24%, up from less than 10% after the 2016 bleaching event. In 2020, we will assess this rate of recovery and compare ours to historical recovery rates of Maldivian corals following bleaching events in the past. With information like this, we can assess the success of our conservation efforts and better advise others on how they can help these vital ecosystems recover.

CORAL REEF

RESTORATION

221 corals planted back on to Six Senses Laamu's house reef

55% survival rate following the out-planting

Photo credit © Andy Ball

Like all reefs in the Maldives, and many globally, Six Senses Laamu's house reef was affected by a mass coral bleaching event caused by the extremely high sea temperatures of 2016. To aid its recovery, our Six Senses Laamu team conducted a two-year reef restoration project on our house reef, which concluded last year. This project worked towards boosting the coral abundance on our current reef, rather than create new small reefs nearby, as many other restoration projects do. The two-step project involved the collection of coral fragments from selected species, installing them into a mid-water nursery to allow them to increase in size, followed by 'planting' them back onto the reef. The aim was to see if this could be a viable method of assisting the recovery of the reef here at Six Senses Laamu.

The initial nursery phase lasted from December 2017 to June 2018 during which time the MUI team installed 902 coral fragments into a mid-water nursery. These comprised two genera; *Pocillopora* (2 species) and *Acropora* (10 species). After 9 to 12 months in the nursery, 39% of fragments had been removed due to tissue death, and a further 12 fragments were removed due to suspected bacterial tissue disease. This gave a total survival rate of 60% during the nursery phase. After 11 months in the nursery, the *Acropora* fragments in the nursery had grown, on average, 17 times larger than their original size, and *Pocillopora* fragments were an average of 37 times larger than their original size.

From October 2018 to May 2019, all remaining fragments were out-planted back onto Six Senses Laamu's house reef, and a total of 221 colonies were monitored to assess survival rate. After one year, only 55% of all monitored colonies could be located, either due to fragment detachment or fragment death and loss on the reef. Detachment happened as a result of the marine epoxy becoming loose or not having time to set. Natural predation also occurred by triggerfish, parrotfish, and butterflyfish. However, all colonies that were located after one year were healthy, giving a 55% survival rate following our out-planting.

Photo credit © Andy Ball

The coral fragments from the nursery were sourced from Six Senses Laamu's house reef, and the colonies these fragments were taken from are known as donor colonies. We tagged and monitored 17 of these donor colonies and compared them to 10 control colonies that were not used for this project. All the donor colonies fully recovered their lesions within two weeks of fragment harvest (whereas fragments in the nursery took eight weeks to recover fully). There was no significant difference in predation or health between donor or control colonies throughout the year of study.

Through this restoration project we successfully trialled a method of reef restoration. We now understand what works well and what works not so well, from methods of fragment collection, nursery design, which species to use and the amount of time required in maintenance and up-keep of the nursery.

We also discovered the Six Senses Laamu house reef is already showing hugely encouraging signs of natural recovery. When planting the coral fragments, it was challenging to find areas where there wouldn't be interference with the natural coral recruits!

Due to this, the team has decided to direct efforts from this time intensive project elsewhere. Going forward we will help our reefs become restored through protection, education and outreach programs that will safegaurd Laamu's reefs. We will also conduct research to ensure the already flourishing natural recovery process is not disturbed.

SEAGRASS

CONSERVATION

The grass isn't always greener on the other side, it's greener where you protect it. Seagrass meadows in the Maldives are under threat. They have become victim to a false reputation, that they deter tourists, and so they are actively removed from many resorts around the country. In 2019 we launched a mission to conserve these vital ecosystems and #ProtectMaldivesSeagrass. To fully protect an ecosystem, you must first understand it, and so a considerable amount of our research efforts this year went towards understanding the seagrass meadows around Laamu.

2019 started with an assessment of the seagrass meadows in the lagoon of Six Senses Laamu's Olhuveli Island. Here we found an impressive 94,000m^2 of seagrass made up of six different species. This meadow is an area that will continue to be monitored on an annual basis and has been pledged as protected by Six Senses Laamu for over two and a half years. Inspired after exploring our meadows, our partners at BLUE ventured further into Laamu. They recruited a master's student who, supervised by MUI advisor Paul York, conducted a study of the baseline biodiversity status of seagrass meadows in three islands in Laamu, which were located within proposed protected area zones. The study revealed that the meadows in Laamu, an area relatively untouched by coastal development, are extensive, diverse and support a community of over 140 fish species, especially as a nursery ground for many commercially valuable juvenile fish.

In 2019 we discovered a deep-water seagrass meadow off Gaadhoo island, an uninhabited island close to Six Senses Laamu. Most seagrasses tend to show a preference for waters less than 10m deep, but in Gaadhoo, we found the species *Halophila ovalis* as deep as 22m.

Under the guidance of two visiting seagrass gurus called Mike (Dr. Mike van Kuelen and Dr. Mike Rasheed), we represented the Maldives in a global study launched by the Smithsonian Institution, investigating food-webs and energy flow within seagrass meadows. In November 2019, we surveyed seagrass, algae, fish, invertebrates, epifauna and epiphytes in Laamu. The results of this study will be published in 2020 and will provide an insight into the significance of food webs and biodiversity within seagrass meadows across the world.

It is widely accepted that seagrass plays a significant role in the fight against climate change by acting as a carbon sink. In November, we hosted Dr. Peter Macreadie, director of the Blue Carbon Lab at Deakin University, to help us quantify just how vital Laamu's seagrass meadows and mangrove forests are for carbon storage. 54 sediment and 24 plant samples were collected, dried and sent for analysis. With these results (to be released in 2020), we will have a better understanding of the role Laamu's seagrass meadows and mangrove forests play in the battle against climate change.

Our seagrass studies this year provided the evidence for what we already knew to be true. Seagrasses support fisheries, they provide a home for charismatic meagafuana that are valued by tourists, they protect the low-lying islands of the Maldives from eroding forces of the sea and they absorb carbon and fight climate change. This research empowered us to launch the #ProtectMaldivesSeagrass campaign in partnership with Blue Marine Foundation, a movement that resulted in the protection of seagrass meadows nationwide.

6 different species of seagrass found around Six Senses Laamu

94,000m2 of seagrass surveyed at Six Senses Laamu

141 fish speicies recorded in Laamu's seagrass meadows

54 sediment cores extracted for blue carbon sampling

Photo credit © Andy Ball

MANGROVE
RESEARCH

These incredible shrubs and trees can be found in the areas just between the land and sea, an area that transforms with the rhythm of the tide. From being completely exposed in the lowest of tides, to submerged as this coastal wetland fills, mangroves have adapted an incredible filtration and root system that allows them to survive in this fluctuating environment. The robust root systems of mangrove forests make them an essential ecosystem for protecting the low-lying islands of the Maldives from erosion, storm surges and tsunamis. Like seagrass, they also move carbon dioxide from the atmosphere into long-term storage below the ground in coastal habitats, a term coined 'blue carbon'. In fact, they are the planet's most efficient system for this, even more so than rainforests.

In 2019, BLUE and Six Senses Laamu ventured into Laamu's mangrove forests to conduct a baseline study to take stock of this understudied ecosystem, specifically in Hithadhoo, Maabaidhoo and Gaadhoo. Hithadhoo, the atoll's largest and most diverse mangrove, is dominated by red and yellow mangrove species, while Maabaidhoo's mangrove, only slightly smaller than the one in Hithadhoo, was much less diverse and ironwood is the only mangrove-associated species found there naturally. Gaadhoo mangrove is enclosed, which means it does not have fresh ocean water flowing in and out of it daily. All of this research will be used to inform the design of the marine reserve.

In November, MUI hosted Peter Macreadie, director of the Blue Carbon Lab at Deakin University in Australia. He trained the team in blue carbon calculation and advocating for it's use as a tool to fight climate change. The team extracted sediment cores from the same three mangrove forests and seagrass meadows previously studied by the team in Laamu. This produced 18 small tubes of sediment, which were dried and sent to a lab for analysis. These will be used to measure the precise amount of carbon stored by each ecosystem. We expect to receive the results in 2020, stay tuned!

Our findings highlighted how important mangroves are for fisheries. 32 species of fish were recorded from both mangroves, many of which are commercially important like snappers and groupers. Juveniles of these were also found which agrees with research from other countries where mangroves are critical nursery grounds for coral reef fish. They also appear to be important for baby sharks and rays who seek shelter from predators within them.

MARINE

PROTECTED AREAS

What is the purpose of all of our research? We want to protect Laamu so that its environment can be enjoyed by residents and visitors for generations. To achieve this, we need to work together with the people of Laamu to ensure it is protected. Our research will be used to justify the need for protection of its habitats.

Our goal is to create the first protected areas here in Laamu. In doing so, we will safeguard the future of our community and use this as a blueprint for sustainable development in other atolls across the country. In 2018 the Laamu Atoll Council declared their intention to protect five areas, many of which were advised by BLUE. These areas are outlined on the map to the right. The network proposed includes biodiversity hot spots such as fish spawning sites, manta ray cleaning stations and turtle nesting beaches.

MUI also facilitated information sharing beyond Laamu Atoll. BLUE led a two-day knowledge exchange trip for council representatives to see how protected areas function in Addu Atoll and the ways in which they benefit the community. Participants were taken on a tour of the terrestrial and marine protected area of Addu Nature Park, as well as a community-protected mangrove site called Mathilhi Eco Garden. Surveys revealed that participants gained a much better understanding of the benefits of protected areas after the trip, and many participants strongly agreed that protected areas benefit fisheries, create jobs, and benefit both wildlife and tourism. It is our hope that this will encourage council members to consider how protected areas could be implemented in Laamu.

Now BLUE is working with the Laamu Atoll Council, Six Senses Laamu, and all our partners to develop and agree on a management plan for these areas and therefore securing their protection under legislation. The tangible results of these protected areas will be the restoration of habitats, recovery of fish-stocks, a sustainable local fishery, and a thriving marine tourism industry.

Photo credit © Andy Ball

OUR EDUCATION

Our vision is to empower a community of marine stewards who will create a culture of positive action for our oceans in Laamu and beyond. Who better to start with than our guests right here at Six Senses Laamu? In 2019, the resort welcomed almost 9,000 guests from 88 different countries. The MUI team interacted with an average of 27% of these holidaymakers, resulting in over 14,000 opportunities to educate and inspire.

For us, these moments with our guests are all about science communication, about sharing our knowledge in the most exciting and engaging way we can. We make this possible through hosting a vast range of guest activities at the resort, from hands-on workshops, presentations and kids club, to dolphin cruises, guided snorkels and reef cleans. We make sure there's something for everyone to get involved in. The amount of guests who joined MUI activities increased by almost 50% compared to 2018, and we were delighted to welcome back repeater guests who chose Six Senses Laamu again because of MUI's added value.

Last year the MUI team worked hard to invest more time in our fellow hosts, those that we live and work with on a daily basis. We had more than 700 education and training interactions with hosts from different departments - up 185% from 2018. The MUI team also welcomed 13 interns and students throughout the year (amounting to 32 months worth of internships); their hard work produced five scientific reports.

Photo credit © Leanna Crowley

OUR GUESTS

4,058 guests joined on MUI guided snorkels

566 guests witnessed turtle hatching events

1,700 guests encountered dolphins on sunset cruises

Photo credit © Leanna Crowley

A stay at Six Senses is not complete without a guided reef or seagrass snorkel, led by a MUI marine biologist pointing out beautiful marine life, answering questions and providing fascinating facts. We believe being a resort marine biologist is more than just being a snorkel guide; the excursions we lead are an opportunity for us to show guests how we go about our research and are perhaps even a chance to recruit citizen scientists. Every snorkel with the MUI team is a survey when, at a minimum, we record the environmental conditions and megafauna we encounter. Over 4,000 guests joined our snorkel surveys in 2019. This accounted for 4,870 hours with our masks in the water, our eyes on the lookout, and a vast amount of data for our database. An incredible group effort!

Snorkels are just one aspect of what we do. A marine biologist frequently joins guest dives too, and dive instructors at Deep Blue Divers are also trained to conduct megafauna surveys any time they are underwater. A member of the Manta Trust team will join any dive boat traveling to a site frequented by manta rays. The team provides a manta briefing and sends a "manta memo" to each and every guest after the dive, with photos and details of the manta rays and other marine life they encountered that day. In 2019, the team also taught the Manta Trust adventure dive to interested guests as part of the PADI Advanced Open Water diving course.

Six Senses Laamu's dive center, Deep Blue Divers, has been a certified Green Fins member for two years and has pledged to follow 15 environmental guidelines under the Green Fins Code of Conduct during all diving and snorkeling activities at Six Senses Laamu. In 2019, 203 new divers were certified with Deep Blue Divers under the Green Fins Code of Conduct, ensuring a growing community of environmentally-aware divers worldwide.

The sunset cruise at Six Senses Laamu is another opportunity to see the beauty of Laamu Atoll, watch the sunset over the horizon, and of course spot the atoll's most active inhabitants, our resident spinner dolphins (*Stenella longirostris*). A member of the MUI team will join the cruise to point out the pod, talk about dolphin behavior, and answer any questions guests have about the marine life they have encountered during their stay. We have been using these cruises as research opportunities for over three years and have documented thousands of dolphin encounters. This data was summarised in a masters thesis, which found that Laamu's spinner dolphins have a distinct daily migration in and out of the atoll. The report also showed that spinner dolphins are most often sighted during the NE monsoon (Oct-Apr) and least often sighted during the SW monsoon (Mar-Sep).

If you're visiting Six Senses Laamu during June-October, you may be lucky enough to be woken in the night by a phone call from a marine biologist informing you of a hatching turtle nest. Our partners at the Olive Ridley Project prioritise education in their work and create crafted nest hatching experiences for our guests. In 2019, 566 guests witnessed some of the 1,713 turtle hatchlings making their way to the ocean for the first time. These babies have a tough time ahead with only 1 in every 1,000 turtle hatchlings reaching maturity, a scary statistic that is unfortunately intensified by human-induced threats.

One of the largest of these threats is pollution due to poor waste management, a huge issue here in the Maldives. However, the MUI team is solution-focused and we provide our guests with reef and beach clean opportunities, in addition to the standard cleaning efforts we undertake on daily snorkels. Last year, 37 guests went the extra mile and helped us clean our reefs. These clean ups, along with our team's daily efforts, resulted in the collection of over 2,210 pieces of trash from Laamu's waters. A number we are proud to say has decreased from previous years, whilst our efforts have not.

Photo credit © Leanna Crowley

INSPIRING THE NEXT GENERATION OF MARINE BIOLOGISTS

What do you want to be when you grow up? The launch of the Junior Marine Biology program was a highlight for MUI in 2019.

This program, for budding conservationists staying at the resort, consists of seven modules, each taught by a marine biologist on the team who specializes in the relevant topic. From studying the sea to sharing the science, protecting the big stuff to helping the ocean, our Junior Marine Biologists get a holistic understanding of marine sciences, a look into the daily life of a marine biologist, and their very own blue uniform, custom-made by our on-island tailor.

In 2019, after over 100 hours of teaching, we certified 19 Junior Marine Biologists from around the world. When asked for feedback, 93% of these ocean guardians said that they enjoyed the program and they think oceans are really important. Plus, almost half said that they now want to work in marine conservation when they grow up! But first, they're coming back to Six Senses Laamu. We have already had four of our alumni reach out to us to book more junior marine biology sessions on their 2020 holiday to Six Senses Laamu.

LAAMU STORIES

Meet Plum, one of our junior marine biologists who joined the team in December. While she lives amongst the hustle and bustle of Brooklyn, New York, Plum is an avid conservationist and is interested in anything nature related! At Six Senses Laamu, she had the opportunity to discover a marine world she had only read about in her National Geographic magazines, and we were delighted to join her on this adventure. A highlight of our week together was when Plum won the lucky draw for naming one of Laamu's turtles. We are delighted to have Davi, a frequently sighted nesting green turtle, in our database!

Photo credit © Leanna Crowley

LAAMU STORIES

In December the MUI team got festive the only way we know how: under the sea. This festive season, we invited all Six Senses Laamu guests to a marine-themed cocktail party amongst palm leaf fish decorations, the soundtrack of Blue Planet, and the year's underwater video highlights from Deep Blue Divers' very own Photo Pro. Over a quarter of Six Senses Laamu's guests joined us for our blue bubbled cocktails and games across eight different stalls. Together we met mantas in virtual reality, made a wish for fish in 2020, learned about coral spawning with pom poms and pop songs, and much more.

Photo credit © Leanna Crowley

BRINGING GUESTS BEHIND THE SCENES

What goes on behind the scenes in a Maldivian resort? At Six Senses Laamu, we are transparent with our resort operations and proud of our sustainability and community-focus. So much so, that we invite our guests to take a peek for themselves.

Our daily Back-of-House Tour brings guests to the center of the island where they can witness our sustainability initiatives in action. Highlights of the tour include the resort's Earth Lab recycling center, Kukulhu Village chicken farm, desalination plant, onsite tailor, carpentry workshop, mushroom growing hut and herb garden. Over 1,000 guests at the resort toured the heart of the island this year and we were delighted to see the countless reviews online mentioning the tour as 'a must do', a 'hidden gem', and an experience that 'takes your stay to a whole new level'.

Six Senses is one of only two resorts in Laamu Atoll and after almost nine years of operation, we have developed strong relationships with all 11 inhabited islands in the atoll. We are passionate about incorporating local food and culture into the resort and showing our guests the real Maldivian way of life outside our island bubble. On these islands, the local community is proud to share their unique culture with our guests, which is an experience so often overlooked within the tourism industry.

Photo credit © Andy Ball

OUR HOSTS

There are almost 400 hosts living at Six Senses Laamu, from 30 different countries, who have been a large focus of our education efforts this year.

In 2019, Six Senses Hotels Resorts Spas officially launched Mission Wellness, a year-round initiative to help hosts achieve optimal well being. MUI reached out to those we live and work with, to invite them to a range of activities including beach and reef cleans, dives, snorkels, and dolphin cruises. In addition, we hosted talks at our all-host meetings, seagrass training sessions for the #ProtectMaldivesSeagrass campaign, and Manta Trust held a "Meet a Manta" workshop. Here, hosts had the opportunity to meet these gentle giants in virtual reality and stand the chance to name a new manta ray spotted in Laamu. For us, these activities are more than a 'tick box' requirement for the human resources department. It is an opportunity to build a larger community of marine stewards right here at home.

We don't only want to inspire, we also want to empower. Through various training schemes we are investing in our fellow hosts at Six Senses Laamu, building capacity for them to run conservation efforts and make sustainable decisions in their personal lives. Our Sustainability Manager runs a monthly plastic-free training session, in which every host on the island learns about plastic, why it can be dangerous, and what we can do at work (and at home) to help prevent plastic pollution. The feedback has been inspiring: "I'm going to enter into politics and my party will have the principles on plastic free" and "I would like to set up a plastic free resort". Specific trainings were also provided to our boat and watersports teams on manta ray code of conduct, sea turtle rescue and dolphin code of conduct. Even purchasing managers, stores officers, butchers and chefs have learned to make sustainable decisions on the fish we purchase and serve at the resort (read more about the Laamaseelu Masveriya, or 'Exemplary Fishermen' Program in Our Home section).

Our host outreach efforts worked in our favor this year when turtle nesting season came around and 38 volunteers from different resort departments stepped up to join our turtle nestwatch team. This group expanded to include the generous support of our island's security team who added 'check the nest' and 'look out for turtle tracks' to night patrol protocol. The data collected and the guest hatching experiences conducted were only possible thanks to the dedication of the volunteers. This year our nestwatch team collectively spent more than 940 hours monitoring turtle nests. Improvements to the nestwatch protocol included alterations to the nest barriers, streamlined monitoring hours, and support from our security team, resulting in less monitoring time and more seamless hatching events for our turtles, which more guests and hosts could appreciatively witness.

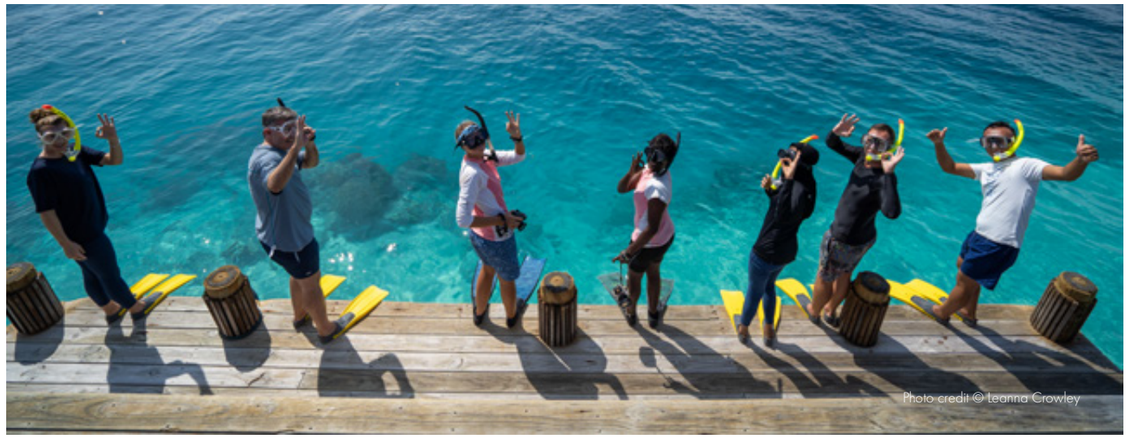


Photo credit © Leanna Crowley

LAAMU STORIES

Meet JJ, a gardener at Six Senses Laamu, and a vital member of our nestwatch team! Prior to working at the resort, many hosts, like JJ, participated in the traditional Maldivian practice of gathering and consuming turtle eggs. Legislation has since made this illegal due to the harm it has on the population of endangered green turtles, and is now, for the most part, a thing of the past. However, given the number of nests laid at Six Senses, nest-finding skills have come in very handy, this time for the greater good. JJ and his team now use the knowledge and techniques previously used to harvest turtle eggs to help our turtle biologist locate and mark new nests that are laid, and in doing so make a huge contribution towards protecting turtle populations in Laamu.

Photo credit © Rifhaan Ali

LAAMU STORIES

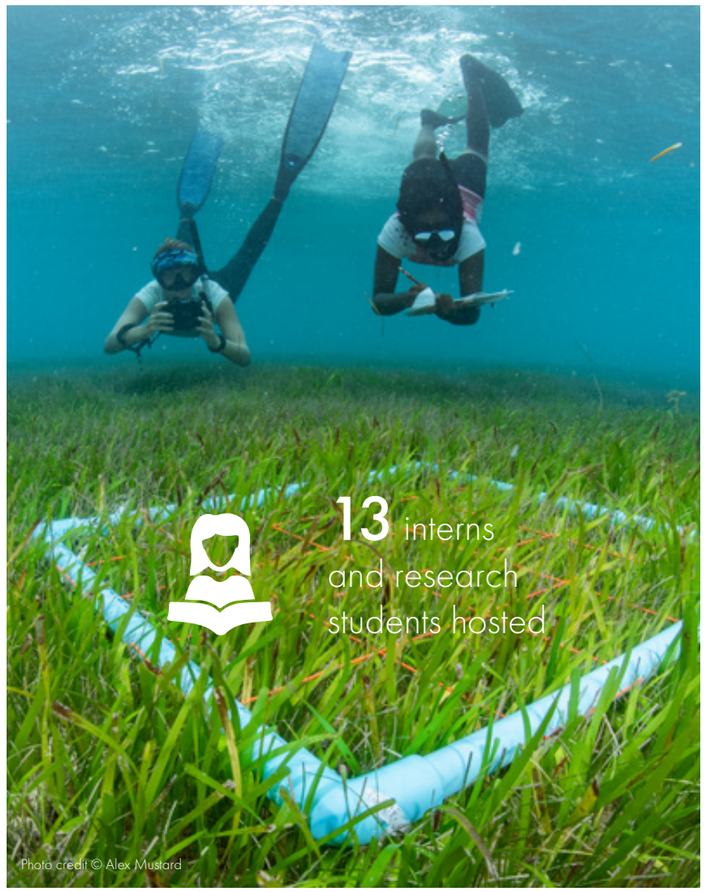
"Until last year, I was an excursion guide on my home island, Maafushi, but I always had a passion for conservation and wanted to learn more. I joined the MUI team as a research intern for six months, focusing on the study of Six Senses Laamu's seagrass meadows, as well as conducting reef surveys and helping to start a turtle grazing study. The highlight of my internship was probably the community events and education sessions, where I could engage with Laamu's community and work on my public speaking. My goal was to take what I learned working with MUI back to Maafushi and improve ecotourism on my island. At the end of my internship, I just wasn't ready to leave yet, so after extending for one month, then working temporarily for Manta Trust, I was offered the incredible position of Research Assistant for Blue Marine Foundation. I am now working on the research and capacity building activities related to the future MPA in Laamu. The most exciting project for me right now is the Laamaseelu Masveriya Program, which is helping to ensure a sustainable reef fishery in the atoll. Coming from a fishing family, this is uniting all of my passions into one very rewarding job."
- Ali Shareef, December 2019

WHAT THEY DON'T TEACH YOU IN THE CLASSROOM

In 2019 we welcomed a record breaking number of interns and research students to Laamu.

MUI is made up of marine scientists with varied experience in the fields of research, education, and science communication. What's more, through our network of partners and scientific advisors, we are under the guidance of some of the best minds in the industry. It is therefore our duty to ensure we are passing on these skills and knowledge to those who have just begun their journey into this big blue field. We are in a position to show marine science students what it is like to work in this industry, teaching them practical and theoretical skills that cannot be learned in the classroom. In 2019, the MUI team welcomed 13 interns and research students over the course of the year, and accommodated an additional marine biologist from another resort during its temporary closure. Here are just a few of their stories.

> "Tell me and I forget, teach me and I learn, involve me and I remember."
>
> - Benjamin Franklin



Nas, Abbey and Leah joined the MUI team through BLUE, from June to August, to complete research for their masters theses at the University of York and the University of Essex. Each of them focused on one of the three key ecosystems we have in Laamu - coral reefs, seagrass, and mangroves - and conducted baseline surveys to assess the health of these habitats. The findings of these surveys have been summarized and presented to key stakeholders, including the atoll and island councils, and are guiding the next steps in our pursuit of a network of marine protected areas encompassing these sites. Up to 68 fish species were recorded across the coral reef sites, 32 fish species across mangrove sites, and 141 fish species across seagrass sites! This is the first time anyone has assessed fish populations in seagrass and mangrove habitats in the Maldives. This research provides evidence to support the protection of habitats, particularly from a fisheries perspective.

Both with previous experience working for NGO's such as Olive Ridley Project and Maldives Whale Shark Research Project, Kaia and Humaam joined the MUI team in the latter part of 2019. During their time in Laamu they undertook individual research projects focusing on sediment dynamics around the island and turtle grazing in our seagrass meadows. Kaia and Humaam also assisted with the data collection and processing of samples collected for our blue carbon research project and the Smithsonian seagrass food webs research project.

OUR COMMUNITY

Compared to Six Senses Laamu's population of approximately 500, Laamu Atoll's 13,000 residents play an even greater role in ensuring a sustainable future for the beautiful atoll we call home.

Educating, inspiring, and empowering Laamu's eleven island communities is key to building a generation of marine stewards. It is our responsibility to equip our neighbors with the knowledge, skills, and resources to unite others in the fight against climate change, overfishing, unsustainable development, and the many other threats which face this dispersed island nation. Through extensive education and community outreach programs, MUI is engaging with community members from all walks of life, from school children to fishermen, and council members to tour guides, all of whom play a vital role in protecting our home together, *eku eky.*

"In the end, we will conserve only what we love, we will love only what we understand, and we will understand only what we are taught."— Baba Dioum.

Photo credit © Leanna Crowley

THE EVOLUTION OF

EKU EKY

Six Senses Laamu's Eku Eky Program encompasses the resort's education and community outreach work. By providing the community with an opportunity to share information with the resort this program is reciprocal in nature. The Eku Eky program, meaning 'together in Dhivehi, was launched in 2016 to strengthen relationships between the resort and local communties in Laamu.

Eku Eky meetings are held three times a year, bringing together representatives from the atoll council and 11 island councils, women's development committees, 13 schools, 5 police stations, and active local NGOs, whom together represent the voices of Laamu's 13,000 residents. These meetings are a chance for the resort to educate participants on environmental issues and share the work being done to solve them. They also provide the opportunity for the community to share ideas, concerns and proposals for sustainability fund projects.

In 2019, we saw a shift as the community took greater ownership of the program. For the first time since its inception, the meetings were held in local islands rather than Six Senses Laamu. Three different islands hosted 97 representatives across the three meetings throughout the year, each included an island tour and knowledge exchange workshop, signaling a new era of collaboration, working together, eku eky, in Laamu.

Information sessions in addition to scheduled eku eky meetings were also requested in 2019, including a meeting between representatives from the Maldives National Defence Force and BLUE to discuss the challenges of climate change adaptation, disaster management, and resiliency in the Maldives.

DIVING INTO

OUTDOOR LEARNING

195 sets of snorkeling gear donated to schools

All **13** schools in Laamu now have their own snorkeling equipment

114 school children taken on snorkeling excursions

Photo credit © Leanna Crowley

2016

Feedback from the representatives at the inaugural Eku Eky meeting in 2016 was that the resort only benefits islands closest to it...

Photo credit © Leanna Crowley

2017

...so, MUI conducted community outreach visits to all 11 islands and 13 schools to deliver marine and environmental education programs for schoolchildren, fishermen, and community members. However, the team recognized the lack of practical application the students had regarding the marine topics they were learning about.

Photo credit © Leanna Crowley

2018

BLUE responded by donating locally-relevant marine books to all schools and the entire MUI team helped take more than 300 students snorkeling as part of the Ministry of Education's Farukoe Program. After snorkeling for the first time, many students said they would love to go every day if they had the equipment.

Photo credit © Leanna Crowley

Photo credit © Leanna Crowley

2019

Six Senses Laamu facilitated a grant for The Manta Trust from Blueyou Consulting, an organization working on fair-trade fisheries in Laamu. In collaboration with Mares and Waterproof Sports, The Manta Trust was able to purchase 15 sets of Mares snorkeling equipment for each of the 13 schools in Laamu. Now, students can explore their backyard coral reefs whenever they want, fostering a closer relationship with the ocean and an increased desire to protect it.

2020

The same grant funding from Blueyou Consulting has been secured for 2020, meaning all schools will receive an additional 15 sets of snorkeling equipment in the coming year!

HELLO
HALLU

Hello Hallu means ‘hello solution’ in Dhivehi and aims to educate groups of school students about the environmental issues facing their communities. Furthermore, the program encourages student to devise solutions to tackle these problems and mitigate their detrimental impacts. Hello Hallu focuses on promoting equal participation from males and females, as well as developing practical skills such as such as swimming, snorkelling and experiencing the marine environment first-hand.

In 2019, MUI delivered the four-module Hello Hallu Program to 54 students in three schools in Laamu Gan. The aim is to expand this program to reach all 13 schools and over 3,000 students across the entire atoll, and ensure marine conservation becomes a core component of the national school curriculum.

Six Senses Laamu guests also have the opportunity to positively impact the Laamu community. Upon confirming their booking, guests are sent ‘packing tips’ to advise on how to pack efficiently and sustainably for their trip. Some examples include bringing only reef-safe sunscreen, avoiding single-use plastics and taking trash they produce home with them. Guests are also encouraged to bring specific items to help local children explore their marine environments and live a plastic-free lifestyle. Some even join the MUI team on school visits to donate their items personally! In 2019, our guests donated:

- 91 reusable bags
- 71 reusable water bottles
- 31 books
- 12 goggles
- 3 snorkel kits

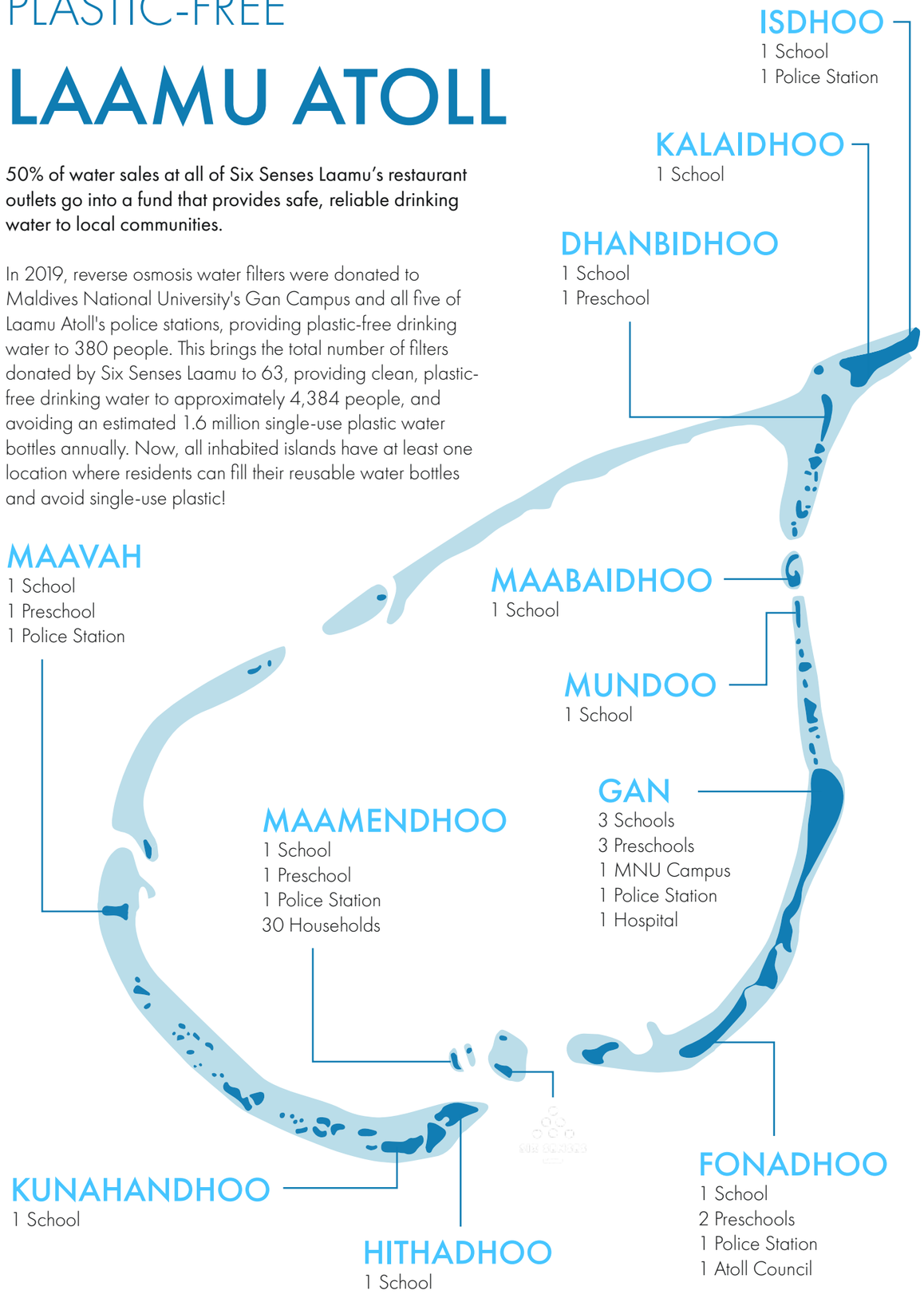
LAAMU STORIES

Meet Zumya, a 12 year old from our Hello Hallu progam who's story was featured on a global stage this year. In 2019 BLUE partnered with Planetari, an education platform aligned with the United Nations Sustainable Development Goals (UNSDGs), to create an educational 'makerzine' entitled *An Ocean Adventure*. It features the story of Zumya, a girl from Six Senses Laamu's neighbouring island Laamu Maamendhoo, who dreams of a marine protected area near her island.

PLASTIC-FREE LAAMU ATOLL

50% of water sales at all of Six Senses Laamu's restaurant outlets go into a fund that provides safe, reliable drinking water to local communities.

In 2019, reverse osmosis water filters were donated to Maldives National University's Gan Campus and all five of Laamu Atoll's police stations, providing plastic-free drinking water to 380 people. This brings the total number of filters donated by Six Senses Laamu to 63, providing clean, plastic-free drinking water to approximately 4,384 people, and avoiding an estimated 1.6 million single-use plastic water bottles annually. Now, all inhabited islands have at least one location where residents can fill their reusable water bottles and avoid single-use plastic!



LAAMAFARU
FESTIVAL

For the past three years, Laamu Turtle Festival has raised awareness about sea turtles and has brought thousands of people together to pledge 'Turtles in Laamu – Safe and Protected'. MUI recognized the growing need to raise awareness about the conservation of entire marine ecosystems and the services they provide, in order to safeguard the Maldives from the negative effects of climate change. That is why this year, local stakeholders in Laamu Atoll voted to broaden the scope of the 4th annual festival to Laamafaru Festival, or 'Laamu's Reefs Festival' in Dhivehi, with the theme 'Our Ocean – Safe and Protected'.

This community event has grown from 500 attendees at the first ever atoll-wide turtle festival in 2016, to over 1,500 participants from across Laamu Atoll in 2019, this time on Laamu Maamendhoo. The festival kicked off with an opening ceremony and speech by chief guest and one of the Maldives' first team sport gold medal winners, Rafa Nazim. The 16-year old table tennis star emphasized the power of young people to make a difference in their communities and led the participants in a sea creature parade and #ClimateStrikeMV. Festival attendees had an important message: "Laamu's habitats of coral reefs, seagrass, and mangroves protect our islands against climate change!" The march was part of the global movement of over 4 million people, initiated by another 16-year old, climate activist, Greta Thunberg.

MUI, along with Maldives Whaleshark Research Project, Maldives National Defence Force, and the Environmental Protection Agency, organized interactive activity stalls themed around these three important ecosystems in Laamu. School students performed The Laamu Story, a collection of significant natural and historical heritage skits about each of their islands, and competed in Laamu's first atoll-wide swim race. Finally, through a generous grant from Blueyou Consulting and support from Mares, MUI was able to donate 15 sets of snorkeling equipment to each of Laamu's 13 schools, ensuring students will be able to explore their island's marine ecosystems whenever they want!

All photos credited © to Leanna Crowley

LAAMASEELU

FARUDHUN

Getting the local community involved in conservation is critical in order for it to be a success. This year, BLUE launched a citizen science program called Laamaseelu Farudhun to do just that. It translates to 'exemplary citizens' in Dhivehi and aims to train local community groups to understand and take ownership of their island's natural resources, including coral reefs, seagrass, and mangroves.

The first session brought together 21 representatives from NGOs, higher education institutions and the Maldivian government, from seven of the eleven inhabited islands in Laamu, to learn about seagrass monitoring methods. Following the session, participants felt confident to carry out their own surveys. The first independent survey took place on Fonadhoo island shortly after the training. Members of the NGO, Laamu Tours, successfully surveyed and mapped 66,500 square meters of their island's seagrass meadow!

66,500m² of seagrass monitored by volunteers

21 volunteers trained through the project

11 islands of the 13 in Laamu represented within the volunteer team

Photo credit © Matt Porteous

MALDIVES RESILIENT REEFS

SEMINAR SERIES

Six Senses Laamu welcomes internationally-renowned experts in marine conservation and ocean science to train the MUI team in research methods, host unique workshops with guests, and become part of our network of scientific advisors. Not many aspiring conservationists in Maldives have access to visiting experts like these, so BLUE launched the Maldives Resilient Reefs Seminar Series to share their expertise with these young environmentalists.

The public talks were co-hosted by Six Senses Laamu, Blue Marine Foundation, and the Maldives National University. They provided an opportunity for current and aspiring conservationists in Male' to increase their knowledge about global conservation issues and their relevance to the Maldives. The series also provided an opportunity to connect with international academics and explore opportunities for collaboration.

Some highlights of the 2019 seminar series include:

- *The Case for Seagrass Protection in the Maldives* by Professor Paul York
- *Climate Change and Future Implications for the Maldives* by Professor Callum Roberts
- *Redefining Sustainable Tourism* by Marit Miners, Co-Founder of Misool Eco Resort
- *Spawning Aggregations and their Benefits to the Maldives* by Professor Yvonne Sadovy
- *Discovering the Diversity of Coral Reef Fishes* by Dr. Mark Erdmann
- *Blue Carbon: A New Weapon Against Climate Change* by Dr. Peter Macreadie
- *Seagrass Monitoring* by Professors Mike Van Keulen and Mike Rasheed

Photo credit © Philippa Roe

OUR HOME

Guests choose to stay at Six Senses Laamu because they know they will be supporting a responsible business that is going beyond just running a hotel, but also giving back to the community, protecting the environment, and providing authentic experiences. We are working on global issues at a local level; Great Pacific Garbage Patch? Meet Plastic-Free 2022! Bycatch and overfishing? Say 'hello' to local, artisanal seafood! Degenerative agriculture? Please welcome our permaculture principles! A stay at Six Senses Laamu is a peek into our sustainable home.

Photo credit © Andy Ball

PLASTIC-FREE

2020

Six Senses has an ambitious, company-wide goal to be plastic-free by 2022. Plastic pollution is a threat to both human and ecosystem health, so comes in direct conflict with our core brand pillars of wellness and sustainability. The ultimate goal is to reduce our guests', hosts', local communities', and wildlife's exposure to this fossil-fuel-based, toxic material.

Plastic waste at the resort has been inventoried, alternatives have been sourced, and suppliers have been engaged. Prioritising single-use and disposable plastic, we aim to transition to natural, composable materials where possible, and to high-quality, resusable materials where not.

Our most challenging area, but also the one with the most progress, is food and beverage. While plastic packaging provides the necessary elements of hygiene and food safety, it also contributes to a large portion of the resort's plastic waste production. In 2019, we made substantial reductions in plastic use through producing pastas, sauces, jams, preserves, and spice mixes in-house. We also switched to using biodegradable Airseafoods x Biobiene Thermoboxes, made from cardboard, bamboo, and jute fibers, instead of using styrofoam boxes.

Six Senses Laamu is one of only three hotels in the world that makes its own artisanal, small batch chocolate. Previously, we used one and a half 10kg plastic bags of chocolate drops + one 6kg plastic box of chocolate compound per week - equal to 78 plastic bags + 52 plastic boxes + an estimated 100,000km worth of transport emissions per year. Now, this has been replaced with whole cocoa beans in cardboard boxes with brown paper packing. The homemade chocolate is used in the pastry kitchen, ice cream parlor, and chocolate studio to make thirteen different flavored bars for the mini bar and boutique.

LAAMU STORIES

Alvina hails from St. Lucia, an island nation in the Caribbean, where she learned to make chocolate five years ago. By working closely with our neighbors in the Sri Lankan highlands, she is able to source fair trade Criollo cocoa beans from farmers who are guaranteed a living wage. Our Sri Lankan chefs even visit the farms during trips home to check up on the cocoa trees and help us source other local products, such as cashew nuts, vanilla, rhubarb, strawberries, mushrooms, and sugarcane. Alvina hosts a chocolate workshop twice a week to share the history of cocoa production, farming, and fermentation with guests.

100% of chocolate produced in-house

50% reduction of styrofoam boxes

30% reduction of plastic packaging in dry store items by producing items in-house

Photo credit © Rifhaan Ali

LAAMASEELU

MASVERIYA

Six Senses Laamu is working with the fishermen of Laamu Atoll to ensure all fish served on the resort's menus are sustainably sourced and that fishermen benefit from abiding by sustainable fishing practices.

Laamaseelu Masveriya means 'exemplary fishermen' in Dhivehi, and is a program developed by Blue Marine Foundation that sets a code of conduct the fishermen and the resort follow to ensure that the entire process, from fishing to purchasing, is done sustainably. Examples include avoiding fishing in voluntary protected areas and releasing all vulnerable fish, parrotfish, and juvenile fish. The code of conduct was developed based on data collected in 2019 and was a collaboration between BLUE, purchasing, F&B and resort management. Purchase data was analyzed to reveal that the resort purchased 43,527 kg of fish from 50 different small-scale fishers in 2019. Of these, only 17 sold their catch more than 10 times, illustrating a core group of fishers that sold to the resort consistently. 65% of fish products were sourced from Laamu Atoll, with pelagic fish (tuna) comprising 44%, shellfish 21%, and reef fish 20%.

BLUE interviewed fishermen who frequently sold their catch to Six Senses Laamu and discovered that most were opportunistic, targeting many different species whilst maintaining other sources of income. By understanding these fishers' practices and challenges, training relevant resort departments, and reviewing feedback from resort management, the BLUE team was able to come up with solutions that work for everyone and will increase the resiliency of Maldives' reefs in the face of climate change.

1st sustainable reef fishing code of conduct in the Maldives

43,527kg of reef fish sourced sustainably by Six Senses Laamu

17 dedicated local fishermen who sell to the resort

Photo credit © Matt Porteous

LAAMU STORIES

Did you know the coconut tree is the national tree of Maldives? Every stage of coconut development has a different name in the local language of Dhivehi and all parts are used - nothing is wasted. We have more than 200 coconut palm trees on Olhuveli Island, which provide our chefs with hydrating coconut water, creamy coconut milk for curry, shredded coconut for ice cream, and much more. Earth Lab is our island hub for self-sufficiency and zero waste, where we make as much on-site as possible and work towards zero waste through upcycling. Two of our newest products at Earth lab this year are extracted from the humble coconut: virgin coconut oil and coconut palm sugar.

Photo credit © Leanna Crowley

PERMACULTURE

PRINCIPLES

Permaculture (n): an agricultural system that seeks to integrate human activity with natural surroundings to create highly efficient, self-sustaining ecosystems.

Every Six Senses property has a garden or farm to produce as much food as possible on-site. Reduced transportation miles, carbon emissions, and packaging are all benefits of growing fresh produce. Our Leaf Garden is located adjacent to Leaf Restaurant where our produce is served just a few hours after harvesting. Also nearby is the Chili Table and Kukulhu Village, home to our flock of feathered friends.

Photo credit © Rifhaan Ali

Photo credit © Rifhaan Ali

OUR **VOICE**

During its second year of existence, the MUI brand shared our #LaamuStories on a global stage, and the world listened. Our online community now consists of over 9,300 dedicated, conservation-minded, followers from 46 different countries. In 2019 we had over 2 million impressions on this community, meaning our online reach has more than tripled in the last year. With the launch and growth of our Twitter page, the MUI conversation is reaching new ears, especially here in the Maldives.

Our achievements as a team were brought to a wider audience through Six Senses Laamu's MUI-related coverage in press releases. Some of these included our #ProtectMaldivesSeagrass campaign, the development of manta ray ultrasound technology, the launch of our Junior Marine Biology program and claiming the title of Leading Eco-Resort at the Maldives Travel Awards 2019. These achievements were shared with audiences across the world through 35 articles written in a variety of magazines, blogs and publishings.

In 2019 we continuously pushed ourselves to find innovative ways to tell our stories. Virtual reality proved to be an amazing educational tool throughout 2019. A stunning manta ray was filmed by the team through placing our 360 degree camera in a custom housing and bringing it to a cleaning station almost 20 meters below the surface of the ocean. Similar videos were created in Laamu's seagrass meadows and aboard a tuna fishing boat in the middle of the ocean. These films have since been shared with hundreds of people, such as our guests, local school children, online followers and colleagues. No matter how old you are, what language you speak, if you're a diver, a snorkeler, or simply can't swim, virtual reality provides us with incredible moments that many couldn't experience underwater.

Photo credit © Leanna Crowley

306% increase in the number of accounts reached

2,215,154 impressions made across social media

35 articles written about MUI's achievements

LAAMU STORIES

At Six Senses Laamu we have welcomed some incredible content creators such as Erin Quigley, Jon Rawlinson, Roger Munns and William Tan. A highlight for our team in 2019 was a visit by Dr. Alex Mustard, and Eleonora Manca, two of the world's most renowned underwater photographers. After hearing our story on their first day in Laamu, they decided to point their cameras away from the marine life, and towards the MUI team instead. They wanted to tell the story of the work we do as ocean guardians. Alex's photography captured our passion and efforts perfectly and is featured throughout this report.

Photo credit © Alex Mustard

#PROTECTMALDIVES
SEAGRASS

In 2019 we witnessed, first-hand, the power of social media for conservation through the #ProtectMaldivesSeagrass campaign, launched in partnership with BLUE.

A survey suggested that over 50% of resorts in the Maldives actively remove their seagrass meadows. It was evident that there was a lack of awareness of the significant role seagrass meadows play as sediment stabilizers, nutrient filters and in protecting, and maintaining the health of, coral reefs. To address this knowledge gap, we turned to modern communication and became the voice for the world's only underwater flowering plant.

While the #ProtectMaldivesSeagrass movement is still growing, the main focus of the campaign lasted for three months from March to May of 2019. During this period we aimed to partner with a minimum of 25% of resorts in the Maldives, raise awareness amongst tourists and locals of the importance of seagrass, and create the conditions required for policy change on seagrass protection at resorts across the Maldives. Through four sub-campaigns we highlighted reasons why we should protect these ecosystems. These were shared on our own social media channels, as on the channels of supporters of the campaign

In just three months, the #ProtectMaldivesSeagrass campaign exceeded what we thought possible. The campaign was officially endorsed by the Maldives Ministry of Tourism, a body that had previously asserted that seagrass hindered tourism. Since March 2019, we have partnered with 37 resorts across the Maldives who have each pledged to protect their meadows, as well as 22 local and international organisations, including Greenpeace International and WWF UK. Over 900,000m^2 of seagrass meadows in the Maldives has been protected and over 1,600 people have pledged their support for the campaign online. These numbers continue to grow as more stakeholders start to see the value in their underwater meadows.

Social media allows us to reach a size of audience we never considered possible, making the sky the limit for conservation campaigns like this one. Our #ProtectMaldivesSeagrass content and storytelling was deemed engaging enough to be shared by some of the world's most renowned social media accounts, including BBC Earth, who's sharing of our virtual reality film resulted in over 53,000 views.

WITH LOVE
FROM LAAMU

The conservation efforts of the Maldives Underwater Initiative are made possible by the generous contributions and donations of our supporters.

We would like to say a special thanks to Six Senses, our owners and our dedicated guests who visit us year after year, always curious to learn more. Our general manager, Marteyne, who's passion for marine conservation drives and empowers us. Our partners, the Manta Trust, Blue Marine Foundation and Olive Ridley Project; through our collaboration we will continue to achieve incredible things for Laamu. We are thankful for Laamu's community, especially the Atoll Council, who have welcomed us into their home, continuously inspiring and facilitating change. Thank you to you, our supporters from around the world who continue to read and share our stories. And finally, we would like to thank our international network of renowned scientists, storytellers, research institutions and other organizations who have dedicated their expertise towards making MUI's goals a reality.

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DONATE TO BLUE MARINE FOUNDATION
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VISIT US AT SIX SENSES LAAMU

Your stay with us will contribute to the Sustainability Fund, which directly supports the work of MUI

FOLLOW MUI

@MaldivesUnderwaterInitiative

Photo credit © Matt Porteous

AN INITIATIVE BY

SIX SENSES

LAAMU

IN PARTNERSHIP WITH

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