



ATOLL
MARINE
CONSERVATION
CENTRE
NAIFARU.MALDIVES

2022 REPORT

ATOLL MARINE CENTRE



PREPARED BY ATOLL MARINE CENTRE FOR THE
ENVIRONMENTAL PROTECTION AGENCY

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93%

RELEASE RATE



12

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PARTNERED WITH PARLEY



RE-LAUNCHED CORAL RESTORATION PROJECT

HOSTED VOLUNTEERS FROM AROUND THE WORLD

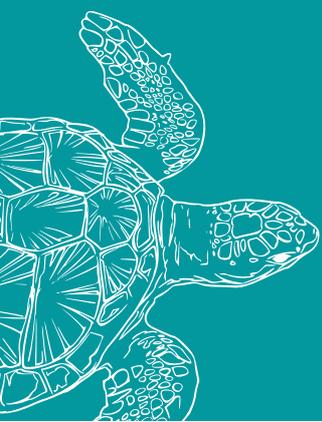
PARTICIPATED IN GLOBAL WEBINARS

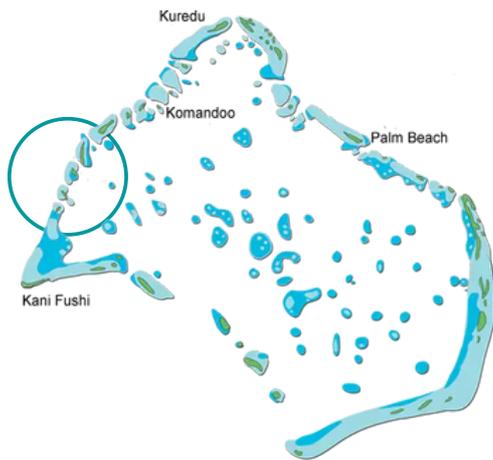
RECEIVED UNDP GRANT

RECEIVED GRANT FROM UNDP TO INSTALL MALDIVE'S

FIRST EVER

FLOATING MARINE CENTRE





ABOUT ATOLL MARINE CENTRE

Atoll Marine Centre was founded in 2012 by locally run Non-Governmental Organisation Naifaru Juvenile. The centre was opened as a response to the large number of hatchlings being kept as pets on local islands. Through the involvement, education and empowerment of the local community this practice is no longer commonplace.

Our focus since, has shifted from rehabilitating turtle hatchlings to rescuing and rehabilitating adult turtles found stranded or caught in ghost nets.

We collaborate with local NGO's, marine biologists, local fishermen, schools and resorts to make sure that Lhaviyani Atoll is knowledgeable of the threats of plastic and ghost nets. We offer a place for injured sea turtles to overcome their injuries and be released back into their ocean home.



MISSION, VISION, AND GOALS



RESCUE AND REHABILITATION



COMMUNITY OUTREACH



CORAL RESTORATION

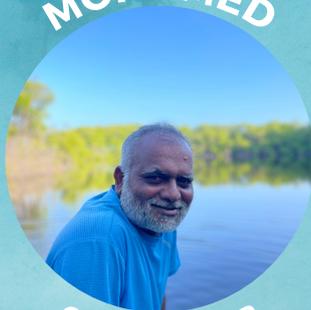


PROTECTION OF NAIFARU AND SURROUNDS

THE 2022 AMC TEAM

The 2022 season saw the recruitment of 16 staff members including 3 Veterinary Surgeons, 4 Volunteer Coordinators, 2 local Maldivian Interns and 7 Marine Biologists. We thank each of our voluntary staff members for their contribution throughout the year. Below are some of incredible staff members we'd like to recognise.

MOHAMED



CO-FOUNDER

KATHRYN



MARINE BIOLOGIST

EMMA



MARINE BIOLOGIST

JO



VET

ANUM



INTERN

KAYLA



MARINE BIOLOGIST

KIMBERLY



VOLUNTEER COORDINATOR

NATASSIA



VET

DHUA



INTERN

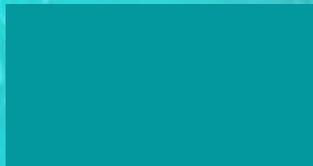
A special thank you to the members that contributed to this report: Anum, Dhuaa, Emma, Jo, Kathryn and Kimberly.

Additional staff members: Nattu, Abbie, Niki, Emma, Olivia, Kiah, Jessica & Leda



HIGHLIGHTS

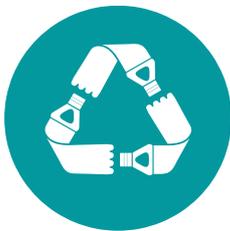
2022 HIGHLIGHTS, ACHIEVEMENTS
AND NOTEABLE MOMENTS



2022 HIGHLIGHTS



Twenty-twenty-two signified an incredible year for AMC; many exciting visions came into fruition and the rebuilding of the centre post-pandemic saw developments in social, environmental and economic aspects of the NGO. Through a partnership with Parley, the recruitment of international volunteers, involvement in webinars, the achievement of a grant from the United Nations Development Program and the relaunch of the local coral restoration program AMC has high hopes for the 2023 endeavors.



PARLEY



**ATOLL
VOLUNTEERS**



WEBINARS



**FLOATING MARINE
CENTRE UNDP
GRANT**



**CORAL
RESTORATION**

2022 HIGHLIGHTS



PARLEY

In October Atoll Marine Centre facilitated a partnership with Parley Maldives. Unfortunately, there are no proper waste management or recycling facilities in the whole of the Maldives, however, partnering with Parley means that plastic bottles can be collected and shipped overseas to be recycled into clothing materials. This project is an incredible opportunity for reducing plastic pollution in and around Naifaru.

The local school, Madhrasathul Ifthithaah, is also getting involved via Parley AIR Challenge. This challenge encourages students to 'Avoid' using plastic, 'Intercept' plastic waste, and 'Redesign' the way that plastic is used. So far, the students have conducted four clean-ups in the local area and have participated in two 'Reef and Me' snorkel challenges to encourage them to connect with the environment and grow their passion for protecting the oceans.

Two collection points have been created, one at Atoll Marine Centre, and one at Madhrasathul Ifthithaah, for students to bring their plastics to be recycled. Many local restaurants have also agreed to put aside plastic bottles for us to collect so they can be sent off for recycling.

We are hoping to expand on this project, conducting regular clean-ups and other AIR Challenge activities for the students, as well as placing more collection points for locals to use. It has been great to see the positive response of the community towards this project, and we are very excited to continue to increase involvement.

ATOLL VOLUNTEER PROGRAM

"I am extremely happy I took the chance to join this place on Earth which is stunningly beautiful, yet needs our support. If you're looking for a both extremely rewarding, yet super fun experience - here it is!
~ Julia, 2022

International volunteers are vital to ensure smooth running of the centre, and enable individuals to learn more about turtle rehabilitation and gain experience in this field. This year we had a total of 100 volunteers from many different countries. We are extremely grateful for our volunteers, who also contribute heavily to our funding, alleviating the financial stress on the centre.

VOLUNTEERS THIS YEAR:

100



CORAL RESTORATION

This year Atoll Marine Centre re-launched its coral restoration project, which had been put on hold since the pandemic. The coral restoration project was started in 2014, with 12 frames placed in our nursery prior to 2020. The aim of the project is to increase coral cover and fish abundance on our reef. In October we were able to restart monitoring the frames, cleaning algae off the frames and chipping away any dead fragments to allow room for more growth. Despite a lack of maintenance, the fragments continued to grow fairly well through the pandemic.

In addition to this, we placed two new frames within the nursery site in October, and one in December. The fragments collected were from our house reef and had already broken off due to anthropogenic or natural environmental damage. We have taken baseline measurements of both our new and pre-existing frames so that we can assess the amount of growth in 6 months' time. After measuring the depth, width, and length of the fragments we were able to calculate the ecological volume index, enabling us to compare growth.

We also conducted a fish survey along a transect of 20m adjacent to the frames, we plan to do the same survey in 6 months to see if fish abundance surrounding the coral frames has increased.



TALKS AND EVENTS

WOMEN'S CONFERENCE

In June our Marine Biologist, Kayla Rowe, and our veterinarian, Dr Natassia Mannina, were invited to speak at The role of women in environmental conservation conference, organised by Bridging the Communities Maldives, a locally run women’s empowerment NGO. At the event Kayla spoke about the work of Atoll Marine Centre, in addition to highlighting environmental issues and threats in the Maldives. Kayla also discussed the role that women can have in environmental conservation and how local women can start a career path related to marine biology or environmental science.

Natassia spoke about threats faced by land animals and birds in the Maldives, especially focusing on the stray cat population and how everyone can work together to help solve this issue.



SEA TURTLE CONSERVATION IN THE MALDIVES



Kayla Rowe also had the opportunity to speak as part of the Sea Turtle Conservation in the Maldives live webinar, where she discussed the use of sea cages in turtle rehabilitation, as well as our plans for the floating marine centre.

MARINE SYMPOSIUM

In December our Marine Biologist, Kathryn Skazick, our veterinarian, Dr. Jo Ditzel, and our intern, Fathimath Dhuaa, were invited to talk at the Islamic University of the Maldives Marine Symposium. At the event we had the opportunity to present the work we do at the centre as well as highlighting certain threats to the marine environment and solutions for the future. The students also got to meet the turtles at our centre via livestream.

After presenting, our team participated in discussion groups with the students focusing on brainstorming solutions to protect the oceans, career opportunities for the future, and the importance of the blue economy in the Maldives.

This symposium was the first of what will become an annual event. We are excited to work closely with the Islamic University of the Maldives in the future.

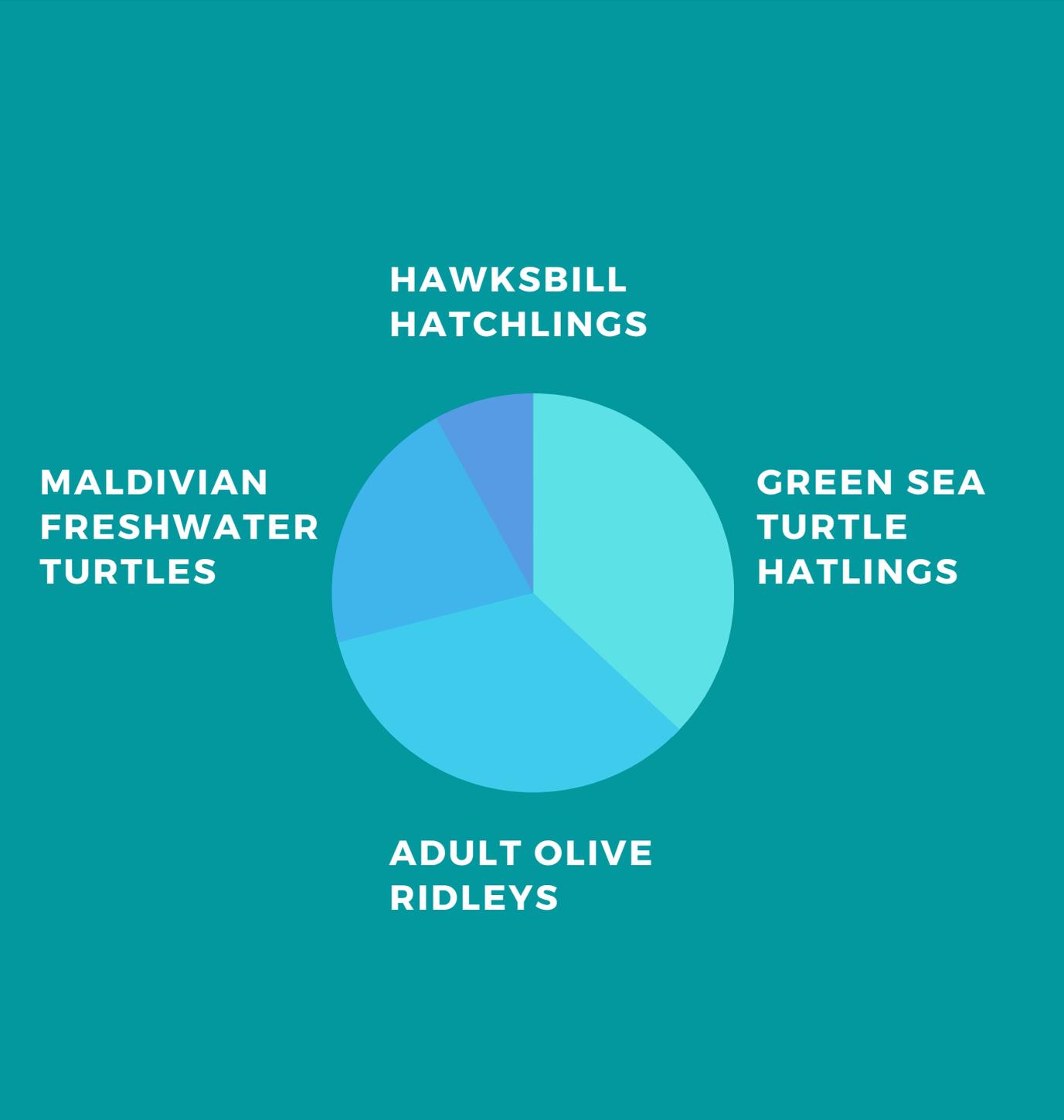


TURTLES

THE YEAR OF 2022 HAS BEEN VERY ENCOURAGING IN TERMS OF TURTLE ADMISSIONS, RELEASES AND ANIMAL WELFARE.

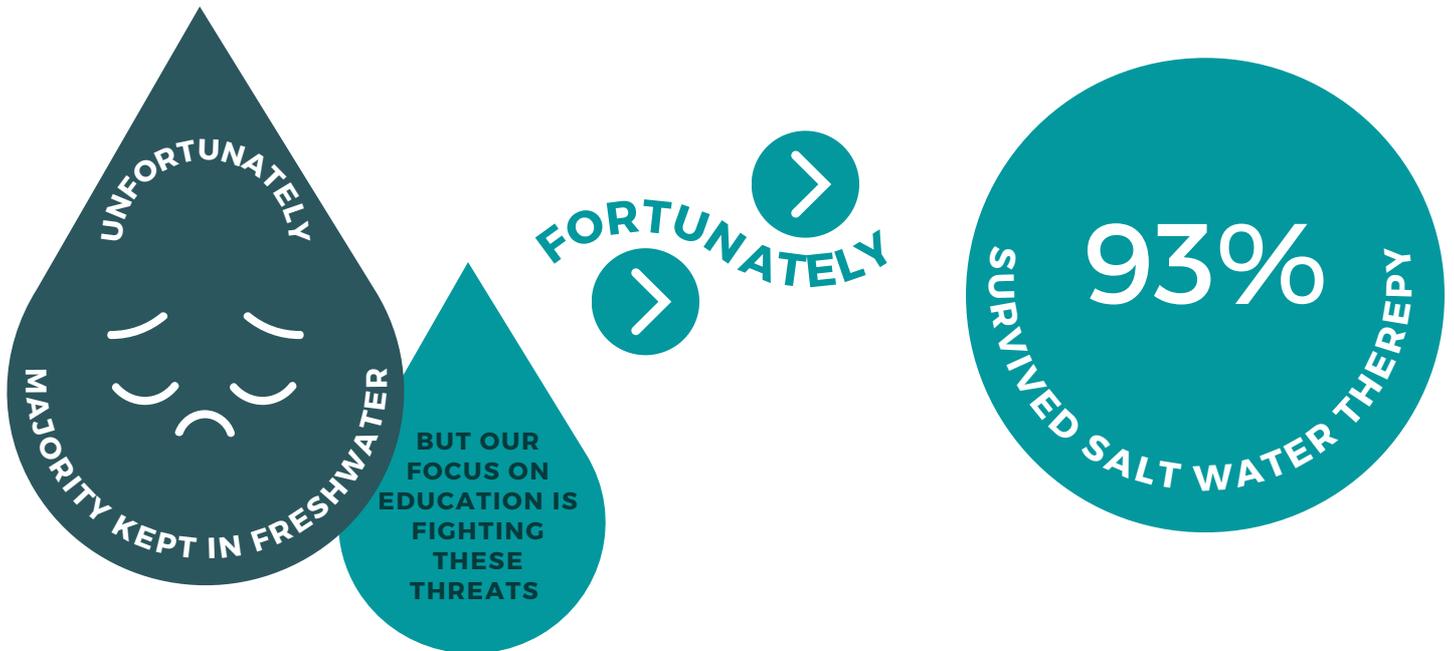
ADMISSIONS

This year we had a total of **43 admissions** of which there were **21 (37%)** green sea turtle hatchlings, **12 (34%)** adult Olive Ridleys, **8 (21%)** Maldivian Freshwater Turtles and **3 (8%)** Hawksbill hatchlings. Of the mature Olive Ridleys, **12 (58%)** were male and **5 (42%)** female. Out of 43 admissions, an impressive **35 (92%)** were successfully rehabilitated and released.



HATCHLINGS

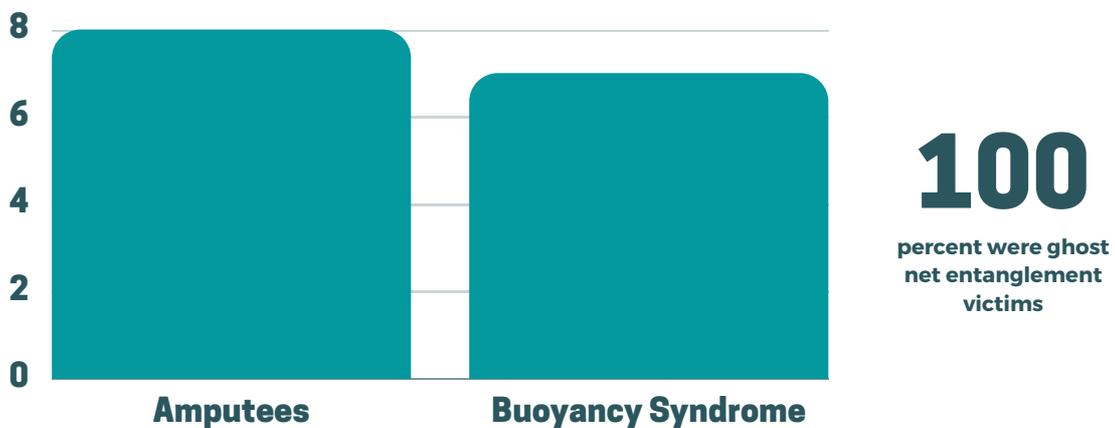
The majority of our hatchlings were surrendered to us after being kept as pets (a great homage to our education programme) but the majority were sadly kept in freshwater. 93% successfully survived salt water transition therapy with only one fatality, which had unfortunately been kept in fresh water for four weeks and was too debilitated to be saved. We also lost one Hawksbill hatchling which was full of plastic on necropsy. The average time until release was 10 days. We are still seeing a large number of hatchlings being handed in to the centre and poached nests on uninhabited islands - a problem we hope to tackle head first in 2023 by establishing more frequent patrols and surveillance.



ADULTS

ADULT ADMISSIONS

100% of our adult sea turtles were rescued due to ghost nets entanglement and 8 (66%) of these had lost at least one flipper at sea. 7 (58%) suffered from Buoyancy Syndrome, quite possibly the biggest medical complication we see in turtle rescue in the Maldives.



The average stay from rescue to release for adults was 42 days. Kalo and Xena are heartwarming success stories for our centre this year; a male and female adult Olive Ridley sea turtle who overcame their buoyancy syndrome after 2 months and were able to be released with three flippers present, thanks to ORP’s wound care. These are great examples of how two centres can collaborate to produce the best outcome for the turtles - something we hope to work on more in the new year. Juanita sadly suffered from chronic buoyancy syndrome and didn’t survive the anaesthetic and investigations performed alongside ORP.



CURRENT TURTLES

We currently have seven turtles in our centre; four adult Olive Ridelys, one juvenile Olive Ridley and two juvenile Greens. Our four adults are all undergoing rehabilitation for buoyancy syndrome (e.g. sea swims, weight jackets and diving enrichment).

CORA

Cora has been making great improvement with his diving and has been corporately sponsored by CoraCora Resort, who are funding the development of prosthetic flippers in collaboration with Salford University, UK. The project will massively aid his ability to dive, as he currently lacks the propulsion needed from his front flippers and will be very beneficial for research within this field.



DAY 3 OF WEARING WEIGHT JACKET



DAY 9 OF WEARING WEIGHT JACKET

CURRENT TURTLES



OLGA

Olga has been at the centre for 3 years with some slow progress in her diving ability, but the percentage of her carapace that is still buoyant remains the same when stationary. She still possesses one flipper and is therefore a candidate for release, but will require further investigations with ORP if she fails to improve.



TOM

Tom has been at the centre for 4 years and is showing very slow diving progress. Sadly he can never be released due to missing both of his front flippers. Further investigations are required to decide a future plan for Tom.



CURRENT TURTLES



RASKAN

Raskan is unfortunately very sick at the moment. She does not move her back legs but does eat and interact with people. She is receiving long term pain relief to keep her comfortable.



BISCUIT

Biscuit, our juvenile Olive Ridley has one flipper but dives very well. They interact well with their scrubbing brushes, buoys, tunnels and frames. We believe Biscuit is a fantastic candidate for an aquarium as they are very young and have already adapted well to life in captivity with one flipper. Our previous vet Natassia is now stationed in Abu Dhabi, so we would like to re-present our proposal for Biscuit to go to Dubai Aquarium and be monitored indirectly by her.

CURRENT TURTLES

HOPE AND DONATELLO

Hope and Donatello are our juvenile greens, who both have lordosis (curvature of the spine and carapace). Again, we believe these two turtles are not in pain and have a good quality of life as they engage with enrichment such as frozen sea grass, tunnels, floating toys, puzzle feeding, buoys and huts. We believe these are the only two turtles in the world with this condition and are looking to radiograph them once we acquire an x-ray machine and document it, as it has never been seen before in the literature. We continue to monitor their quality of life carefully.



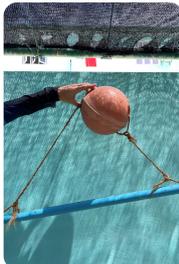
ENRICHMENT

This year we have implemented a strict 'enrichment day' every Friday, where we dedicate the day to creating new toys, ways to feed and exercise their minds and bodies. We are also collecting data on their progress with these so we can accurately measure the impact of these changes and trends over time. We have now also sourced mussels, shrimp, cuttlefish and crabs which have improved the quality and variety of their diet massively.

ENRICHMENT GUIDE

Eat **Play** **Clean**



 <p>Green ball</p>	 <p>Sinking pipe</p>	 <p>Scrubbing brush</p>	 <p>Seagrass bed</p>
 <p>Ice block</p>	 <p>Scrubbing brick</p>	 <p>Floating buoy</p>	 <p>Seagrass tunnel</p>
 <p>PVC hoop</p>	 <p>Red weight</p>	 <p>Foam buoy</p>	 <p>Triangle</p>



TURTLE WELFARE

Moving forward into 2023, we believe that the welfare of our turtles is only going to improve. All turtles will soon be able to live out at sea in our Floating Marine Centre, the most natural environment we could possibly provide in captivity. An increase in funding from resort visits means we are now also ordering an ultrasound, centrifuge and biochemistry analyser, so we can better assess their general health with PCV, Total Solids and Biochemistry. Publishing these results will also be vital for research, as so few people know the 'normals' for Maldivian Olive Ridges. Ultrasound (and hopefully soon x-ray too) will also help us better assess those with Buoyancy Syndrome.

Overall we feel that the welfare of our turtles is going to go from strength to strength with more education and surrender of hatchlings, a better release success rate, stronger rehabilitation tools, better diagnostics to tackle diseases and buoyancy syndrome, and a more thorough and enforced enrichment program to provide the best care whilst they are in our centre.

2023

VET EQUIPMENT GOALS



X-RAY MACHINE



CENTIFUGE



BIOCHEMISTRY ANALYSER

EMPOWERMENT, INVOLVEMENT AND CONNECTION WITH THE COMMUNITY IS AT THE FOREFRONT OF AMC'S GOALS

COMMUNITY



TURTLE FESTIVAL

In August, AMC and Naifaru Juvenile hosted the Six Senses Kanuhura Lhaviyani Turtle Festival 2022. This was the first Turtle Festival since the covid pandemic which turned out to be a huge success! Approximately 2000 people attended from all over the Maldives, with participation from the local community of Naifaru, four schools within Lhaviyani Atoll, various marine conservation NGOs, and special guest the Minister of Tourism.

The focus of the festival was to raise awareness and educate the local communities about the environment, marine conservation, the importance of sea turtles and efficient waste management. The day consisted of cultural dances, panel discussions, environmental workshops, competitions and activities, all of which focused on educating the youth and shifting the communities focus towards the environment and marine conservation.



Educating the younger generation on the importance of the marine environment is vital in ensuring the future is liveable. They are the next generation responsible for creating policies, decision making, and developing laws and regulations that ensure a healthy environment. With the interaction and engagement from the students, we believe that the future of the Maldivian marine environment is in good hands. We hope that this message is extended to the elder generation and passed down to future generations so that we can all work together towards a brighter and more sustainable future.



SCHOOL HOLIDAY PROGRAM

As part of our educational outreach with the community and the youth of Naifaru, our marine team created a marine school holiday program for ages 5-12 to learn about marine conservation over their school holiday breaks. A reliable group of approximately 30 children visited the centre up to three times per week.

The main focus of the marine school holiday program is to discourage locals from keeping sea turtles as pets. This is a major issue that exists on Naifaru and we are actively targeting it by challenging the way in which they perceive the environment and the animals that inhabit the ocean.

The sessions are designed to engage the children whilst educating them of the importance of marine species in the Maldives, as well as raise awareness for large marine issues such as plastic pollution. The children were involved in a variety of activities that related to the marine environment. They participated in beach clean ups, which led them to engage in discussions about how although they had littered in the past, they would endeavour not to do it again. They made posters in both Dhivehi and English text encouraging Naifaru locals to 'bring their own shopping bag' instead of using a plastic one, which were handed out to shop owners to display in their store.



Following the 5-week program in July, AMC received 5 green sea turtle hatchlings from local families in Naifaru. 4 had been kept in very poor conditions; small containers in freshwater, and therefore had to undergo saltwater rehabilitation. After the 3-week December program 6 green sea turtle hatchlings were surrendered.

Fortunately, all 11 hatchlings were successfully rehabilitated and were released back into the ocean.



COMMUNITY CLEAN UP



For World Clean Up Day, the whole community of Naifaru joined together to conduct a mass clean up of one coastline of the island. AMC staff, Atoll Volunteers, Naifaru Council, children and community members collected rubbish for 3 hours, resulting in 20 jumbo bags of plastic being intercepted from the coastline and the ocean. The event sent a very strong message to members of the public, some of which paused their beach activities to partake in the clean up. Despite the task seeming daunting with the amount of plastic visible on the beach, the effort shown by members of the community reminded us that there are people who care about the environment and are willing to work towards making a difference.

With the recent partnership with Parley, we have seen an increased effort and willingness from the community to pick up and collect plastic, knowing that they now have a proper waste management strategy in place to remove the pollution from their environment. We hope that with continued community education and increased awareness about Parley, that the whole community can commit to collecting the plastic bottles they use every day so that they can be recycled, therefore reducing the amount of pollution on Naifaru.

with time, we hope to be able to provide more options for the community to avoid using plastic products such as single use bags and water bottles. However, for now we are glad to see there is a solution for some of the waste that is produced on Naifaru.



KAASHIDHOO MALDIVIAN TURTLE RELEASE AND EDUCATION

Over the course of the year, our centre received a total of 10 Maldivian Black Turtles, also known as terrapins, which are taken from the wild and sold into the illegal pet trade.

At the start of November, our staff and interns travelled to Kaashidhoo to release 8 Maldivian Black turtles. Through community education and awareness, 4 of these turtles were surrendered to our centre from local families on Naifaru. The remaining 4 were confiscated by the EPA from homes in Male, which were then sent by ferry to Naifaru.

Whilst in Kaashidhoo, our staff team and founder of AMC met with members of the council to discuss installing more intense fencing and increasing awareness about the threatened species. Staff also discussed improvements to legislation and regulation measures to deter locals from poaching.



Our team held an awareness session for Grade 5's from Kaafu Atoll School to educate them about the ways in which humans are endangering the lives of both the Maldivian Black Turtle and sea turtle species. The children learnt what a protected area and protected species is, threats that turtles face as a result of human interaction and what the legal consequences are for harming or possessing a wild animal as a pet.

Children were asked scenarios about how they would react if they encountered friends or family partaking in illegal activities such as consumption of turtle meat or poaching turtles from the wild. By the end of our session, the children were all extremely engaged and pledged to not consume turtle meat or keep turtles as pets. We hope that by increasing community awareness about the legalities surrounding poaching, and strengthening legislation and laws around this issue, that locals are less inclined to poach and keep turtles as pets, and we can begin to increase their population numbers.

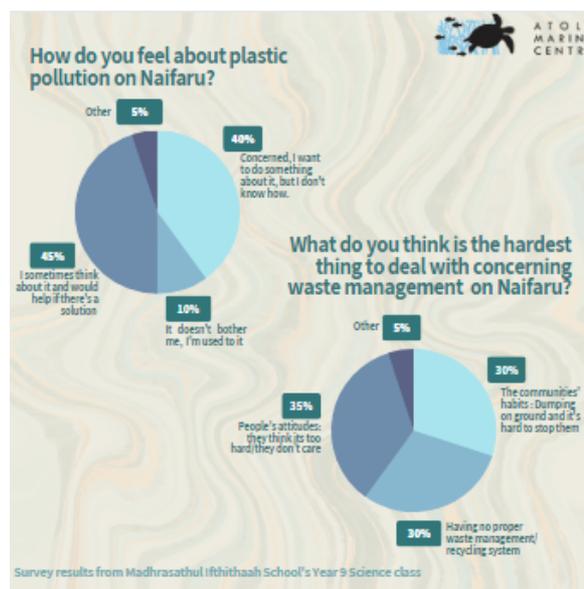
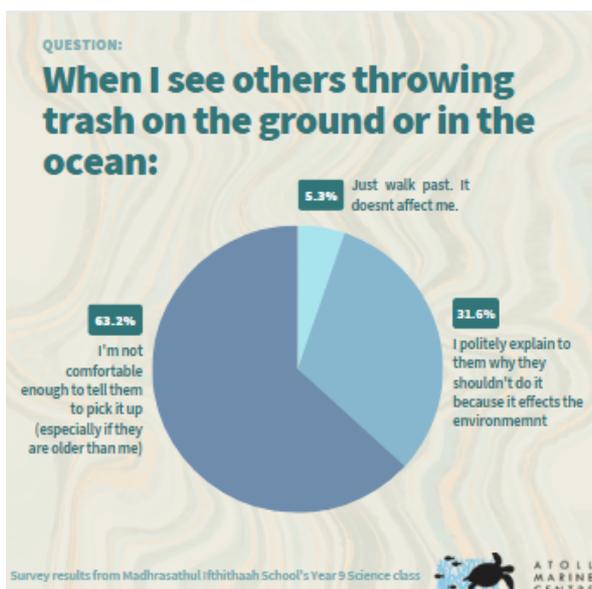
MADHRASATHUL IFTHITHAAH

In October, our marine biology staff began teaching marine science students in Grade 9 at Madharasthul Ifthithaah, Lh. Naifaru. The marine syllabus ran for a duration of 6 weeks, focusing on the types of fauna that inhabit the ocean, threats they face, impacts of climate change, fish and coral identification, waste management and career prospects within the marine science field.

In order to get an understanding of people’s perspective on pollution in Naifaru, 20 students were asked to fill out a survey regarding plastic waste and waste management.

- 80% of students expressed that they felt concerned about the amount of pollution on Naifaru and would be willing to help reduce the amount of waste found on the island if there was a proper waste management solution.
- 63% said that they did not feel comfortable addressing a community member to pick up their rubbish after witnessing them litter

The students outlined that there are many factors that come into play when dealing with the amount of waste on Naifaru. They believe that there are three main reasons that have accelerated the amount of pollution; people’s attitudes, the community's habits, and not having proper waste management facilities in place to recycle the plastics that are used.



MADHRASATHUL IFTHITHAAH

At AMC, one of our primary goals is raising awareness and educating the community about marine conservation and how they as an individual can lessen their impact on the environment. In order to really have an impact on outdated cultural practices such as killing a sea turtle for the consumption of its meat, or selling sea turtle hatchlings as pets, it is vital that we are educating the younger generation so that these practices do not continue for future generations. We hope that by actively involving the youth in marine conservation practices, they can spread their passion and love for the environment to their families and friends, so that we can work together as a community to enhance conservation efforts here on Naifaru.

SYLLABUS

- Introduction to the Marine Environment of the Maldives
- Marine Megafauna
- Coral reefs
- Fish-ID
- Climate change
- Waste management



RESORTS

OUR PARTNERSHIP WITH THE RESORTS ALLOW GUESTS AND RESORT STAFF TO TAKE PART IN TRAINING AND AWARENESS PRESENTATIONS



RESORT GUESTS

Resorts such as Atmosphere Kanifushi Maldives, Kuredu Island Resort and Spa and Komandoo Maldives, regularly bring their guests to the marine centre. Throughout their visit, our marine biology team conduct a presentation detailing the threats that sea turtles face, the importance of sea turtles to the marine environment, how people can reduce their environmental footprint and sea turtle rehabilitation efforts in the Maldives. The presentation is followed by a tour of the centre, to meet our turtle patients where guests get the chance to see first hand how humans are impacting the lives of sea turtles in the Maldives. This awareness broadcasts marine biodiversity and protected species awareness to a global audience as resort guests visit from countries all over the world.



SEA TURTLE RESPONSE TRAINING



Throughout the year, our marine biology team trained the staff and water sports employees from Cora Cora Maldives in July and Innahura Maldives Resort in November, on how to respond if they encounter a sea turtle entangled in a ghost net. Using the codes of conduct established by the "Maldives Whaleshark Program", "Manta Trust", and AMC, staff members were also trained in what information to provide for snorkel trip briefings while encountering marine megafauna, such as sea turtles, mantas and dolphins.



The training proved to be very beneficial as demonstrated by Cora Cora's water sports team, who successfully rescued a male Olive Ridley sea turtle using the information provided by our team. Unfortunately, Cora suffered two amputations to his front two flippers and suffers from buoyancy syndrome, however our team is working very hard with Cora in his rehabilitation process, regularly taking him for ocean rehabilitation swims, using enrichment feeding to encourage him to dive in the hopes to alleviate the severity of his buoyancy.



ADOPTIONS



As Atoll Marine Centre is a locally run NGO, we require funding from outside sources, one of our primary sources of income comes from adoption packages of the turtles in our care. Currently, five of our turtle patients are currently up for adoption. For a yearly adoption package, it costs \$65 and the adoptive parent receives monthly updates, photos and videos of the turtle they adopt as well as our monthly newsletter. This year we received a total of 71 adoptions, raising \$4,615 for our centre that will go towards acquiring veterinary equipment. Most of our turtle adoptions come from resort guests that visit the centre, which just goes to show how important these visits are for the maintenance and support of our centre.



AND JUST LIKE THAT 2022 IS OVER...

We are so proud of the efforts of our team, our volunteers, our partners and mostly our community. Without the collaboration, connection and passion from each and every person we would not have made it to where we are now.

Our release statistics have provided hope for turtle populations surrounding Naifaru and we hope that one day these efforts will be undeniably seen far and wide. As we are a small NGO we continue to develop and strive to improve everyday; it is with this passion for turtles, the marine environment and the community which we power on through adversity and discover innovative solutions.

In the new year our goals are ambitious but achievable; we are excited to install the Maldives' first floating marine centre, we hope to develop our turtle enrichment techniques, stretch our education to other atolls and to continue to empower the Naifaru community to be the change.

Our connections now flow deep and wide throughout the globe to a diverse range of people and we hope that this new year can harness those connections and inspire people to play their part in saving our planet as a whole.