Oceanswell
Oceans for all, forever

OCEANSWELL

ANNUAL REPORT

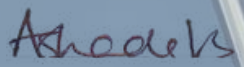
2022

REPORT CONTENTS

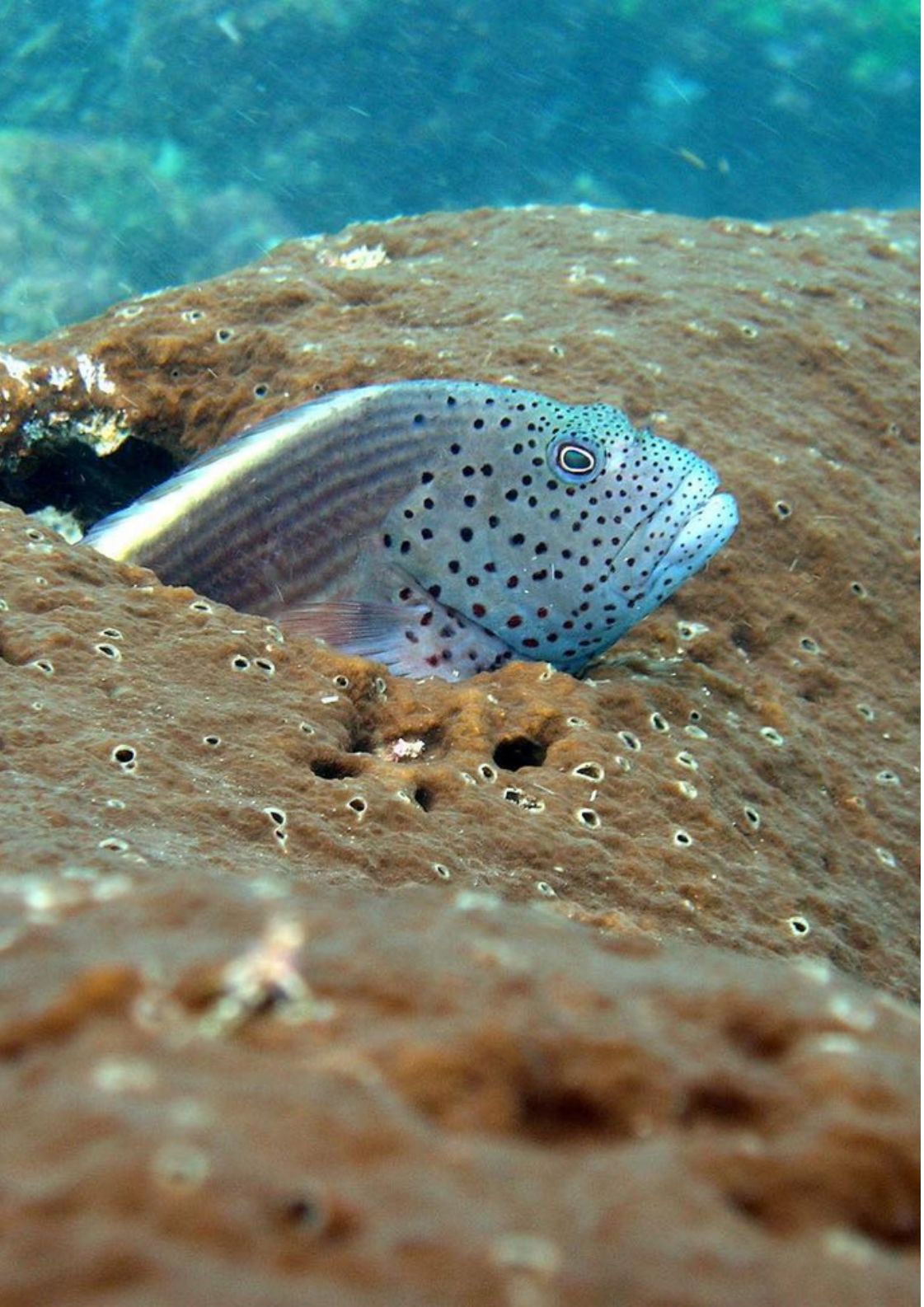
MESSAGE FROM OUR FOUNDER

2022 was a year like no other! After a slow but positive start that saw us heading back in to the field, Sri Lanka plunged into an economic crisis that limited movement and so much more. But that did not stop us! Our team at Oceanswell continued to do what we do best - adapt and pivot. The work continued and we turned the year into a good one. Through our Bertarelli Foundation funded projects we fully-funded a PhD and MPhil student at Ocean University Sri Lanka to conduct research in cetacean bioacoustics and to continue our work on illegal shark fisheries. The students each have a world-class supervisorial team and opportunities to travel and network which is incredibly important. Two former team members got grants from the Marine Conservation Action Fund Early Career Ocean Professionals programme to kickstart projects on the role of women in fisheries in Sri Lanka and understanding the biodiversity of the MV Sierra. We even conducted the first ever deep sea research in Sri Lanka and documented species that we have never seen in the waters around our island before (stay tuned for the results!)! Our Schmidt Foundation funded research on the MV Xpress Pearl continues as we work with our collaborators in the US to analyse the toxicity of the nurdles that will remain around our island in the long-term and our Australia-India Indo-Pacific Oceans Initiative Partnership (AIIPOIP) research continues to track the movement of the nurdles around Sri Lanka and the Indian Ocean region to understand how plastics move through our oceans in general. We were also thrilled to learn that the Mediterranean Shipping Company (MSC) has voluntarily requested its fleet to shift 15 nm further south off Sri Lanka and reduce speeds to avoid collisions with blue whales! Given that I have been working on this issue for over a decade, it feels good to have a win! Still more to go though.

This year we also built a support system for our students and team members by hiring an academic English trainer. Our trainer helps our team structure and think through their writing which helps boost their confidence and desire to write! Given that writing is a central part of the work we do, this initiative has been a key investment in 2022. This is just a taste of some of the big milestones of our 2022, please keep reading through our annual report to learn what else we have been up to!



Asha de Vos
Founder/Executive Director



ABOUT US

Oceanswell, established in 2017, is Sri Lanka's first marine conservation research and education organisation. Our work spans from conducting research that can better protect megafauna such as blue whales and sperm whales to ensuring that we safeguard those whose lives depend on the oceans while also increasing awareness and creating opportunities, both educational and otherwise, for the next generation of ocean heroes. Oceanswell was established through a Pew Fellowship in Marine Conservation awarded to Dr. Asha de Vos.

VISION

Oceanswell envisions a world where everyone recognises the integral role that the ocean plays on our planet and are equipped to work towards its preservation.

MISSION

Oceanswell works to change the trajectory for the world's oceans by educating the next generation of diverse ocean heroes, equipping students from underrepresented nations to conduct marine conservation research, and engaging everybody in conversations about the magic of our world's oceans.

OUR TEAM

CURRENT TEAM

Asha de Vos
Naduni Mallika Arachchi
Shanjeevan Amalanathan
Lasuni Gule Godage
Udayanga Sampath
Sayuri Peiris
Arpana Giritharan

FORMER TEAM MEMBERS (2022)

Hafsa Jamel
Chiran Weerarathne
Ayani Nagahawatte

INVITED PARTICIPANTS FOR FIELD SEASON 9

Firi Rahman - Artist
Rajitha Yasaratne - Animal welfare advocate
Shilpa Samaratunga - Animal welfare advocate
Hirusha Algewatta - Pangolin researcher

PROJECT-SPECIFIC RESEARCH ASSISTANTS

Lenin de Silva
Shalanka Ranjula
Oshadi Dissanayake
Devindi Budhawaththa
Meera Mohideen Faizar
Puwaneswaran Kavippriyan
Aboobucker Mohamed Jahan
Mohamed Ameer Mohamed Aakib
Azees Rizwan
Mohamed Aliyar Mohamed Faalil
A.Suthanthan
Siththiravel Thuvarakan
Kalaippiriya Kantharupan
Kumanan Hayaniha
Kirushnakopal Kanaichelvan
Kalaichchelvan Sayanthan
R.Kethuya
Marcus Divaincy Fernando
Arumugam Rajiyanthini
Irasa Jekatheesan
A.Thiyoginas Revel
Arulpragash Shobesh
Aumharyselvaprakasanayagam Nithushaan
Alfred Jerushan Dalima

INTO THE FIELD

Fieldwork is an important part of many of our projects. While the COVID-19 pandemic limited our field work in 2020 and 2021, this year we returned (before the economic crisis hit) to do what we love. Unfortunately, the challenges continue, from reduced access to fuel requiring us to rethink some of our ongoing work to battling with rising costs. Nothing can stop us though - so we have much to report!

SRI LANKAN BLUE WHALE PROJECT: FIELD SEASON 9

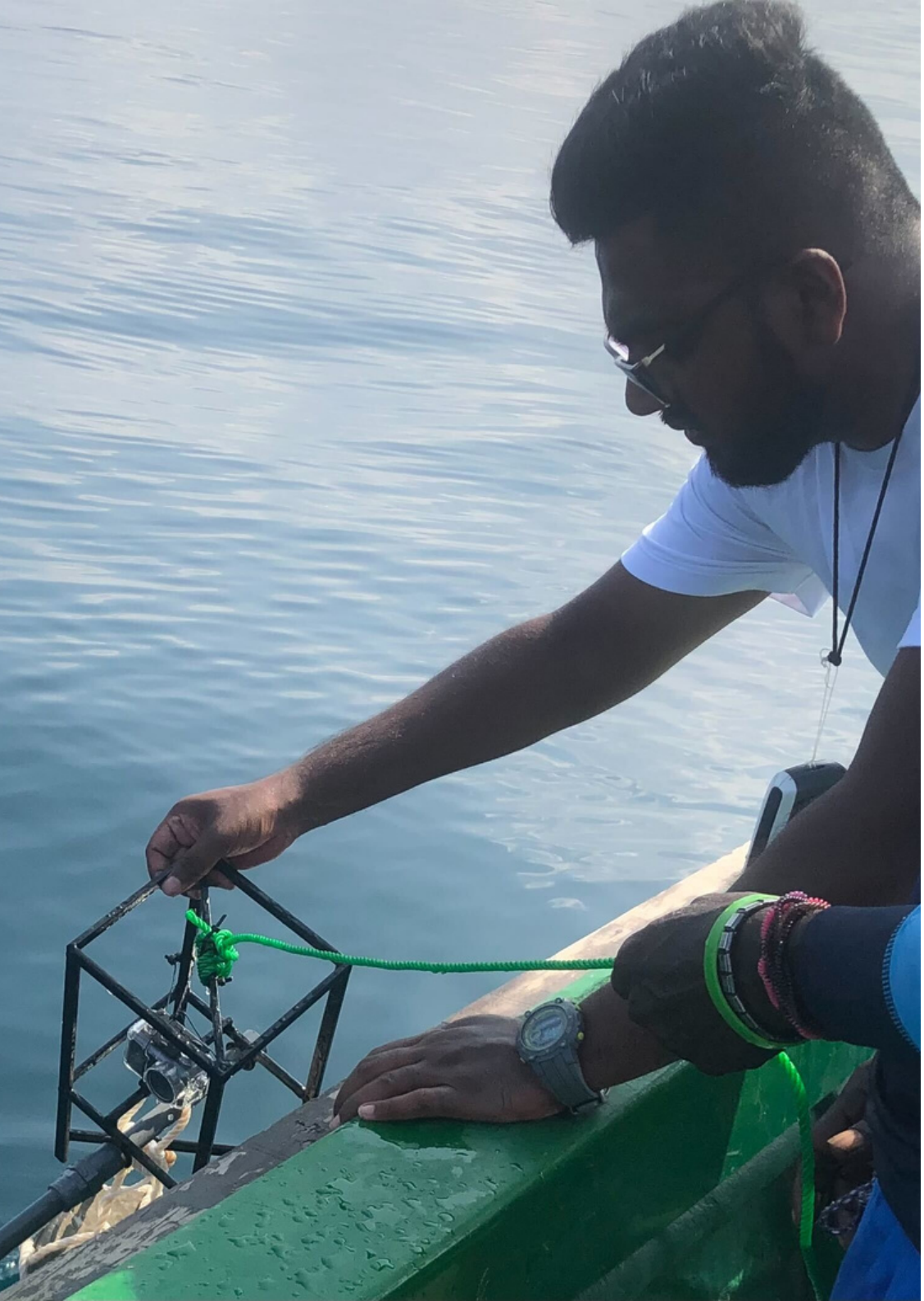
After a hiatus due to the COVID-19 pandemic and resulting lockdowns, we returned to the field in February to continue collecting data for our flagship Sri Lankan Blue Whale project. Our team, comprising our founder, two research assistants and an intern, headed to Mirissa eagerly.

We collected data on many species of large whales, dolphins and turtles and were lucky enough to come across a rare gem of a species (all will be revealed soon!). Once back from the field, we settled in to add and identify each whale and dolphin we saw into our marine mammal photo ID catalog.

While out on the water, we continued to provide opportunities for the public to engage in our work through our daily Instagram live sessions and constant social media updates. Our field intern, Ayani, wrote a blog about her experience working with us in the field and described what we saw. Check it out on our website!

This fieldwork was made possible by the proceeds from our dolphin pendant supported by our partners, Colombo Jewellery Stores.

A FAMILIAR BLUE WHALE CRUISES PAST



BIODIVERSITY ASSESSMENT OF THE SHIPWRECK THERMOPYLAE SIERRA

We used Baited Remote Underwater Videos (BRUVs) to conduct a biodiversity assessment of the shipwreck Thermopylae Sierra, a popular scuba-diving and freediving site close to Colombo. This ship is currently under consideration to be salvaged but plays an important part in drawing dive tourism.

Fieldwork for the project was conducted from January to March this year and was led by our former research assistant, Chiran Weerarathne. The footage was analysed by two interns and we almost have a complete list of every species they spotted - so stay tuned for our publication!

This work was made possible by a grant from the Early Career Ocean Professionals (ECOP) program of the New England Aquarium Marine Conservation Action Fund (MCAF) and an equipment grant by Idea Wild. The project is supervised by Dr. Asha de Vos and Dr. Jacquomo Monk (University of Tasmania).

THE BRUV SETUP IN ACTION

DEEP SEA RESEARCH

In March, we headed to Kalpitiya on the northwest coast to explore the deep sea. As this was the **first-ever dedicated deep sea research project** in Sri Lanka, we were excited to start!

We deployed a low-cost Deep Sea Camera, aka Dropcam, developed by National Geographic at a range of predetermined depths along a transect. Unfortunately, we lost a whole day of fieldwork as the government declared an islandwide curfew. Regardless, we still have many exciting species on our footage that we are verifying as you read - and we cannot wait to share our findings with all of you!

This work was supported by a grant from the National Geographic Society and research permission from the Ministry of Fisheries. We were joined in the field by Dr. Jonatha Giddens, the National Geographic project lead who provided training and technical support throughout the field work.

AUSTRALIA-INDIA INDO-PACIFIC OCEANS INITIATIVE PARTNERSHIP (AIIPOIP) PROJECT

Since the MV Xpress Pearl ship disaster in May 2021, we have been tracking the movement of the spilled nurdles using the Oceanswell nurdle tracker. Through this project, a collaboration between the University of Western Australia, the Indian National Centre for Ocean Information Services (INCOIS), the National Aquatic Resources Research and Development Agency in Sri Lanka (NARA) and Oceanswell, we are tracking the movement of the nurdles to understand how plastic debris moves throughout the Indian Ocean.

The team at the University of Western Australia has built computer models to predict how nurdles will move through the region (based on currents, circulation, wind etc), and our team, along with the team from NARA will survey 28 beaches across the island to verify if the model predictions are accurate or not. Using this data we can fine-tune the model, which will then be used to predict hotspots of plastics and more efficiently focus clean-up efforts in the future. The fieldwork component is integral to accurately predicting plastic movement through our ocean basin. Oceanswell's team of 26 will survey the north, northwest and east coasts.

The project team includes Prof. Charitha Pattiaratchi (University of Western Australia), Dr. Asha de Vos, Ruchira Jayathilaka (NARA), Ashoke Weerakoon (NARA) and Shanjeevan Amalanathan and is supported by an AIIPOIP grant.

LEARNING FROM OUR FISHER COMMUNITIES

If we are to protect and care for our oceans, we need to get everyone involved. Over the years, our work with fisher communities has taught us so much. Our relationships with these communities have helped us better understand the various socioeconomic challenges and environmental factors influencing wildlife loss.

WOMEN IN FISHERIES

Women in small-scale fisheries in Sri Lanka play varying roles ranging from fishers, post-harvest workers and sellers. These roles may also extend to book-keeping, investing in assets and the household, and administrative roles in fisheries societies. However, their participation in fisheries often goes unrecognised.

Through this project, our goal was to collate the existing data on women's roles in small-scale fisheries across Sri Lanka and put it onto a single, easily accessible platform. Why? Because gender-specific data on how fishers interact with the ocean is sparse and widely spread making it difficult to truly understand the length and breadth of the contribution of women in this industry. We are currently building an ArcGIS Storymap that highlights the different narratives based on existing research. Stay tuned for more!

This work was made possible by a grant from the Early Career Ocean Professionals (ECOP) program of the New England Aquarium Marine Conservation Action Fund (MCAF).

SCIENCE TO NAVIGATE CRISES

Over the last few years, Sri Lanka has faced many disasters in the marine environment, from the M/V Xpress Pearl nurdle spill to a failed beach nourishment project. Scientific investigation to understand the impacts of these incidents is essential and helps us to respond better to similar incidents in the future.

BEACH VARIABILITY PROJECT

We completed our fieldwork on the beach variability project in 2021, which involved fortnightly measurements of the beach width at 14 points along a 5km beach stretch from Mount Lavinia to Wellawatte. This project was started in response to the failed beach nourishment project conducted in April 2020 by the Coastal Conservation Department (CCD) of Sri Lanka.

Each survey provided opportunities for ocean enthusiasts to volunteer and was a great way to involve the general public, and also educate the public about bycatch from fisheries through our side project.

In 2022, we collated and analysed all the data collected to determine how the beach width varied throughout our survey period. This is another publication in the works so keep your eyes peeled!

We extend our thanks to the 32 volunteers who joined us for these surveys from June to December 2021. This work was made possible by a grant from the Bezos Foundation and is supervised by Dr. Asha de Vos and Prof Charitha Pattiarachchi from The University of Western Australia.

RESEARCH ON THE MV XPRESS PEARL AND RESULTING ENVIRONMENTAL IMPACTS

The MV Xpress Pearl was a container ship that caught fire on the 21st of May, 10 km off the west coast of Sri Lanka. The container ship carried around 78 metric tons (170,000 pounds) of plastic nurdles, much of which was burned or spilled into the ocean.

We tracked the movement of nurdles across the coastline by developing a nurdle tracker and shared scientifically robust information with the general public. In 2022, we released our third publication from this project titled 'Divergent Forms of Pyroplastic: Lessons Learned from the M/V X-Press Pearl Ship Fire' where we describe what the different colours of the nurdles from the MV Xpress Pearl indicate, which helped us understand that they were different types of pyroplastic and were not nurdles in different stages of degradation. The first two publications can be found here.

The team is comprises Dr. Christopher Reddy and Dr. Bryan James (WHOI), Dr. Lihini Aluwihare (Scripps Oceanographic Institution) and Dr. Asha de Vos, and is funded by the Schmidt Foundation.

CITIZEN SCIENCE

Knowledge exchange is an important part of achieving conservation goals and is very much at the core of what we do. Our volunteer citizen scientists learn about the marine environment and how we conduct scientific research while contributing to our data collection processes.

STRANDINGS DATABASE

The strandings database was created to collate strandings reported by the general public and includes data on species, cause of death, and date and location of stranding. This database also helps us understand the distribution patterns over the year and, in the long term, over many years. To upload any strandings, you see, click here! So far, we have recorded over 60 strandings, with many more historical strandings waiting to be uploaded!

SRI LANKAN MARINE MAMMAL PHOTO ID CATALOG

Photo identification is a simple but powerful tool used to assess population size, and understand population demographics. We have maintained a photo-identification database on key species of marine mammals, dating back to 2008. Through this, we even identified the oldest known blue whale in the Northern Indian ocean - Whalentine!

All of the sightings recorded during our field season and information sent to us by citizen scientists from across the world are captured in this database.

OCEANSWELL NURDLE TRACKER

To track nurdles from the MV Xpress Pearl disaster, we developed an online database that allows citizen scientists to contribute nurdle sightings across our coastlines. As soon as the contributer clicks 'upload' they are able to see their contribution to our database. This citizen science endeavour helped us understand the distribution of burnt nurdles over the entire Sri Lankan coastline and therefore contributed directly to our science! In order to make the database more accessible, we also translated it into the two local languages, Sinhala and Tamil.

As of now, around 100 nurdle sightings have been recorded in our nurdle tracker.

GETTING OUR OCEAN HEROES INVOLVED

Our young ocean heroes are our planet's present and future. Inspiring and educating them is vital to ensure that our oceans are safeguarded in the long-term.

OCEAN HERO HUDDLE

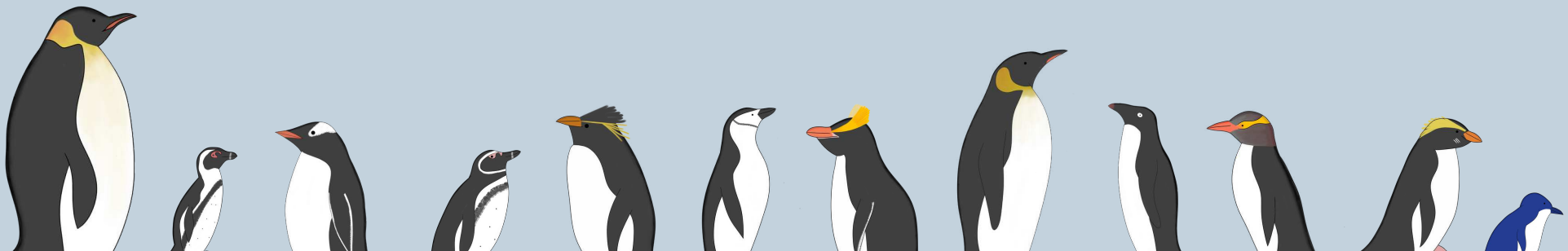
Ocean Hero Huddle is a virtual, monthly initiative tailored for our younger audience (ages 15 and below)! We hosted our very first Ocean Hero Huddle on World Oceans' Day in 2020 and have since completed 21 sessions through which we have engaged over 250 participants!

Prior to the session, the kids watch a short video and during each session, they are free to delve deeper, learn more and share fun facts amongst their peers. After the conclusion of each session, a summary is posted across our social media channels allowing everyone to partake in the learning experience.

In 2022, we were only able to host 2 Ocean Hero Huddles and have since had to press pause given the constant and often unpredictable power cuts in Sri Lanka. For World Oceans Day in 2022, while we are unable to have our regular Zoom sessions, we still wanted to engage and interact with all of our ocean heroes, so we created a summary of a video, like we typically do, and posted it on our social media. We hope that in 2023, we are able to bring these sessions back and engage with a bigger group of ocean enthusiasts.

OCEAN HERO REELS

We believe in the power of the younger generation to drive change and we wanted to create an opportunity for them to express themselves and their passion for our oceans. As such, we launched Ocean Hero Reels (OHR), a programme for under 15s to create their own video, on an ocean-related subject that they are passionate about. They were encouraged to express themselves any way they felt fit and were guided to build a story that they can be proud of. These videos were shared across our social media as well as on our website.

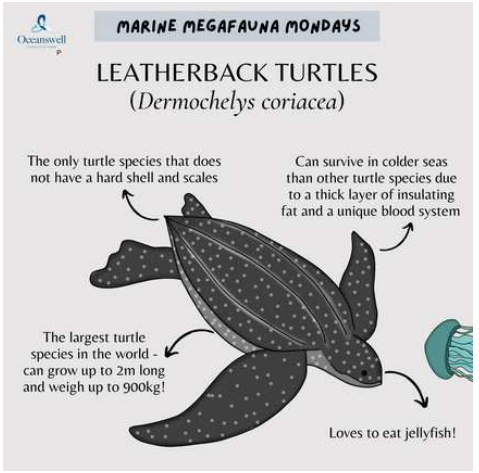


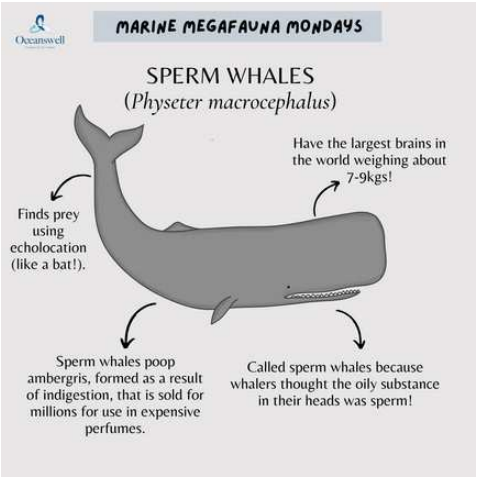
SOCIAL MEDIA FOR EDUCATION

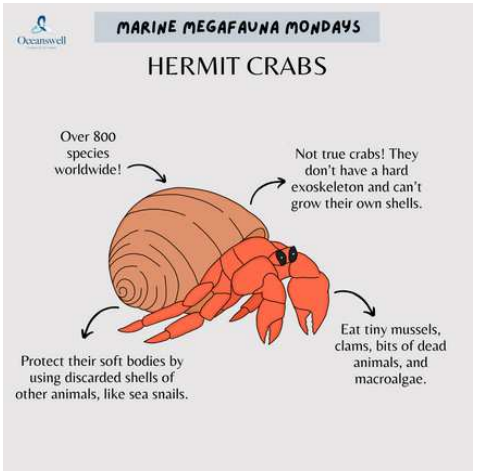
We like sharing knowledge and what better way to share it than through social media! It has given us a platform to reach a diverse group of people and we try our best to come up with fresh ways of engaging everyone!

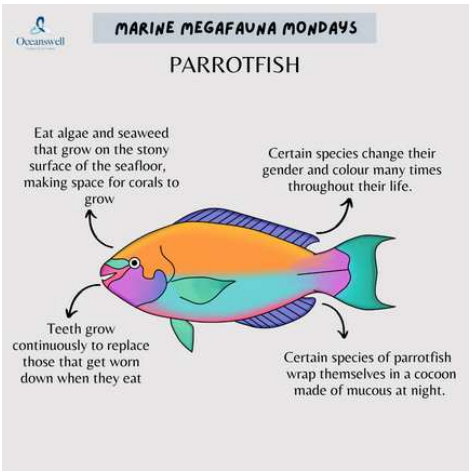
MARINE MEGAFAUNA MONDAYS

We think everyone should know more about the species we share the planet with. With this in mind, we created Marine Megafauna Mondays - a series of posts that we release weekly filled with four fun facts about a marine animal. From majestic humpback whales to leatherback turtles to green moray eels, we have so far shared 30 Marine Megafauna Mondays, and already have plans for a new, improved version in 2023! The response to this series has been very positive and encouraging, and we are glad we could share a little bit of the magic of our oceans with everyone. In 2023, we intend to translate our posts into the local languages, to ensure that every Sri Lankan has the opportunity to learn about our oceans!



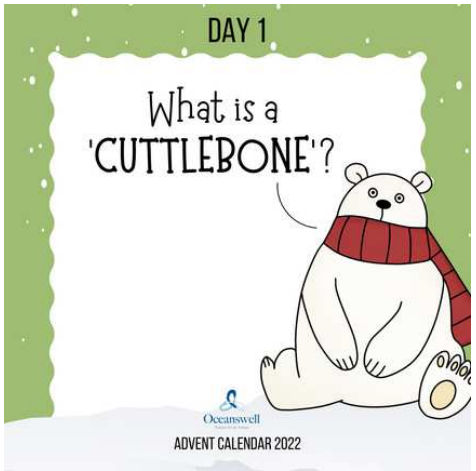






ADVENT CALENDAR

We created an advent calendar for the third year in a row featuring some fun facts from our work this year. It is a great way to showcase all the important science and conservation work we do at Oceanswell while simultaneously taking a trip down memory lane. The full advent calendar can be found as a guide on our Instagram page and as individual posts on our Facebook, LinkedIn, and Twitter.



EDUCATIONAL OUTREACH

Educational outreach is a big part of our work at Oceanswell. We love communicating science to everyone through a range of mediums, including blogs, talks and even by creating our own graphic magazines!

OUTREACH BY ASHA DE VOS

TALKS

- 3 February 2022 - 'Meet us in the Futures' for the Smithsonian Arts + Industries
- 9 June 2022 - National Geographic Explorer Spotlight Asia, Jeju Island, South Korea
- 27 June - 1 July - UN Oceans Conference, Lisbon
  - Our Ocean Future: Empowering the next generation of Ocean Leaders - organised by the Bertarelli Foundation
  - I's on the Ocean: Integration, Implementation, Impact - organised by WWF
- 11 August - 'The Giants off Sri Lanka' for The Explorers Club's Global Exploration Summit (GLEX), Azores
- 27 November 2022 - 'Protecting the ocean giants of Sri Lanka' for the Colombo Club
- 30 November 2022 - 'Decolonising higher education' for the British Council Going Global conference, Singapore

PODCASTS

- 2 December 2022 - NPR TED Radio Hour : Our oceans are in danger...but it's not too late

OUTREACH BY ASHA DE VOS

ARTICLES

- 26 June 2022 - Equity in Marine Conservation: How Local Efforts and Global Partnerships Together Can #SaveOurOcean for the *United Nations Chronicle*

IN THE PRESS

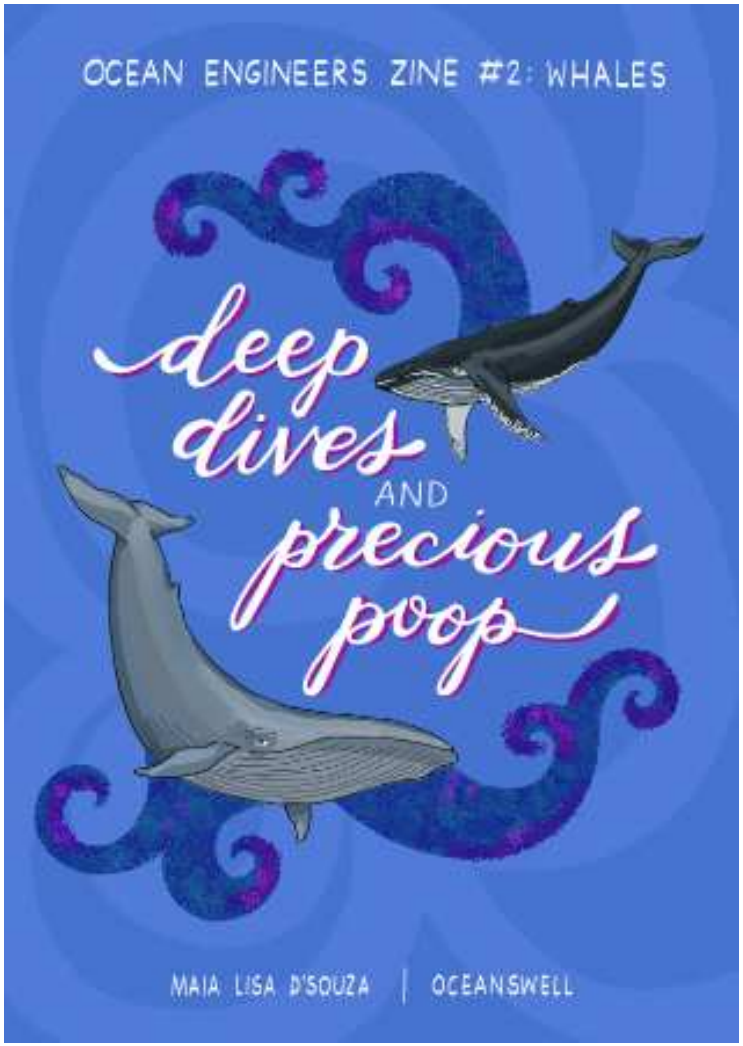
- 7 February 2022 - '‘Giant obstacle course’: call to reroute major shipping lanes to protect blue whales', The Guardian
- 8 June 2022 - '4 Female Marine Biologists On Their Hopes For World Oceans Day', British Vogue
- 16 August 2022 - 'Marine biologist Asha de Vos says kids can help save the ocean now', The Washington Post
- 15 December 2022 - 'Whales can have an important but overlooked role in tackling the climate crisis, researchers say', CNN

DOCUMENTARIES

- 9 February 2022 - NOVA: Secrets in the Scat, PBS

OCEAN ZINES

Our ocean zines titled 'Gardeners of the Coral Reef' and 'Precious Dives and Whale Poop' was launched in December of 2022! These fun, educational zines were illustrated by our former intern Maia D'Souza and are suitable for people of all ages. Hundred percent of proceeds from the sale of these zines support our research and education work. To order a copy, click here.



BLOG POSTS IN 2022

Ocean Chronicles features articles on marine conservation topics written by our Oceanswell team members and guest contributors.

- Field diaries: My volunteer intern experience with Oceanswell by Ayani Nagahawatte
- Field diaries: A peek into the marine life by Ayani Nagahawatte

CREATING OPPORTUNITIES

Offering exciting new opportunities is important to achieve our goal of nurturing the next generation of ocean heroes and equipping students from underrepresented nations to conduct marine conservation research.

MPHIL IN FISHERIES AND PHD IN CETACEAN ACOUSTICS

We established the first graduate degree programmes at Ocean University in Sri Lanka by welcoming the first MPhil and PhD students who are both fully funded through grants from the Bertarelli Foundation.

Lasuni Gule Godage was selected for the MPhil in Fisheries, and Udayanga Sampath was selected for the PhD in Cetacean Acoustics. Both will be based out of Ocean University in Sri Lanka but are supervised by a world-class team! To kick off his PhD Udayanga had the good fortune to head to the Maldives to get trained on survey techniques under the guidance of Dr. Charles Anderson and his team, and Lasuni headed to the field to conduct a pilot study for her project.

Both Lasuni and Udayanga are supervised by Dr. Asha de Vos and Prof. M.F.M. Fairoz (Ocean University) and have their own co-supervisors to support their journey. Lasuni's team includes Dr. Ana Nuno (NOVA Universidad Lisboa, Portugal), and Dr. Claire Collins (Zoological Society of London and the University of Exeter, UK) and extends our existing work understanding the human dimensions of illegal fishing. Udayanga's team comprises Dr. Danielle Harris (University of St Andrews), Dr. Clare Embling (University of Plymouth) and Dr. Tom Letessier (Zoological Society of London) and will have him eavesdropping on our oceans and their inhabitants.

PUBLICATIONS IN 2022

- Bell, K. L., Chow, J. S., Hope, A., Quinzin, M. C., Cantner, K. A., Amon, D. J., Cramp, J. E., Rotjan, R. D., Kamalu, L., **de Vos, A**., Talma, S., Buglass, S., Wade, V., Filander, Z., Noyes, K., Lynch, M., Knight, A., Lourenço, N., Girguis, P. R., de Sousa, J.B., Blake, C., Kennedy, B.R.C., Noyes, T.J., McClain, C. R. (2022). Low-cost, deep-sea imaging and analysis tools for deep-sea exploration: A collaborative design study. *Frontiers in Marine Science*, 9.

- James, B. D., **de Vos, A**., Aluwihare, L.I., Youngs, S., Ward, C.P., Nelson, R.K., Michel, A.P.M., Hahn, M.E. and Reddy, C.M. (2022). Divergent Forms of Pyroplastic: Lessons Learned from the M/V X-Press Pearl Ship Fire. *ACS Environmental Au*

- Anderson, R.C., Isha, Sutaria, D.N., and **de Vos, A.** (2022) A note on humpback whales (*Megaptera novaeangliae*) in the central Indian Ocean. *Journal of Cetacean Research and Management*, 23: 49-57.

- **de Vos, A**. (2022). Stowing parachutes, strengthening science. Conservation Science and Practice, 4(5).

- **de Vos, A**., & Schwartz, M. W. (2022). Confronting parachute science in conservation. Conservation Science and Practice, 4(5)

Dr. Asha de Vos and Dr. Mark Schwartz (University of California Davis) also curated a special issue on Parachute Science for the journal Conservation Science and Practice.

Oceanswell

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www.oceanswell.org

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