

SAVE OUR SEAS FOUNDATION

ANNUAL REPORT 2023



save our seas
foundation



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**“AS LONG AS THERE ARE
PEOPLE WHO CARE AND TAKE
ACTION, WE CAN AND WILL
MAKE A DIFFERENCE.”**

THE FOUNDER | SAVE OUR SEAS FOUNDATION



The 2023 anniversary year was cause for celebration for the Save Our Seas Foundation, with reflection on challenges, achievements and progress over two decades of shark and ray conservation.

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The CEO introduces his young son to a manta ray in Seychelles in a still captured from the film *Older Than Trees*.

CEO'S FOREWORD

This has been a significant landmark year for the Save Our Seas Foundation – our 20th anniversary, celebrating two decades of facilitating shark and ray conservation efforts at a global scale. Starting from a patrol boat in Cocos Island, we have now funded 482 projects on 258 marine species in 91 different countries around the world, with a record 75 projects this year alone. Our project leaders have made remarkable achievements, discovering new species, educating thousands, creating protected areas and securing restrictions on the global shark trade.

Together they have given us hope for a future for sharks and rays, and in celebration of our anniversary we wanted to share this hope around the world. We hosted open events in South Africa, the USA, Switzerland and Seychelles that brought ocean enthusiasts together to share their passion and stories of love for the ocean and to 'Celebrate Our Seas'. The centrepiece of these events was a new short film about hope for sharks and rays called '*Older Than Trees*' from the Oscar- and BAFTA-winning director Pippa Ehrlich. The film has been incredibly well received, earning nominations and awards at some of the most prestigious natural history film festivals in the industry. We also released the latest issue of the '*Save Our Seas*' magazine, which reflected on 20 years of shark conservation and exploring future prospects in the field.

Something that continues to be at the core of what we do is building capacity in early-career researchers and under-resourced communities. This year we expanded this commitment with the launch of our Conservation



Left: SOSF friends and project leaders gathered to celebrate the Foundation's 20th anniversary at key events hosted in Seychelles, USA, South Africa and Switzerland.



Opposite above: The SOSF's founder, His Excellency Abdulmohsen Abdulmalik Al Sheikh, received a NOGI award for Distinguished Service to honour his contributions to shark and ray conservation.



Above: The progress made by the SOSF and its ongoing vision were the subject of many an introductory talk at the international celebration events throughout 2023.

“I am left full of pride and hope from all the amazing work done by the global marine conservation community.”

Fellowships. These support the livelihoods of conservationists who are creating a real-world difference through their passion and dedication to sharks and rays, yet often lack the resources to sustain themselves. The hope is to build and retain capacity among the brightest individuals and those who need it most.

To cap off such a momentous year for the foundation, we were humbled to have our founder, His Excellency Abdulmohsen Abdulmalik Al Sheikh, honoured with a NOGI award for Distinguished Service, which celebrated his legacy contributing to shark and ray conservation. This award is recognised as one of the most prestigious in the marine community and His Excellency joins previous notable recipients such as Genie Clark, Sylvia Earle and James Cameron.

All told, it has been a tremendous year for the foundation, a fantastic opportunity to reflect and to look forward, and that is before I have even shared any of the amazing updates from our centres, partners and projects (full details are in their respective updates). This continues to be the most inspirational journey and, after such a remarkable year like this, I am filled with pride and hope from all the amazing work accomplished by the global marine conservation community. Together, we are making a difference.

Dr James Lea
Chief Executive Officer





The SOSF collaborated with Oscar-winning director Pippa Ehrlich and Craig Foster from the Sea Change Project to bring *Older Than Trees* to life in the 20th anniversary year.



20TH ANNIVERSARY

Twenty years ago, the Save Our Seas Foundation (SOSF) started a wave of change for sharks. The world then was very different for these misunderstood and maligned animals, and even the few charismatic species that caught our imagination were suffering from poor PR. In 2023, we celebrated what has changed over the course of two decades for shark and ray science, education and conservation.

The SOSF's official birth date was marked on 23 September 2003 and the year was punctuated by various celebrations that gave us the opportunity to review and reflect on successes in different ways. In 20 years the SOSF has grown from funding a single patrol vessel for park rangers desperate to protect a marine reserve around Cocos Island to supporting over 480 projects in more than 90 countries. It is thanks to the passionate people the SOSF has worked with and supported that landmark successes have been achieved. For instance, 90% of the shark fin trade was brought under CITES surveillance in late 2022, and the push continues for 30% of the oceans to be protected by 2030. These milestones – and the people who helped to make them happen – were celebrated when 20th anniversary in-person events were hosted in Cape Town,

Over 20 years, the SOSF has developed a strong storytelling legacy, based on the belief that when the wonder of sharks and the sea are shared, more people can find their place in protecting our ocean home.

South Africa, on 3 May; in Fort Lauderdale, Florida, USA, on 7 September; in Geneva, Switzerland, on 23 September; and in Victoria, Seychelles, on 13 October 2023.

Support for shark conservation in 2003 was not the worldwide priority it has become today. In fact, you would have been hard pressed to find organisations willing to gamble on backing what had become the SOSF's funding priorities by 2023: young researchers, projects in developing nations and research on the full diversity of sharks, rays, skates and chimaeras. In a continuation of its evolution, the SOSF has incentivised young researchers to look with hope to the next 20 years of shark conservation with the launch of the SOSF Conservation Fellowship. This fellowship provides financial support for individuals working on shark and ray projects in resource-limited countries. The year also saw a bumper crop of projects receive funding: 75 were awarded grants that supported work spanning countries from Papua New Guinea to Mexico, with scientists searching for giant guitarfish nurseries, tracking eagle rays by drones and connecting with coastal communities, among many other endeavours.

Over 20 years, the SOSF has developed a strong storytelling legacy, based on the belief that when the wonder of sharks and the sea are shared, more people can find their place in protecting our ocean home. A special anniversary edition of the *Save Our Sea* magazine featured a story by National Geographic writer and BBC broadcaster Dr Helen Scales about the groundbreaking DNA research being conducted by the SOSF Shark Research Center (SOSF-SRC), as

Below: Dr Holly Lynn Baumgarter, Dean and Professor at the Halmos College of Arts and Sciences and the Guy Harvey Oceanographic Research Center, welcomes guests and introduces the evening at the 20th Anniversary event in Fort Lauderdale, Florida, USA.



Bottom: Comedian Nic Rabinowitz had the South African audience in stitches as he wove together an evening of talks by ocean-lovers in Cape Town.



well as a photographic portfolio by fellow National Geographic Explorer and photographer Tom Peschak. The SeaWalls Project made a splash in Cape Town, South Africa, as the SOSF supported artists who were sharing life below the shoreline in public spaces across the ocean-side city. The Quai du Mont-Blanc – a popular lakeside walkway that traverses one of the busiest stretches of Geneva – became an open-air ocean-side gallery for Tom Peschak's *Wild Seas* photographic exhibition. And an exciting collaboration with the Sea Change Project and Oscar-winning director Pippa Ehrlich (*My Octopus Teacher*) culminated in the global premiere of *Older Than Trees*. This film about hope for sharks and rays not only charted the personal journey and research of shark scientist and SOSF CEO Dr James Lea, but also transported viewers through the 20 years of science that the SOSF has funded to protect sharks.



Above left: An especially important celebratory stopover was Seychelles, where more than a decade of work by the D'Arros Research Centre (SOSF-DRC) has contributed to the conservation landscape of this island nation.

Above right: The *Wild Seas* exhibition by National Geographic explorer and photographer Tom Peschak delighted Geneva's lakeside strollers as they discovered the extraordinary, the ethereal and the unusual inhabitants of our oceans.

Right: Artists splashed colourful messages of ocean love, conservation and hope on statement public walls in Cape Town, South Africa, in the Sea Walls Project.



SAVE OUR SEAS FOUNDATION CELEBRATES 20 YEARS OF CONSERVATION, RESEARCH, EDUCATION

482 projects funded in 91 countries



5 long-term partners

- Bimini Biological Field Station Foundation Bahamas
- The Manta Trust UK
- Shark Spotters South Africa
- North Coast Cetacean Society Canada
- The Acoustic Tracking Array Platform South Africa



- 14** species discovered
- 31** conferences sponsored
- 52** sponsorships
- 135** travel grants
- 620** papers published

258 species researched through our funding

220 sharks & rays

12 marine mammals

4 chimaeras

8 turtles

4 marine birds

7 bony fish

1 crustacean

2 molluscs



3 centres founded



>50,000 learners reached through our centres



D'Arros Research Centre
D'Arros Island, Seychelles



Shark Research Center
Dania Beach, USA



Shark Education Centre
Cape Town, South Africa

OUR CENTRES

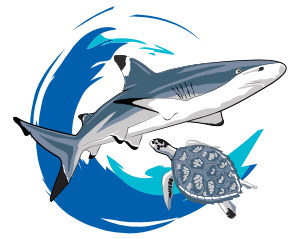
REPORTS FROM THE SAVE OUR SEAS
FOUNDATION CENTRES AROUND THE WORLD

- 1 SOSF D'ARROS RESEARCH CENTRE | SEYCHELLES
- 2 SOSF SHARK EDUCATION CENTRE | SOUTH AFRICA
- 3 SOSF SHARK RESEARCH CENTER | USA





Some of our planet's most ancient inhabitants call D'Arros Island home, whether the wizened giant Aldabra tortoises like Petit fours, or the green and hawksbill turtles that nest on its beaches.



save our seas d'arros research centre



ROBERT BULLOCK



HENRIETTE GRIMMEL

SOSF D'ARROS RESEARCH CENTRE

DR ROBERT BULLOCK AND HENRIETTE GRIMMEL

In 2023, the SOSF-DRC saw a record-breaking number of scientists, students, scientific projects and educational programmes. To accommodate this schedule, two temporary staff joined the team for the busiest periods of the year, through its first Research Internship programme.

The long-term monitoring programmes continued to collect data on turtles, mantas, sharks, rays, fish, corals, birds and tortoises. Six camera traps were introduced at St Joseph Atoll to monitor hawksbill turtle emergences and to study track longevity. The annual coral monitoring survey tested some new technology and techniques (stereo video and photogrammetry) to upgrade data collection. Vegetation quality, invertebrate and bird surveys were introduced to our forest rehabilitation programme. Drones were used to survey and monitor the distribution and abundance of juvenile rays and turtles at St Joseph.

The centre welcomed Seychellois student Alessia Lavigne, a PhD candidate studying reproductive failures in turtles and tortoises; Dr Jeremy Kiszka conducting cetacean surveys; PhD candidate Nico Fassbender investigating the relationship between habitat complexity and space use in different reef shark species; and Rachel Newsome, a PhD candidate studying the fine-scale activity and behaviour regimes of reef manta rays.

The SOSF-DRC also supported Victor Gautier, who explored the use of structure-from-motion photogrammetric techniques for assessing reef health

at D'Arros and St Joseph Atoll; Daisy Fermor, who used drones to assess the population abundance and habitat use of juvenile turtles in St Joseph Atoll; and research officer Dillys Pouponeau, who is pursuing a degree part time while working at the research centre and focusing on the feeding ecology of manta rays and prey density patterns around D'Arros Island.

The SOSF-DRC represented Seychelles at a workshop developing Important Shark and Ray Areas (ISRAs) for the Western Indian Ocean region. D'Arros and St Joseph were designated as an ISRA, alongside other important areas in the country.

The SOSF-DRC had another successful D'Arros Experience with 16 new Seychellois students. To ensure the sustainability of this programme, the SOSF has created a permanent position of an education coordinator, which will allow for similar programmes to be run on Mahé, Praslin and La Digue with schoolchildren and potentially other age groups.

The centre further demonstrated its commitment to education and capacity building by expanding its collaboration with the University of Seychelles. First-year students will now be able to come to D'Arros for a six-day field course as part of the research methods and skills module of the Environmental Science course.

The team produced a weekly social media mini-series of reels called 'This is D'Arros' alongside regular posts to provide insight into the different research programmes and the life of research scientists living on a remote island. The centre also hosted the national media house, Telesesel, for the television programme 'Paradi Terestre', hosted by Seychelles' very own SOSF ambassador Terence Vel. The programme focuses on the ecology of the islands and will air in 2024.

The Seychelles Marine Spatial Plan (SMSP) continued with stakeholder meetings and the SOSF-DRC was represented by its programme director, Henriette Grimmel, in meetings and workshops. The first draft of the Marine Protected Areas management plan for the D'Arros and St Joseph conservation area was completed by November and is currently under review by the SOSF team.

The highlight of the year was the celebration in Seychelles of the Save Our Seas Foundation's 20th anniversary. The event highlighted the foundation's work in the region through an evening of films and presentations by project leaders and ambassadors.



Opposite above: D'Arros and its neighbour St Joseph Atoll were designated Important Shark and Ray Areas (ISRAs) for the Western Indian Ocean in 2023.

Opposite below: The D'Arros Experience brings eager Seychellois learners to immerse themselves in wildest nature for a week, participating in the scientific and natural history elements of the SOSF-DRC's work.

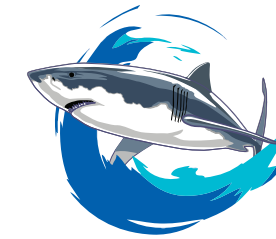
Right: Awe is the aim of the experiences designed for the children hosted by the SOSF-DRC and its collaborators. Many of them leave imbued with a new sense of wonder.



The centre further demonstrated its commitment to education and capacity building by expanding its collaboration



The SOSF Shark Education Centre (SOSF-SEC) building is an immersive experience in itself, as excited young learners arrive for their morning of fun activities and experiential learning.



save our seas
shark education centre



CLOVA MABIN

SOSF SHARK EDUCATION CENTRE

DR CLOVA MABIN

The Save Our Seas Foundation Shark Education Centre (SOSFSEC) aims to foster a love of the ocean, inspiring people to protect it. Historically, South African ocean spaces have been inaccessible to many communities and we attempt to address some of these inequalities by offering our educational programmes to schoolchildren from under-resourced communities.

The SOSFSEC's educational strategy has five key areas of focus: short-term lessons for school or community groups; the distribution of educational resources; longer-term educational programmes; public visits to the centre; and digital communication.

STAFF

The diversification and growth of our team has enabled us to host larger school groups from more areas in Cape Town (teaching in English, Afrikaans and isiXhosa). We employed Afikile Ndude, our first isiXhosa-speaking senior educator, and Antonique Dick as a digital engagement and science communication officer.

Right, above: Hands-on is the way kids are encouraged to learn, with gentle guidance as a morning's school visit unfolds.

Right, below: The Marine Explorers programme facilitates safe and fun ocean experiences.

Opposite: The protected shores of Dalebrook beach and its rocky intertidal zone, located right opposite the SOSF-SEC, are a young explorer's paradise.

EDUCATIONAL PROGRAMMES

We hosted 171 groups comprising 5,873 learners, delivered 481 hours of environmental programming for our longer-term programmes and fed 3,702 individuals as part of our short- and long-term programmes.

Twenty-three learners (17 males and six females) participated in the 10-week snorkelling Marine Explorer programme. A Marine Explorer camp was held in January for the 2021 and 2022 cohort (30 participants) and in October for the 2023 cohort (18 participants).

Nineteen Grade 5 St James RC Primary School learners joined our second Sea School programme.

We guided 1,383 visitors (737 adults and 646 children) over 371 public tour groups. Four graduate interns from Shark Spotters and a Cape Peninsula University of Technology student joined our two-day training programme for guides to cope with increased visitor numbers during the festive season.

We collaborated with the Department of Forestry, Fisheries and the Environment (DFFE) and TRAFFIC to teach three days of shark workshops for fishery compliance officers to 65 participants.

FACILITY

Renovations of the facility continued and we doubled the size of our shore classroom, which enables us to host larger groups more comfortably and creates space for station-based learning. We moved the kitchen to the other side of the building and added staff bathrooms upstairs to cater for our expanding team.

BUILDING VIRTUAL CONNECTIONS

After the relaunch of our website this year, all our educational resources are now available for download free of charge, including our printable resources and our shark animations created with Digital Life. We also launched a livestream link so that website users can check out the conditions on the rocky shore, at the Dalebrook tidal pool or at the local surf break, and this represents most of our website traffic.



*We guided 1,383 visitors
(737 adults and 646 children)
over 371 public tour groups.*

CONFERENCES AND SPECIAL EVENTS

Team members attended the Marine and Coastal Educators Network (MCEN) national conference, the Western Cape Environmental Education Forum (WCEEF) and the Environmental Education Association of Southern Africa (EEASA). Justine, Logan and Wade presented at the Wavescapes Slide Night and four of our team attended the biennial Southern African Shark and Ray Symposium (SASRS) in Durban.

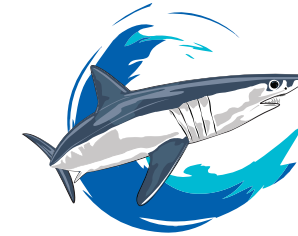
We collaborated with Curb Beach Plastic for the International Coastal Clean-up and sponsored transport for 60 Ocean View children to attend at the beach closest to their homes.

LOOKING FORWARD

Strategy development and implementation are our focus in 2024. By setting specific strategic goals, we can meet the needs of our target audience while delivering a high-quality educational experience to contribute to a healthier marine environment. Assessment of our impact is a priority and to this end we are developing a monitoring, evaluation and learning strategy. We aim to expand our Marine Explorer programme to last 15 weeks and increase the focus on science and conservation. We hope to encourage more girls to join the programme and are looking at ways of addressing the current gender ratio.



Genetic tools are helping us understand migration patterns of scalloped hammerhead and silky sharks in the Eastern Tropical Pacific Marine Corridor.



save our seas
shark research center



MAHMOOD SHIVJI

SOSF SHARK RESEARCH CENTER

DR MAHMOOD SHIVJI

The Save Our Seas Foundation Shark Research Center USA (SOSF-SRC) is an integral part of Nova Southeastern University (NSU), Florida, functioning as an academic unit of the NSU Halmos College of Arts & Sciences. The SOSF-SRC mission is to conduct advanced marine conservation science research and provide opportunities to graduate and postdoctoral researchers.

The SOSF-SRC uses an integrative, multi-disciplinary approach to its research programmes, employing methods from genetics, genomics and ecology to obtain a scientifically holistic understanding of sharks and rays for conservation planning.

In 2023, the SOSF-SRC completed six scientific papers and continued conducting conservation research on sharks in two areas:

I. POPULATION GENETIC/GENOMIC DYNAMICS OF EXPLOITED LARGE-BODIED SHARK SPECIES

We continued research to identify genetically distinct populations and their levels of genetic diversity for three species of globally occurring, large-bodied, apex predator sharks of high conservation concern: the oceanic whitetip, scalloped hammerhead and shortfin mako.

1. We completed a study on the population genetic dynamics of the oceanic whitetip shark that was published in *Conservation Genetics*. This study

submitted a manuscript describing the horizontal and vertical movement behaviour of shortfin mako sharks

provides the first global assessment of the genetics of this Critically Endangered species and is also the first to incorporate both nuclear and mitochondrial markers to obtain a holistic view. A news story on the main findings of this research was developed in collaboration with the Save Our Seas Foundation's communications team and featured on its website's Ocean News page.

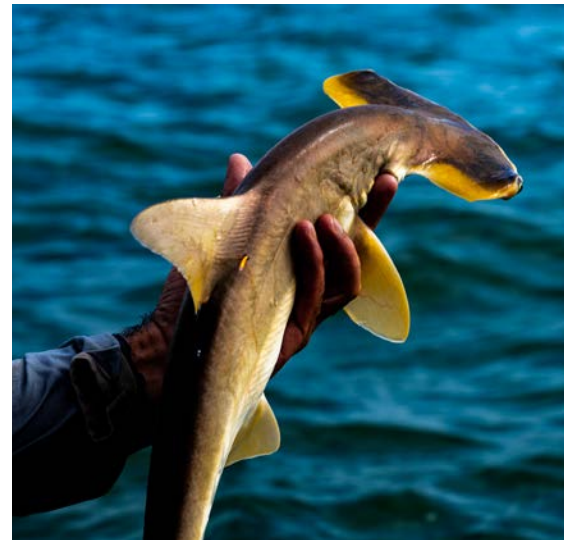
2. We finalised a genomics-scale (nuclear and mitochondrial) study of shortfin mako shark populations throughout the Atlantic (this research was presented at the October 2022 Sharks International Conference) and drafted a manuscript for journal submission.

3. We initiated a genomics study to assess the comparative genetic diversity and long-term population dynamics specifically of the Critically Endangered scalloped hammerhead sharks that form the seasonal aggregations at Wolf and Darwin islands in the Galápagos.

II. MIGRATION PATTERNS OF SHARKS

The SOSF-SRC has a long-term programme that combines genetics and genomics approaches with the study of the actual movements of sharks to obtain a comprehensive understanding of shark migration patterns and population dynamics. In 2023, we:

1. Continued our collaboration with Dr Pelayo Salinas de León, the Guy Harvey Research Institute and the Charles Darwin Foundation to extend our work on the movement ecology of the scalloped hammerhead and Vulnerable silky sharks based in the Galápagos Islands. As part of these ongoing studies, more than 30



Above: The evolution of genetic research in shark science and conservation has seen huge strides taken over the years at the SOSF Shark Research Center (SRC), with recent insights into shark trade and movement patterns.

Opposite: The SOSF-SRC combines genetics and genomics work with data collected from other research (like satellite and acoustic tracking) on the movement patterns of sharks, to understand how they move and migrate, and the dynamics of their populations.

additional satellite tags were deployed on these silky and hammerhead sharks in 2023.

2. Finalised and submitted a manuscript describing the horizontal and vertical movement behaviour of shortfin mako sharks in the eastern North Pacific, resulting from a collaborative study with the NOAA. The paper is currently in press in the *Marine Ecology Progress Series*.

3. Oversaw the completion of NSU Master's graduate student Maria Herrera's thesis, which describes the movement behaviour of Critically Endangered scalloped bonnethead sharks off Colombia in the Eastern Tropical Pacific. This research, led by Ms Herrera, was funded by a Save Our Seas Foundation award made directly to her as a project leader, and by the Guy Harvey Research Institute and the SOSF-SRC. A manuscript from this work is currently in journal review.

OTHER 2023 ACTIVITIES (NON-RESEARCH)

1. We assisted the Save Our Seas Foundation with the planning and implementation of its 20th anniversary event held at the NSU Art Museum in Fort Lauderdale, Florida, in September 2023.

2. We conducted searches for new staff members to fill vacant positions on the laboratory research side of SOSF-SRC programmes.



OUR PARTNERS

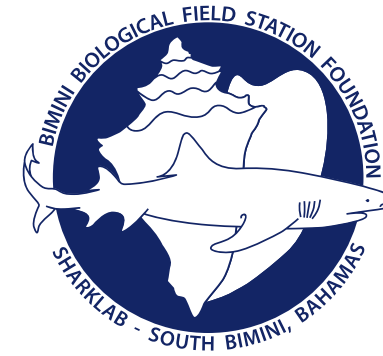
REPORTS FROM THE SAVE OUR SEAS
FOUNDATION PARTNERS AROUND THE WORLD

- 1 BIMINI BIOLOGICAL FIELD STATION FOUNDATION | MATTHEW SMUKALL
- 2 THE MANTA TRUST | GUY STEVENS
- 3 SHARK SPOTTERS | SARAH WARIES
- 4 THE NORTH COAST CETACEAN SOCIETY | JANIE WRAY
- 5 THE ACOUSTIC TRACKING ARRAY PLATFORM | TARYN MURRAY





Tagging sharks has helped scientists at the Bimini Biological Field Station Foundation (BBFSF) to track numerous animals and unravel the degree of connectivity between The Bahamas and Florida.



DR MATTHEW J. SMUKALL

BIMINI BIOLOGICAL FIELD STATION FOUNDATION

MATTHEW SMUKALL

RESEARCH

Changes to regulations permitting research in The Bahamas have impacted our activities, as have new restrictions on long-term survey methodology and sampling procedures. In addition, a Mutually Agreeable Terms contract can impose stiff financial penalties on research organisations. Many research groups have been advised not to sign the contract, which means they cannot conduct research. For the BBFSF, potential penalties could jeopardise the entire facility and its long-term standing in The Bahamas. We are engaging with other research groups to facilitate an improved permitting system in The Bahamas that will allow research and collaborations to continue in the future.

In view of this, we have adapted our research outlook and objectives. Data obtained from our long-term telemetry, genetic analysis and conventional tagging projects indicate a high degree of connectivity between The Bahamas and Florida. Through collaborations and co-funding from the Ocean Mokum and Rock The Ocean foundations and the Hai-Stiftung, our tagging efforts in 2023 expanded around the Florida Keys. We completed 268 longline surveys, collecting data from 426 elasmobranchs and deploying 53 acoustic transmitters and eight satellite tags.

EDUCATION

SUPPORT FOR EARLY CAREER SCIENTISTS

Station crew assist with all aspects of operating a research station: handling boats, leading field groups, assisting with education and engaging the general public. We are currently supporting Molly Kressler's PhD and Emily Cormier's, Jasmine Nyce's and Jack Dales's MSc research. Former BBFSF students Maurits Van Zinnicq Bergmann and Matthew Smukall completed their PhD degrees in 2023, while Vital Heim continues to analyse datasets for completion of his PhD in 2024. We are also providing biological samples to collaborators, including Shannon Barry at the Florida Institute of Technology. Station assistants at the Shark Lab are given the opportunity to lead independent projects and publish the results. Kylie Bostic and Baylie Fadool are finalising a manuscript on nurse shark growth rates from Bimini, and Alina Hussey is using stable isotope analysis of multiple tissue types to investigate temporal dietary shifts in juvenile lemon sharks.

COURSES

We welcomed nine college courses, including Carolina University, University of Minnesota and Florida Southern College, and two Field Excursion courses for the public. During the summer we hosted our Teacher & Educator Naturalist Courses, supported by the Save Our Seas and Ocean Mokum foundations. Thirty teachers and educators from the USA, Canada and The Bahamas were selected for scholarships based on their personal backgrounds, how they planned to incorporate the experience into their teaching and their ability to engage diverse student groups, including traditionally underserved communities.



Top: Students, and their research projects, are an integral part of life at Bimini – and the field station's scientific output.

Above: Teacher, educator and college-level courses have helped to open the world of sharks and rays to an even wider and more diverse audience.

We completed 268 longline surveys, collecting data from 426 elasmobranchs and deploying 53 acoustic transmitters and eight satellite tags.



Left: Knowing the benefits of getting as close to the ocean (or under it) as possible, the BBFSF outreach team continues to support local schools through in-person presentations and Shark Lab open days.

Right: In 2023 the BBFSF also hosted over 670 members of the public on field station tours that gave a wide audience insights into the science behind shark conservation.



OUTREACH

Social media provide a platform for us to share science and conservation messaging to some 125,000 followers across Instagram, Facebook and Twitter. We used virtual meetings to speak to more than 800 elementary to high school students about our research, general shark biology, scientific methodology and marine conservation, and hosted over 670 members of the public on field station tours. Our outreach team continues to support local schools through in-person presentations and Shark Lab open days. We communicate with the broader general public by participating in conservation events such as Rock The Ocean Music Festival, Stoked on Salt Festival and Nat Geo's Shark Fest Shark Con. We strive to be a valuable member of the local Bimini community, hosting four veterinary clinics and three beach clean-ups.

SCIENTIFIC OUTPUT

The BBFSF continues to produce peer-reviewed scientific publications from data acquired in Bimini and through regional collaborations. In 2023, we contributed to several ongoing projects ranging from sharks' regional movements to their genetic structure, which resulted in three peer-reviewed manuscripts accepted for publication and an additional six currently in review.



All manta and devil rays are listed as Vulnerable or Endangered on the IUCN's Red List of Threatened Species, primarily due to the impact of global target and bycatch fisheries.



GUY STEVENS

THE MANTA TRUST

DR GUY STEVENS

With a larger core operations team, 2023 has seen the Manta Trust go from strength to strength. Our achievements include 10 scientific publications, 10 research infographics, seven conferences and 11 public exhibitions and outreach events.

CAPACITY DEVELOPMENT AND LEGISLATIVE ACTION

In the Maldives, we provided input for the sixth amendment of Regulations for the Protection of Natural or Indigenous Wildlife and submitted 45 proposals for Important Shark and Ray Areas (ISRAs) in the Western Indian Ocean. We trained 16 Maldivian staff and interns with a view to them driving the projects locally.

In the Wider Caribbean Region, we contributed to the uplisting of *Mobula birostris* to Annex II of the Protocol Concerning Specially Protected Areas and Wildlife, and in the Atlantic Ocean we contributed to the retention ban on mobulid rays in ICCAT fisheries. We provided details on the best protocols for handling and release and circulated recommendation letters to government representatives.

To inform a global review on the status of the gill plate and meat trade of manta and devil rays, we conducted market surveys in Hong Kong and mainland China to quantify the extent of the gill plate trade after the 2017 CITES regulation.



We gathered elasmobranch conservation representatives from each key coastal fishing nation in West Africa at a workshop in Cameroon that created the Gulf of Guinea Elasmobranch Working Group. We then presented a draft conservation strategy for elasmobranchs in the Gulf of Guinea during the CMS Marine Megafauna Week in Senegal.

We facilitated the creation of the Atlantic Manta and Devil Ray Coalition and the Eastern Tropical Pacific Manta and Devil Ray Networking groups.

RESEARCH

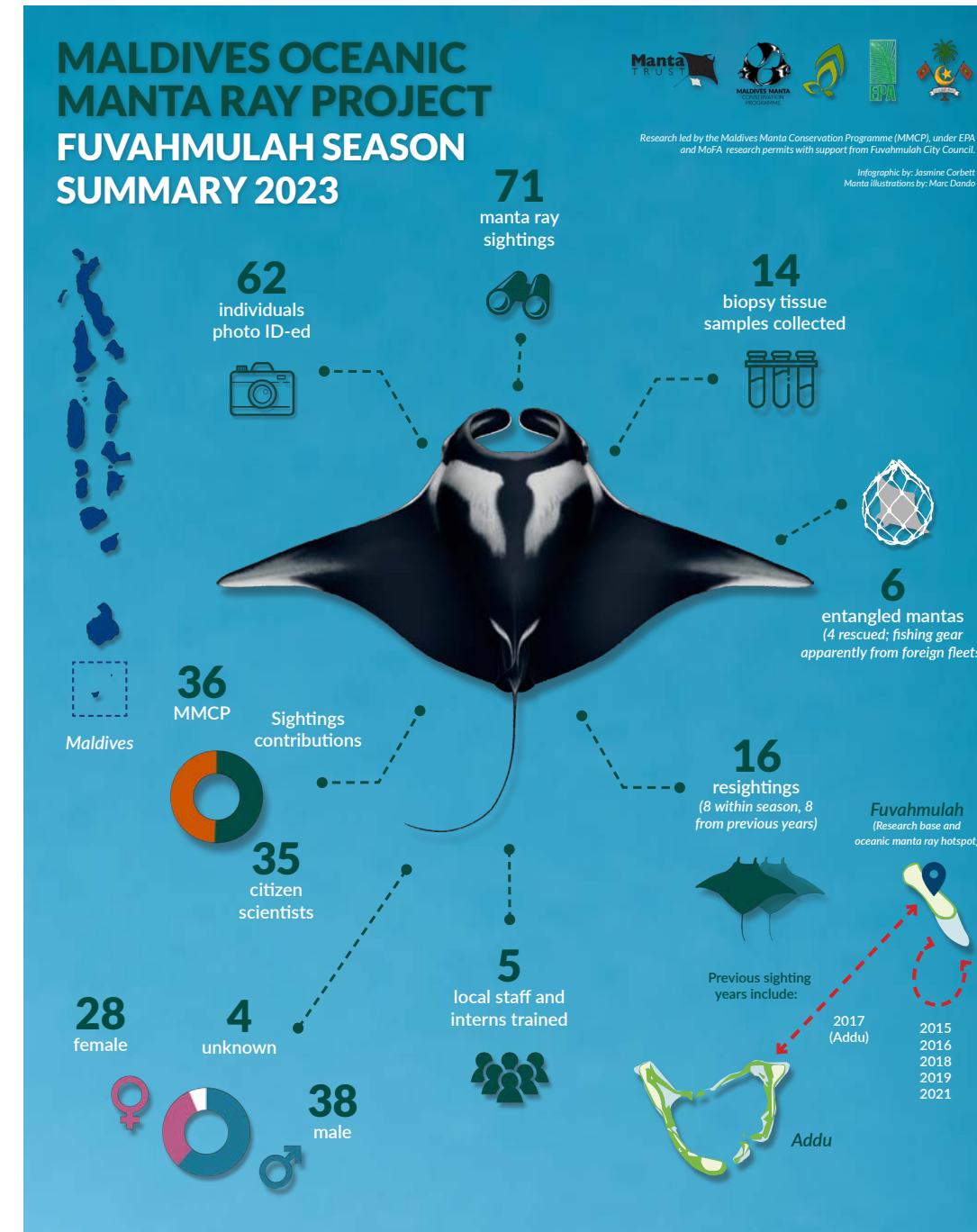
We joined researchers from Proyecto Mantas Ecuador and affiliate project leaders to study the largest known manta population. For the first time, our affiliate project network from Mexico, Peru, Ecuador and Costa Rica met to promote collaboration in the Eastern Tropical Pacific.

We used new contactless ultrasound technology to identify early-stage pregnancy in reef manta rays in the Maldives and found that the reproductive rate of mature females is probably lower than previously estimated.

During a four-month project in Makunudhoo Atoll in the Maldives, we have so far identified 323 reef manta rays, of which 75% of the individuals are new to the Maldives Manta Database.

Above, left: Manta ray conservation activities in 2023 spanned regions as disparate as the Maldives, coastal West Africa and the Eastern Tropical Pacific.

Above, right: The Manta Trust's work covers the globe, with manta and devil rays as the focus. Their wider relevance is highlighted in social media, films and educational programmes.



we conducted market surveys in Hong Kong and mainland China to quantify the extent of the gill plate trade after the 2017 CITES regulation.

We have continued to collect data on oceanic manta rays in the Maldives, where we have recorded close to 1,000 sightings. Most (90%) are concentrated around Fuvahmulah Atoll.

Together with the Manta Caribbean Project, we started a collaboration with NOAA, the Florida Manta Project and Oceanos Vivientes to examine connectivity between adults' habitats in Mexico and juveniles' nursery habitats in south-eastern USA.

AWARENESS AND EDUCATION

We published our Education & Diversity Strategy and expanded our in-person outreach, taking virtual reality headsets to schools and public events across the UK, Maldives and Ecuador. We also continued online presentations to schools, colleges and universities, reaching more than 7,500 people globally.

We trialled the first in-person Ocean Summer School in the UK for 60 children (aged 8–16 years), with 25% of spaces free for children from economically disadvantaged homes. In the Maldives, we hired a new education manager who restarted Moodhu Madharusaa sessions in Baa Atoll.

We launched our quarterly Education Newsletter and have over 60 subscribers, and we maintain an online audience of nearly 140,000. Our film *Inspiring Ocean Guardians* made it to the final of the Smiley Charity Film Awards, and *Mantas of Makunudhoo* received a special mention as finalist of the Big Syn International Film Festival. For World Manta Day, we held a special screening at Plymouth Arts Cinema of manta-related films, including *Manta Watch* (New Zealand) and *Munkiana* (Baja California, Mexico).



The Shark Spotters Coastal Conservation team cemented its presence in the environmental monitoring and emergency scene, providing rapid relief at marine emergencies at Cape Town's beaches and aiding coastal monitoring.



SARAH WARIES

SHARK SPOTTERS

SARAH WARIES

Shark Spotters grew in 2023 and we continued our safety, research, education and conservation activities successfully.

In December we recorded several white shark sightings in False Bay, the first by the spotters since 2019! Our Muizenberg team spotted a white shark on three occasions in December, and members of the public reported white shark sightings elsewhere in the bay. We cannot tell if this signals a return of white sharks to False Bay; it does, however, highlight the programme's importance in continuously monitoring shark activity.

Our Cape Town spotters also recorded more than 70 bronze whaler shark sightings in 2023. Spotting continued at 4-6 beaches (depending on the season) and the Fish Hoek shark exclusion barrier was deployed 121 times.

The past year helped the Plettenberg Bay Shark Spotters demonstrate its long-term value, providing effective shark safety activities at the five beaches where it operates and integrating into Plett's beach safety strategy. In the past year, the Plett Spotters recorded more than 70 white shark and 200 bronze whaler shark sightings. All white shark sightings resulted in immediate beach closures.



Top: Moving hearts and shifting mindsets, the Shark Spotters education programme reached more than 7,500 people throughout 2023, a 56% increase from 2022.

Above and opposite: A research project in False Bay is monitoring shark and ray diversity, abundance and distribution using acoustic telemetry, shore angling and baited remote underwater video (BRUV) surveys.

The expansion of spotting to Plettenberg Bay doubled our safety footprint in South Africa, a significant step forward for sustainable shark bite mitigation nationally and globally. In December 2023, a three-year Memorandum of Understanding was established with the local Bitou Municipality, confirming the long-term continuation of shark spotting in Plett.

Our education programme reached more than 7,500 participants in 2023, a 56% increase from 2022. Marine education activities included 45 youth programmes, 10 adult training programmes, 12 beach pop-up events, 16 environmental calendar day events, 18 holiday club days and 20 coastal clean-ups, as well as participation in 15 conservation exhibitions and career expo events.

The rapid response capacity provided by our Coastal Conservation team to emergencies at Cape Town's beaches proved invaluable, especially following escalating conflict between marine animals and water-users. Our team was at the forefront of managing the increase in seals biting water-users.

Our research programme continues to monitor elasmobranch diversity, abundance and distribution in False Bay through acoustic telemetry, shore angling surveys and baited remote underwater video systems. In 2023 we took over the biodiversity monitoring project in the Helderberg Marine Protected Area, completing 22 sampling days. We dart-tagged more than 400 fish and sharks and inserted acoustic transmitters in 10 Critically Endangered common eagle rays, five spotted gully sharks and five lesser guitarfish. We maintain the False Bay acoustic array and increased receiver coverage in the bay. We published two peer-reviewed papers and attended two conferences, giving a keynote address at White Sharks Global in November 2023.

In June we welcomed the inaugural cohort of the Shark Spotters Graduate Training Programme, our long-term investment in addressing the critical skill and diversity gaps in the marine science industry. The programme employs five young graduates from under-resourced communities and provides them with accredited skills such as commercial dive qualifications, field skills and workplace experience to increase the diversity of human capital through relevant industry-standard quality, training and certification. We look forward to the graduates completing their time with us and moving into the workforce with competitive skills and qualifications.

In the current economic climate, creating meaningful employment opportunities for marginalised communities is a priority in South Africa. We increased our staff complement considerably in the past year, bringing it up to 75 in Cape Town and Plett. All employees are primary breadwinners, meaning that Shark Spotters directly supports more than 180 individuals, highlighting the value of the programme in creating 'blue jobs' that connect communities and the marine environment. We have continued to provide training and skills development opportunities for the team throughout the year.





Land-based data collection focused on the occurrence, frequency and behaviour of humpback and fin whales and orca. The team gathers photo-identification data to understand site fidelity, sociality and population dynamics.



JANIE WRAY

THE NORTH COAST CETACEAN SOCIETY

JANIE WRAY

OVERVIEW

The North Coast Cetacean Society (NCCS), a non-profit organisation founded in 2001, is dedicated to research, education and the protection of whales along the north and central coasts of British Columbia. Our objective is to understand the seasonal distribution, abundance and social dynamics of cetaceans and the threats they face. Our land-based and marine surveys are designed to identify potentially significant habitats for fin, humpback and orca populations. We recognise the importance of scientific research in conjunction with community outreach to protect habitats of whales at risk.

LAND-BASED SURVEYS

Focusing on the occurrence, frequency and behaviour of humpback and fin whales and orca, we collected genetic and scar analysis data opportunistically for humpback and fin whales and photo-identification data for all species to understand their site fidelity, sociality and population dynamics. We identified 179 humpback whales, 65 of which were sighted only from land. From the Fin Island Research Station we documented 20 new arrivals, eight of which were seen only from land, and nine of the 11 total mother-calf pairs recorded this season.

MARINE SURVEYS

During 58 opportunistic marine surveys concentrating on humpback and fin whales, we collected photos for identifying individuals and recorded exact locations, group composition, behaviour and the prey foraged. Sixty of the 173 humpback whales identified were seen only during marine surveys. We recorded 22 new humpback arrivals to Gitga'at Territory, 10 of which were sighted only during marine surveys, and eight of the 11 mother-calf pairs.



The premise of eDNA is that organisms leave a genetic trace in the aquatic environment that can be detected by the collection, filtering and DNA screening of water samples.

DRONE SURVEYS

NCCS drone pilots conducted 321 flights that produced more than 50 hours of footage. We conducted drone focal follows opportunistically on humpback and fin whales from land and during marine surveys. From May to October we collected 43 high-quality focal follow tracks, comprising 32 humpback whale, eight fin whale and three orca follows.

To understand the pervasiveness of threats to whales, including ship-strike and entanglement, we analysed images taken from drone flight videos and documented the presence and likely origin of scars and their status of healing. We hope to expand this baseline scar dataset to understand the frequency of ship-strikes and entanglements and track changes in the health of individuals.

Right, above: The North Coast Cetacean Society (NCCS) studies whales along the north and central coasts of British Columbia. A location as remote as this requires innovation and a can-do attitude.

Right, below: Boat-based surveys focused on humpback and fin whales. They entailed collecting photos for identifying individuals and data that detail the whales' exact location, group composition, behaviour and prey foraged.

BLOW AND eDNA SAMPLING

The DNA in whale breath enables us to assess levels of genetic relatedness and whale family networks, and using a small quadcopter drone to sample humpback whale blows is a non-invasive means of collecting this DNA. With our adapted drone we were able to collect 109 blow samples, 44.2% of which came from flights conducted from the Fin Island Research Station. We can minimise our impact by conducting much of our research from land and reducing vessel noise around whales. The remaining 55.8% of blow samples were collected opportunistically during marine surveys.

The Fin Island team collected 166 environmental DNA (eDNA) samples from one tidal and four hotspot surveys. The premise of eDNA is that organisms leave a genetic trace in the aquatic environment, which can be detected when water samples are collected, filtered and screened for DNA.

BC HYDROPHONE NETWORK

The NCCS continued to lead the BC Hydrophone Network, a collaboration between Indigenous communities and NGOs seeking to mitigate the impact of anthropogenic noise and vessel traffic on whales. We built and now maintain a hydrophone network that enables us to listen to and record the acoustic tradition of whales along the British Columbia coast.

In 2023 the NCCS launched *Whalesound.ca*, an interactive website that provides information about whale species in the province and the impact of ocean noise on their lives. An interactive map allows users to interact directly with key hydrophone locations and the network partners. SeaStats is a data visualisation tool that gives insight into the marine soundscapes of British Columbia.

Two scientific papers were published and 16 presentations were given in 2023.





The ATAP is currently collecting data on approximately 800 tagged individuals from a suite of different species, including teleosts (bony fish), sharks, rays and sea turtles.



TARYN MURRAY

THE ACOUSTIC TRACKING ARRAY PLATFORM

DR TARYN MURRAY

South Africa's Acoustic Tracking Array Platform (ATAP) is a national research platform of the South African Institute for Aquatic Biodiversity (NRF-SAIAB). The ATAP is an established research infrastructure comprising a nationwide network of acoustic receivers. Researchers tag and release animals and use acoustic telemetry to track them. The receivers then record the signals released by the tags, allowing the researchers to piece together the movements of individual animals and gather information on the species in general; these data are freely available to the tag owners. Over the past 12 years, more than 1,800 animals have been fitted with acoustic tags, and the ATAP is currently collecting data on approximately 800 tagged individuals from a suite of different species across teleosts (bony fish), sharks, rays and sea turtles.

SUMMARY OF ACTIVITIES

PUBLISHED PAPERS

Ten scientific papers making use of data collected by the ATAP dealt with topics such as a network analysis of the endemic spotted gully shark (Cottrant et al. 2023), persistent transboundary movements of four shark species between



Left: The ATAP supports ongoing research, including the False Bay and Algoa Bay elasmobranch project, which is in collaboration with Two Oceans Aquarium, Shark Spotters and South African National Parks.

Opposite, left: The ATAP reported on the results of research at the 6th International Conference on Fish Telemetry and the 7th Southern African Shark and Ray Symposium.

Opposite, right: Over the past 12 years, the ATAP has deployed acoustic tags on more than 1,800 animals to track their movements and understand their migratory habits.



South Africa and Mozambique [Daly et al. 2023], seasonal philopatry of two stingray species to South African estuaries [Elston et al. 2023] and identifying the vulnerability of smooth hammerhead sharks to exploitation at the boundary of the De Hoop Marine Protected Area [Albano et al. 2023].

ONGOING PROJECTS

The ongoing projects we supported were the False Bay and Algoa Bay elasmobranch project, which is in collaboration with Two Oceans Aquarium, Shark Spotters and South African National Parks; and the Knysna Estuary blue stingray project, in collaboration with South African National Parks and Rhodes University.

NEW PROJECTS

A smaller Save Ours Seas Foundation-funded project on common eagle rays is focusing on assessing the biogeography, movement behaviour and genetic connectivity of this species in southern Africa. Dr Matt Parkinson, instrument technician for the ATAP, visited Namibia in February 2023 to assist the Namibian Nature Foundation and the team from the Namibian Rays and Sharks project, led by Dr Ruth Leeney, with the set-up of a small acoustic telemetry array in the Namibian Islands Marine Protected Area. A mullet project was established in the Kowie Estuary, Eastern Cape. The data collected during this project will form the basis of two PhD studies.



TRANSMITTER GRANT RECIPIENT 2023

This year's joint ATAP/Save Our Seas Foundation acoustic transmitter grant, which has been running since 2016, has been awarded to Nakia Cullain, a PhD student registered with Dalhousie University and working with the Marine Megafauna Foundation and the Oceanographic Research Institute on movements of the Vulnerable reef manta along the east coast of South Africa. To date, 18 reef mantas have been externally tagged, and the grant allows for the tagging of an additional 15 individuals, which will take place in 2024.

SCIENCE ENGAGEMENT

The ATAP was well represented at the 6th International Conference on Fish Telemetry, held in Sète, France, in June 2023 and at the 7th Southern African Shark and Ray Symposium held in Durban, South Africa, in October 2023.

Three public presentations were also delivered during the course of the year: two at the NRF-SAIAB as part of its monthly seminar series, and one online presentation for the Leadership for Conservation in Africa as part of its *Unlocking Nature* series. Taryn also visited her alma mater to encourage high school students to pursue a career in aquatic science. The ATAP has amassed more than 4,000 followers across Facebook, Twitter and Instagram.

The SAIAB Summer School was held in Port Alfred, Eastern Cape, between 4 and 8 December 2023.

OUR 2023 PROJECT LEADERS

NEW SMALL PROJECTS

- 1 **Alati** | Local knowledge halavi guitarfish
- 2 **Antu** | Sharpnose guitarfish
- 3 **Barbosa Martins** | Shark nutrients for food security
- 4 **Binstock** | Blacktip sharks Gulf of Mexico
- 5 **Cañete** | Deep-sea shark fisheries
- 6 **Castillo - Páez** | Round stingrays
- 7 **Coulon** | Spotted catsharks and climate change
- 8 **Dames** | Eco-engineering
- 9 **Eshun** | African wedgfish conservation
- 10 **Gandra** | Smooth hammerhead shark nurseries
- 11 **García-Cegarra** | Chilean eagle rays
- 12 **Gupta** | The guitarfish of Goa
- 13 **Gustianto** | Raja Ampat epaulette shark
- 14 **Lavigne** | Turtle hatching failures
- 15 **Leigh** | Combating microplastics
- 16 **Lonati** | Underwater research by drone
- 17 **Louhichi** | Tunisian shark fisheries
- 18 **Mendoza Pfennig** | Sawfish eDNA
- 19 **Nazareth** | Andaman guitarfish nurseries
- 20 **Pathirana** | GOLT climate change rays
- 21 **Rodríguez Juncá** | Photo ID mobulid rays
- 22 **Rojas Corzo** | Whitespotted eagle ray tracking
- 23 **Samad** | Essential habitats and shark fisheries

- 24 **Septiani** | Indonesian small-scale fisheries
- 25 **Shidqi** | Rhun Island thresher sharks
- 26 **Vargas - Caro** | Endangered houndshark fisheries

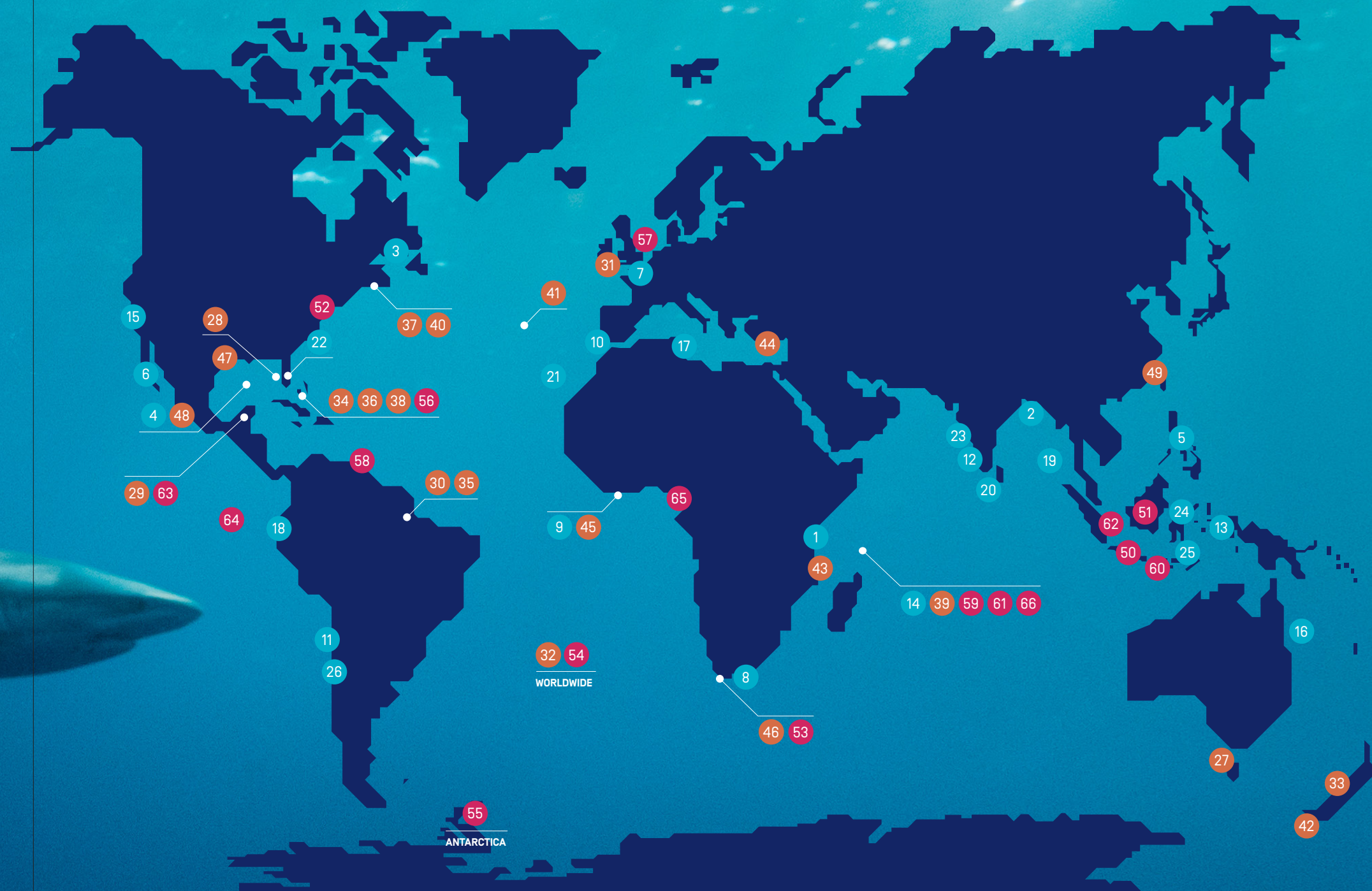
NEW KEYSTONE PROJECTS

- 27 **Awruch** | Maugean skate Macquarie Harbour
- 28 **Bassos-Hull & Boggio-Pasqua** | Pygmy devil ray data
- 29 **Bonfil** | Mexican coastal shark nurseries
- 30 **Charvet & Faria** | Largetooth sawfish
- 31 **Copeland** | Guardian Angels film
- 32 **Ebert** | 'Lost shark' taxonomy
- 33 **Finucci** | Gulper sharks and longline fisheries
- 34 **Guttridge** | Smalltooth sawfish conservation
- 35 **Hegg** | Sawfish tooth chemistry
- 36 **Kessel & Feldheim** | Caribbean reef shark connectivity
- 37 **Mohan** | Shark life history from cartilage
- 38 **Morris** | Juvenile lemon shark populations
- 39 **Newsome** | Reef manta ray behaviour
- 40 **Newton** | Offshore wind electromagnetic fields
- 41 **Prendergast** | Sicklefin devil ray movements
- 42 **Rogers** | Cowsharks and climate change
- 43 **Rumisha** | Local community capacity
- 44 **Saygu** | Protecting guitarfish hotspots
- 45 **Seidu** | Conservation strategies

- 46 **Soekoe** | Eagle ray ecology
- 47 **Sweezey** | Dried blood spot sampling
- 48 **Swenson** | Whitespotted eagle ray abundance
- 49 **Weng & Chiang** | Critical habitats for wedgfish and guitarfish

CONTINUATION KEYSTONE PROJECTS

- 50 **Booth** | Tourism for shark conservation
- 51 **Chin** | Saving river sharks
- 52 **Crockett** | Shark research grants
- 53 **Foster & Landschoff** | Great African Seaforest biodiversity
- 54 **Graham** | Gill Guardians
- 55 **Hart** | Monitoring Antarctic Peninsula penguins
- 56 **Johnson** | Education outreach
- 57 **Jones** | Genetic monitoring tool
- 58 **Kingon** | Scalloped hammerhead community conservation
- 59 **Kiszka** | Seychelles cetaceans
- 60 **Kyne** | Clown wedgfish ground-truthing
- 61 **Mortimer** | Turtle monitoring
- 62 **Putra** | Rhino ray conservation management
- 63 **Rubio** | Local knowledge and education
- 64 **Salinas de León** | Shark ecology conservation Galápagos
- 65 **Takoukam Kamla** | Citizen science shark conservation
- 66 **Vel** | Environmental education



PROJECT LEADERS
SMALL GRANT PROJECTS



VICTOR ALATI



LOCAL KNOWLEDGE ON HALAVI GUITARFISH

Kenya Marine and Fisheries Research Institute

KENYA | HALAVI GUITARFISH

Victor is engaging with local Kenyan fishers to map out the historical occurrence and abundance of the Critically Endangered halavi guitarfish. Overfishing has led to a steep decline in the number of this guitarfish, and the sustainable management of its surviving populations is vital for its conservation. Victor will combine interviews that help him glean local knowledge to chart guitarfish population changes over time in coastal Kenya with meetings to promote his findings and advocate for the vulnerability of the halavi guitarfish.



DURJOY RAHA ANTU



REPRODUCTIVE BIOLOGY OF SHARPNOSE GUITARFISH IN THE BAY OF BENGAL

Jagannath University

BANGLADESH | SHARPNOSE GUITARFISH

Little is known about how and where the Critically Endangered sharpnose guitarfish breeds and pups. But having this information, and feeding it into fisheries management plans, is essential to looking after its plummeting populations. Raha is on a mission to understand the breeding biology of this CITES-listed species because, although it is listed as a protected species in Bangladesh, the sharpnose guitarfish is still caught as a target and bycatch (incidental) species.



ANA BARBOSA MARTINS



FOOD SECURITY AND THE FUTURE FOR SHARKS

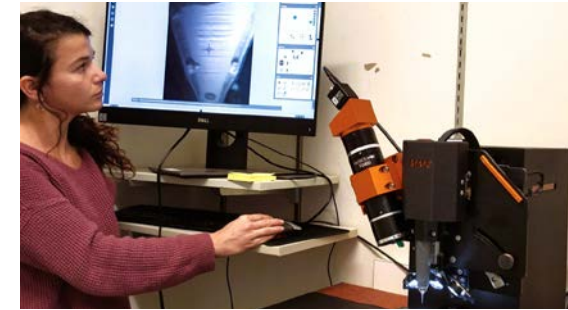
Dalhousie University and the iFisheries lab

CANADA | SHARKS AND RAYS

Ana is investigating the nutritional content of shark and ray meat products, an increasingly important protein source to many communities worldwide as fish populations fail. But if we don't properly understand the value of and motivation for shark catches, we stand to mismanage both shark populations and the security of food in at-risk communities. Ana will quantify the content of seven nutrients that are essential to human health for the 20 most caught shark and ray species. Her project will identify the importance of sharks and rays in global food and nutritional security and suggest new ways to think about management and conservation strategies.



ADDIE BINSTOCK



DISTINGUISHING BLACKTIP SHARK POPULATIONS IN THE GULF OF MEXICO

University of New England

USA | BLACKTIP SHARK

One of the largest populations of the blacktip shark – a Vulnerable species on the IUCN Red List – occurs in the Gulf of Mexico, where it is managed as a single stock. However, Addie is exploring the variability in the blacktip populations that live in different parts of the gulf with a view to refining the management of different subpopulations. She's using novel techniques to understand these fine-scale differences. Improving the management of the gulf's blacktip sharks, especially more sensitive subpopulations in critical areas, is crucial for the population's overall health.



TITUS CAÑETE



DEEP-SEA SHARK FISHERIES

Large Marine Vertebrates Research Institute Philippines Inc. (LAMAVE)

PHILIPPINES | SHARK

The dedicated deep-sea shark fishery of Cagayan-cillo, a small island in the Philippines' Sulu Sea, is the focus of Titus's work. Concerned by the vulnerability of poorly understood, haphazardly managed and rarely protected deep-sea ecosystems, Titus is looking to the future, when increasing pressure in the deep could cause the collapse of shark populations. He will explore what is driving deep-sea shark fisheries, search for critical deep-sea shark habitats and glean insights from local fishers to understand what alternative and supplemental livelihoods could improve the sustainability of deep-sea shark fisheries in the future.



ANA CASTILLO-PÁEZ



CLARIFYING THE DISTRIBUTION OF ROUND STINGRAYS IN THE MEXICAN PACIFIC

FACIMAR

MEXICO | ROUND RAYS

Six species of round stingray have been reported for the Mexican Pacific, but in the past they were incorrectly identified. This is a confusing group and scientists differ in their estimates of diversity for the *Urotrygon* genus (known as round stingrays). Ana will be combining traditional methods (looking at coloration, patterns and body measurements) with genetic research to help determine which round stingrays live where in the subtropical and tropical Mexican Pacific Ocean. Classified as either Near Threatened or Vulnerable on the IUCN Red List, all these species are an important food source for coastal communities with low economic means.



NOÉMIE COULON



SPOTTED CATSHARKS AND CLIMATE CHANGE

Laboratoire de Biologie des Organismes et Ecosystèmes Aquatiques (BOREA)

FRANCE | SMALL-SPOTTED CATSHARK

The growing pups of egg-laying sharks rely on the ambient ocean temperature to incubate. But what happens as our climate changes? Noémie is thinking ahead, looking to test the impact of a warming and acidifying ocean on the developing embryos of small-spotted catsharks. She'll be investigating everything from how the embryo develops to whether the sex ratio of the shark pups is skewed by temperature and whether the warmer waters influence how the hatched pups behave. Noémie hopes to influence managers and policymakers to think about how this shark, and more vulnerable ones, will be impacted by our decisions now.



VIVIENNE DAMES



CAN ECO-ENGINEERING MAKE A MAN-MADE OCEAN FISH-FRIENDLY?

South African Institute for Aquatic Biodiversity (SAIAB)

SOUTH AFRICA | SHARKS AND RAYS

Harbours and ports are essential for our economies, but what do sharks make of these man-made structures? That's the question Vivienne is asking, hoping to understand how sharks and rays are adapting to our increasing human footprint in the ocean. She'll be using baited remote underwater video systems (BRUVs) to monitor the sharks and rays using the port of Ngqura, South Africa's only artificial port. The area is important for at least 29 sharks and rays, six of which are Critically Endangered and another six Endangered. Vivienne hopes that by understanding artificial habitats, we can boost their conservation potential.



BERNARD ESHUN



CONSERVATION OF AFRICAN WEDGEFISH

Institute of Nature and Environmental Conservation (INEC) Ghana

GHANA | AFRICAN WEDGEFISH

The Critically Endangered African wedgefish comes with a string of alarming conservation titles: it's an evolutionarily distinct and globally endangered animal (EDGE) and listed on CITES Appendix II. But in Ghana, where overfishing occurs in the coastal waters in which this ray is predicted to range, precious little is known about the African wedgefish. Bernard is aiming to change that by collecting novel information on its population, catches, how it is traded and what its socio-economic value is. The information, he hopes, will help drive a much-needed conservation plan to ensure that, with adequate management, this wedgefish doesn't disappear from Ghana's waters.



MIGUEL GANDRA



SMOOTH HAMMERHEAD SHARK NURSERIES

Center of Marine Sciences (CCMAR)

PORTUGAL | SMOOTH HAMMERHEAD SHARKS

Miguel is mapping potential nursery habitats for smooth hammerhead sharks in southern Portugal. He will be using the latest in telemetry technology to track their movement patterns, hoping to confirm preliminary suggestions and anecdotes from fishers that the Sagres coast in southern Portugal might provide refuge for smooth hammerhead pups to be born and grow larger and stronger before moving out into the open ocean. Miguel will be describing their migratory pathways and depth and temperature preferences and turning his information into digital multimedia content to increase awareness about the species.



ANA MARIA GARCIA CEGARRA



COUNTING EAGLE RAYS FROM ABOVE OF ATACAMA DESERT COAST

Centro de Investigación de Fauna Marina y Avistamiento de Cetáceos (CIFAMAC)

CHILE | CHILEAN EAGLE RAYS

Ana will be launching unmanned aerial vehicles (UAVs) to detect Chilean eagle rays in the sandy shallows along the Atacama Desert coast. She wants to know their size and how many there are, how and where they move, and whether these patterns differ between seasons. Information about these poorly understood rays is critical to answer questions about their management in Mejillones Bay. Ana will also find out whether the children from the area know anything about the ecology of these rays and whether fishers would be willing to implement release strategies to reduce bycatch.



TRISHA GUPTA



FISHERIES IMPACTS ON THREATENED GUITARFISH IN INDIA

Foundation for Ecological Research, Advocacy and Learning (FERAL)

INDIA | GUITARFISH

How are guitarfish using the shallow coastal habitats of Goa in western India, and how does that overlap with the fisheries there? How do these rays fare with the stress of capture? Do they survive if they are released? These are some of the questions Trisha is on a mission to answer. She is focusing on the Critically Endangered, CITES-listed wide-nose guitarfish that is also listed under India's Wildlife Protection Act. She'll also be looking at the habits and habitat use of related species, filling critical gaps in our knowledge and using the information to support the development of conservation management plans.



MUHAMMAD WIRALAGO DWI GUSTIANTO



TRACKING DECLINES IN PROTECTED WATERS

Elasmobranch Project Indonesia

INDONESIA | RAJA AMPAT EPAULETTE SHARK

The Raja Ampat epaulette shark can be found in the protected waters of the Raja Ampat Marine Protected Area in Indonesia. A Near Threatened species, it is endemic (found nowhere else in the world) to this region. But even havens now show our human footprint: Muhammad is investigating reports of declines in the epaulette shark's population here, where the impact of tourism in the form of development and boat traffic might be impacting these sharks. He's updating the information about the population, its distribution and threats to it to ensure these sharks are managed both inside and outside the marine protected area.



ALESSIA LAVIGNE



TURTLE EGG HATCHING FAILURES

SEYCHELLES | SEA TURTLES

For dwindling numbers of tortoises and turtles, ensuring that your eggs hatch successfully to launch the next generation is key to population stability or recovery. But for threatened species of hawksbill and green sea turtles and the land-based Aldabra tortoise in Seychelles, eggs that don't hatch with no clear explanation could spell disaster. Alessia is investigating the causes of hatching failures for these species with a view to identifying the key elements that require conservation and management intervention. With the right information, policies to protect these species can be more specific and successful.



SAMANTHA LEIGH



LEARNING FROM SHARKS TO COMBAT MICROPLASTICS

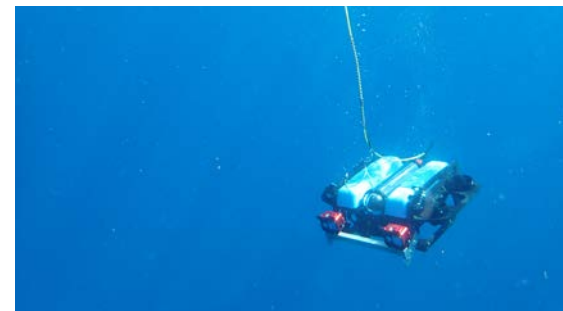
California State University Dominguez Hills (CSUDH)

USA | SHARKS

Samantha is taking biomimicry to the seas and specifically to sharks, looking to learn from the flow dynamics of their spiral intestines. Her aim is to use the engineering inspiration from nature to remove microplastics from flowing water. The project will involve using particle image velocimetry (PIV) to investigate the flow dynamics of particles moving through 3D printed models of a shark's spiral intestine. Samantha then hopes to design and 3D print an optimised shark spiral intestine to sort and remove microplastics, and then scale it up to work with waste water treatment and storm-water run-off.



MARTINA LONATI



UNDERWATER RESEARCH BY DRONE

James Cook University

AUSTRALIA | SHARKS AND RAYS

Martina is deploying remotely operated vehicles (ROVs) to survey sharks and rays at night. She hopes to develop best practices and standardised methodologies so that this technique can be widely used to study sharks and rays on coral reefs at night. Research shows that sharks and rays are often most active at night, but the limitations on scientific nocturnal diving restrict the consistent surveying of coral reefs when it's dark. Martina will be exploring the Great Barrier Reef, using this novel technique to gain completely different insights into the lives of sharks and rays, which we might be missing by surveying predominantly during the day.



RIHAB LOUHICHI



TUNISIAN SHARK FISHERIES

Faculty of Science of Sfax

TUNISIA | SHARKS AND RAYS

Shark fisheries in Tunisia's Gulf of Gabes target their catches in the spring and summer when species are moving into shallow waters. But shallow waters are often where sharks breed, pup and feed. Rihab is describing the shark and ray fisheries here and exploring their impact on many vulnerable species, often during their most critical life stages. She will use her insights to develop strategies to protect both young and older sharks when they are most at risk: when they are breeding, when they are pregnant and when they are growing up. Management strategies need to take these different requirements into account for different stages and in different areas.



ALEJANDRA MENDOZA



SEARCHING FOR SAWFISH IN NORTHERN PERU

ecOceánica

PERU | LARGETOOTH SAWFISH

Alejandra is sampling environmental DNA to scour the coast of northern Peru for largetooth sawfish. Although the species was long thought to be extinct here, two individuals were caught in the Tumbes Region in 2016. The finding has sparked some dedicated sleuthing from Alejandra, who will be interviewing fishers to find out about ancestral fishing grounds in the hope that the insights she gains will help to narrow down her search. Reports from fishers using the Cancas and Caleta La Cruz landing sites suggest that once-abundant sawfish were overfished for the value of their teeth, which were traditionally used as spurs on the feet of prize birds in cockerel fights.



EVAN NAZARETH



ANDAMAN GUITARFISH NURSERIES

Nature Conservation Foundation (NCF)

INDIA | RAYS & SKATES

Evan is searching the shallow waters of India's Andaman Islands to find the habitats that Critically Endangered giant guitarfish and other vulnerable rays use to pup and where their young grow up. He hopes that by addressing some of the key gaps in knowledge about how these rays live, his work can guide more effective protection for these species and their essential habitats.



BUDDHI PATHIRANA



RISING TEMPERATURES, SHRINKING RAYS?

University of Kelaniya (UOK)

SRI LANKA | RAYS & SKATES

We know that fish often end up smaller overall if their populations have been overfished. Rising ocean temperatures with our changing climate might have the same impact. Scientists have figured this out using 'Gill Oxygen Limitation Theory' (GOLT), which describes how limited oxygen affects the growth of water-breathing animals. Buddhi wants to decipher this relationship for rays, which hasn't yet been described using GOLT. She's hoping that this way she can raise awareness about how rays will be affected in our changing world.



ALICIA RODRÍGUEZ JUNCÁ



PHOTO ID OF MANTA AND DEVIL RAYS OF THE CANARY ISLANDS

Manta Catalog Project

CANARY ISLANDS | RAYS & SKATES

Alicia is using community science and traditional ecological knowledge to gather information about the presence of mobulid rays in the Canary Islands. She also hopes to establish the first regional photo-ID catalogue for the Chilean devil ray and the giant manta ray. Alicia wants to know which mobulid species occur in Canarian waters and when they frequent the area. Do some stay year-round? Do they observe seasonal patterns? And how are their populations connected to other regions of the Atlantic Ocean? She will use the information she gathers to increase public knowledge and local government support for the conservation and management of the rays.



ARIADNA ROJAS CORZO



NURSERIES FOR FLORIDA'S PROTECTED WHITESPOTTED EAGLE RAY

Harbor Branch Oceanographic Institute

USA | WHITESPOTTED EAGLE RAY

In a first project of its kind for North America, Adriana wants to identify hotspot areas in the Indian River Lagoon and Sarasota Bay, Florida, where young whitespotted eagle rays can be protected until old enough to disperse as adults and thus help to recover their populations. To do this, she will be investigating their fine-scale movement patterns in these areas: how, when and where are they using different regions? This will give Adriana an idea of core-use areas to complement what we know about adult whitespotted eagle rays.



IMRAN SAMAD



ESSENTIAL HABITATS AND SHARK FISHERIES

Centre for Ecological Sciences (CES), Indian Institute of Science (IISc)

INDIA | RAYS & SKATES, SHARKS

India is the world's second-largest fishing nation. But without sufficient information about how the more than 120 species of sharks and rays are distributed around the country, the most effective management will always be elusive. Imran wants to understand where sharks and rays live along the coast of Visakhapatnam. He also wants to understand what fishing gear is used and how fisheries overlap with sharks and rays. This can all open a dialogue between fishers (more than 5,000 vessels operate in one of India's largest fishing fleets) and scientists about the conservation and management of threatened species.



CITRA SEPTIANI



THE SUSTAINABILITY OF SHARK FISHERIES IN INDONESIA

YAPEKA

INDONESIA | SHARKS

Citra is delving into the intricacies of how the small-scale shark fishery operates in Batuwingkung Village, Indonesia. As one of the world's largest shark-fishing nations, Indonesia faces serious shark and ray conservation challenges. Citra will evaluate the vulnerability of targeted shark species and look to designing a sustainable management plan where local communities are particularly dependent on shark fisheries in the Batuwingkung Village. For this to work on a larger scale, Citra will help to develop conservation efforts and sustainable fishery management throughout the Sangihe Islands.



RAFID SHIDQI



PUBLIC OUTREACH PROGRAMMES TO CONSERVE THRESHER SHARKS

Thresher Shark Indonesia (TSI)
INDONESIA | PELAGIC THRESHER SHARK

Indonesia's Ay and Rhun Islands Marine Protected Area was declared in 2021, but three species of thresher shark were not listed as conservation targets. With no management plan that addresses the fisheries and no national or local policies to address thresher shark fisheries in particular, there is much left to do to manage the species' populations. Rafid is collecting the first information about these fisheries with a view to developing the conservation and management strategies needed to effectively address thresher shark populations in the Ay and Rhun Islands Marine Protected Area.



CAROLINA VARGAS-CARO



EMPOWERING FISHERS AND ANGLERS TO SAVE CHILEAN HOUNDSHARKS

Universidad de Antofagasta (UA)
CHILE | CHILEAN HOUNDSHARKS

All three of the endemic [occurring nowhere else in the world] houndsharks found in southern Peru and northern Chile are Critically Endangered. Responsible fishing could reduce their short-term mortality, but currently there are no management measures for these species. Carolina wants to link scientists and fishers so that they can work together for sustainable houndshark fisheries. She wants to ensure that the fisheries' management takes the conservation of these species into account and to create awareness among both fishers and the public about the ecological role of these sharks.

PROJECT LEADERS
NEW KEYSTONE PROJECTS



CYNTHIA AWRUCH



THE CASE OF THE DISAPPEARING MAUGEAN SKATE

Institute for Marine and Antarctic Studies (IMAS),
University of Tasmania

AUSTRALIA | MAUGEAN SKATE

Macquarie Harbour in Tasmania is the last stronghold of the Endangered Maugean skate, the only chondrichthyan on Australia's list of top 100 priority conservation species. Cynthia has been monitoring the skate's population since 2014 and has observed its decline and a lack of new juveniles. Her hunch is that reproductive failure is to blame, most likely the result of pollutants in the highly impacted harbour, which has been subjected to mine dewatering, hydro-electricity production and, most recently, salmon aquaculture. Cynthia is compiling information on Maugean skate reproduction to inform a species recovery plan.



KIM BASSOS-HULL & ATLANTINE BOGGIO-PASQUA



ON A MISSION FOR MISSING INFORMATION ABOUT 'MINI MANTAS' IN THE GULF OF MEXICO

Mote Marine Laboratory

USA | WEST ATLANTIC PYGMY DEVIL RAY

Kim and Atlantine are filling in the missing information for one of the five Endangered devil ray species that call the Atlantic Ocean home. The pygmy devil ray is declining throughout its range, but little is known about its biology and ecology that can help conserve it. The two researchers are investigating how many populations of pygmy devil ray exist in the Gulf of Mexico and the Caribbean Sea, and if they are connected. They want to know about the ray's diet, its place in the food web and its movement patterns. All this information will also help raise awareness about this vulnerable devil ray.



RAMÓN BONFIL



FINDING IMPORTANT SHARK AND RAYS AREAS (ISRAS) IN MEXICO

El Colegio de la Frontera Sur

MEXICO | SHARK AND RAYS

Ramón is combining modern (environmental DNA, BRUVs and UAVs) and traditional methods to search for sharks and rays in two coastal nursery areas in Mexico. He wants to find essential shark areas on the Mexican Caribbean coast that can feed into the IUCN's Important Shark and Rays Areas (ISRAs) process, putting key habitats on the map with the information needed to protect them. To do so, he's reconstructing the past use of these coastal nurseries and comparing how sharks are using them now. Then he can see what's changed, and decipher why that could be vital information to champion the restoration of Mexico's shark nurseries.



PATRICIA CHARVET & VINCENTE FARIA



LARGETOOTH SAWFISH ON THE AMAZONIAN COAST

Federal University of Ceará (EvoVe Lab and PPGSis)

BRAZIL | LARGETOOTH SAWFISH

Potentially one of the few remaining strongholds of the largetooth sawfish, the sandbanks, mangroves and murky waters along the coastline influenced by the Amazon River is where Patricia is searching for this Critically Endangered species. Although it is still caught and traded in this region, despite conservation restrictions, the largetooth sawfish is feared by fishers and poorly understood. Patricia and Vincente are hope to change that: they will use environmental DNA to confirm its presence, engage with fishers through workshops and meetings, increase public awareness of it and train law enforcement officers to combat the illegal trade with the latest science.



DANNY COPELAND



STORYTELLING THROUGH FILM TO AID ANGEL SHARK CONSERVATION

Guardian Angels Film

UNITED KINGDOM | MEDITERRANEAN ANGEL SHARKS

Danny believes in the power of storytelling to shine a light on angel sharks, to start conversations, unlock historical knowledge archived in the coastal communities of the Mediterranean and East Atlantic region and even impact management decisions. He wants to contribute to the conservation of the three angel shark species (of 23 species globally) that are found in the Mediterranean and East Atlantic by telling their story and that of those working to protect them. Danny will be making a long-form film and driving an impact campaign that calls audiences to conservation action.



DAVE EBERT



BRINGING TO LIGHT THE 'LOST SHARKS'

Moss Landing Marine Laboratories

WORLDWIDE | SHARKS AND RAYS

With more than a third of sharks and rays threatened with extinction, and three sharks possibly already extinct, we're in a race to document and protect many species before they're gone. Dave's interest lies in the details: while many charismatic species might be protected, there are a great many more 'lost sharks' that we know almost nothing about and they may disappear before we even recognise them. His project will scour fish markets and landing sites to identify sharks and rays, run training workshops and conduct dedicated searches for 'lost sharks' last seen decades ago. Dave plans to document the journey and produce a short documentary to promote awareness about the lost species.



BRITTANY FINUCCI



GULPER SHARKS AND LONGLINE FISHERIES

National Institute of Water and Atmospheric Research

NEW ZEALAND | GULPER SHARKS

Brittany is using a combination of methods to understand the vulnerability of gulper sharks to longline fisheries in New Zealand's South Pacific Ocean. She will be satellite-tagging gulper sharks and looking at post-release mortality (how likely are gulper sharks to survive being caught and released in fisheries?). She'll also explore how gulper sharks respond to the stress of being caught, try to confirm a nursery ground, and describe gulper shark movement patterns as they overlap with fisheries activities. All this information will feed into improved management for these vulnerable deep-sea sharks.



TRISTAN GUTTRIDGE



INSPIRING COMMUNITIES TO PROTECT SAWFISH

Saving The Blue

BAHAMAS | SMALLTOOTH SAWFISH

Outside the USA, The Bahamas is the only place where Critically Endangered smalltooth sawfish can reliably be found. Tristan wants to ensure that protection measures in The Bahamas are understood and enforced as far as sawfish are concerned to close the current gap between policy and the people. He'll be using aerial surveys, sonar and BRUVs, combined with interviews that draw on local knowledge, to identify essential sawfish habitats that need protection. Engaging with the community through workshops and by training students and meeting with government, Tristan intends to advocate for smalltooth sawfish protection throughout The Bahamas' territorial waters.



JENS HEGG



TRACKING TIME THROUGH TEETH

Gonzaga University

USA | LARGETOOTH SAWFISH

Jens is unlocking information about how and where largetooth sawfish spend their lives through the chemistry of their teeth. The long, toothed rostrum for which sawfish are named might hold some answers about where a sawfish grew up, where it moved, how fast it grew during each period of life, and how its place in the food web changed as it grew. That's because rostral teeth lay down chemical traces throughout a sawfish's life. The low numbers of living sawfish mean that Jens is looking at ways to use historical specimens in museums to develop insight into the fine details of the lives of sawfish.



STEVEN KESSEL & KEVIN FELDHEIM



DESCRIBING THE POPULATION CONNECTIVITY OF AN ENDANGERED SPECIES

John G. Shedd Aquarium

USA | CARIBBEAN REEF SHARKS

Steven is using genetic techniques to understand how Caribbean reef shark populations are connected across the extent of their range. Populations of this Endangered shark are in decline generally, but where they are managed and there is effective protection, their numbers are stable. With the integration of the correct information, Steven is convinced that we can give Caribbean reef sharks a better shot at recovery and population stabilisation. He and his co-investigator, Kevin Feldheim, will also explore any barriers to connectivity, looking to the future recruitment and recovery of these sharks.



JOHN MOHAN



SHARK LIFE HISTORIES FROM CARTILAGE CHEMISTRY

University of New England (UNE)

USA | RAYS & SKATES, SHARKS

John is looking at the histories that are laid down in the cartilage of shark skeletons throughout their lives, exploring chemical tagging as an alternative means of understanding the details of sharks' life histories. While we use acoustic, satellite and physical tagging to understand how sharks move and what they do, natural chemical tagging might provide a complementary or alternative method that overcomes some challenges. He will be using spiny dogfish and thorny skates as model species to validate this novel technique.



JILLIAN MORRIS



CREATING ACCESS TO SCIENCE AND EDUCATION

Sharks4Kids

TURKS AND CAICOS | JUVENILE LEMON SHARKS

Jillian is catalysing a community-driven shark conservation programme in Turks and Caicos. She is combining research and outreach to engage young locals in the conservation of sharks and their mangrove habitats. To understand the habitat use and movement patterns of young lemon sharks, Jillian will train local young adults to assist with the shark-tagging programme. High school students will be brought in to participate, and schools will be equipped with activities and in-person lessons. A curriculum for all the schools is part of Jillian's hope to inspire a committed cohort of new ocean stewards who will outlast her programme.



RACHEL NEWSOME



REEF MANTA RAY BEHAVIOUR

Murdoch University

SEYCHELLES | REEF MANTA RAYS

Questions of how climate change, human disturbances and habitat alterations might affect how reef manta rays use their coral reef homes can only be answered if we understand the intricacies of how they live now. Rachel is looking to answer those questions using novel biologging technology, devising methods of attaching the devices safely onto wild reef mantas and then tracking the animals' time-energy budgets. She hopes her information about how, when and where reef manta rays are spending their time will aid future risk assessments for them.



KYLE NEWTON



OFFSHORE WIND ELECTROMAGNETIC FIELDS

Oregon Coast Aquarium

USA | SHARKS & RAYS

In a world where mitigating climate change is critical, the US development of offshore wind energy infrastructure along its coastline could be an important step. But what are its consequences? The sensitivity of sharks and rays to electrical and magnetic fields allows them to detect the bio-electric fields emitted by their prey and the geomagnetic field of the earth. Kyle wants to know how the wind energy infrastructure will affect these super senses and impact the sharks' and rays' movements, distribution and choice of remaining coastal habitats. He'll be tagging sharks and using lab-based behaviour models to ultimately understand how sharks will respond to the development of the infrastructure.



SOPHIE PRENDERGAST



SICKLEFIN DEVIL RAY MOVEMENTS

Centro de Investigação em Biodiversidade e Recursos Genéticos (CIBIO)

PORTUGAL | SICKLEFIN DEVIL RAYS

With very little information available about Endangered sicklefin devil rays, their seasonal aggregations at sea mounts in the Azores give Sophie an opportunity to learn more about their lives. She will be collecting satellite-tracking data that show how they move in the Azores' exclusive economic zone. The information she collects will be used to develop maps of how the rays are using the zone and to identify essential areas that multiple species use. With this information at hand, Sophie hopes her work can contribute to a network of marine protected areas.



ALICE ROGERS



CLIMATE CHANGE AT THE END OF THE EARTH: SEVENGILL SHARKS IN FIORDLAND

Victoria University of Wellington

NEW ZEALAND | BROADNOSE SEVENGILL SHARKS

Alice is asking critical questions about how a changing climate and more frequent extreme weather events are going to affect sevengill sharks in Fiordland, New Zealand. Will their movement patterns differ? Might they escape to deeper waters to avoid heat stress in the shallows? Does their behaviour change in the short term, when floods hit or droughts strike? Alice wants to know how these events affect sharks even in the most remote corners of the planet, seemingly far removed from the realities of climate change.



CYRUS RUMISHA



BUILDING LOCAL COMMUNITY CAPACITY

Sokoine University of Agriculture

TANZANIA | RAYS & SKATES

With the increasing incidence of illegal fishing along the East African coast, Cyrus is determined to turn the tide for threatened mobulid ray species. He will engage with local communities and build capacity for them to identify and protect these threatened rays. He ultimately hopes to improve law enforcement (East Africa has banned the export of these vulnerable mobulids), especially where they are still exploited in local markets due to the low capacity of enforcement officials to identify which species are being traded. By working in collaboration on these issues, Cyrus hopes to aid the informed expansion of marine protected areas.



ISMET SAYGU



PROTECTING GUITARFISH HOTSPOTS

Cukurova University

TURKEY | RAYS & SKATES

With nets that scrape the sea floor, demersal trawling can have a hugely detrimental impact on threatened guitarfish populations. Ismet is on a mission to discover hotspots in the eastern Mediterranean where guitarfish can be protected from trawling: areas that can be closed or where seasonal closures can protect these rays during their most vulnerable stages. He wants to combine survey data with fishers' knowledge to generate innovative conservation solutions and increase public awareness.



ISSAH SEIDU



CONSERVATION STRATEGIES FOR SHARK-LIKE RAYS IN GHANA

AquaLife Conservancy

GHANA | SHARKS & RAYS

Issah is gathering as much information as he can about sharks and rays along Ghana's coast. He hopes to build capacity for 10 local volunteers to support the long-term collection of shark and ray data in the country, and will pilot alternative livelihood options with fishers. Using data on the ecology, catch composition, trade dynamics and socio-economics of sharks and rays, Issah will help to devise conservation strategies that focus on guitarfish and shark-like rays.



MICHELLE SOEKOE



EAGLE RAY MOVEMENT BEHAVIOUR AND POPULATION CONNECTIVITY

Reel Science Co.

SOUTH AFRICA | EAGLE RAY

There are still many questions about the Critically Endangered ray that frequents South Africa's coastline. Foremost among them: is this the common eagle ray, or is it something previously undescribed? Michelle is using a combination of techniques to find out whether the eagle rays of the north-eastern Atlantic Ocean are the same species as those in South Africa. She will determine the connectivity between populations along the southern African coastline and use acoustic telemetry to track their residency patterns, identifying habitats that are critical to their survival.



BRETT SWEZEY



METHODS TO REDUCE SHARK STRESS

Shark Biology & Fisheries Lab, Texas A&M University, Galveston

USA | SHARKS

Knowing how big predators feed is key to managing their populations properly. But sampling where sharks fit into the food web can often be logistically challenging, financially limiting and sometimes invasive. Brett is exploring a technique called dried blood spot sampling as a novel, minimally invasive method to discover how sharks forage. Using scalloped hammerhead, silky and sandbar sharks as model species, he will be comparing the effectiveness of the method used on shark species for conservation science.



JOHN SWENSON



WHITESPOTTED EAGLE RAY ABUNDANCE

University of Massachusetts

USA | RAYS

John is developing new ways to count endangered whitespotted eagle rays in the eastern Gulf of Mexico. Called close-kin mark-recapture, the method combines the latest in genomics and statistics to assess shark and ray populations. Once refined, it may allow us to understand the scale of whitespotted eagle ray population declines.

PROJECT LEADERS
CONTINUATION KEYSTONE PROJECTS



KEVIN WENG & WEI-CHUAN CHIANG



SPATIAL ECOLOGY OF PACIFIC GUITARFISHES

Virginia Institute of Marine Science, College of William & Mary

TAIWAN | RAYS & SKATES

Kevin and Wei-Chuan know that information about the critical habitats used by highly endangered wedgefish and guitarfish species is needed in order to protect them. In Taiwan, in spite of these animals' vulnerable conservation status, fisheries still catch them unintentionally and are legally allowed to retain them. This can be changed, but only with the right information. The team is developing satellite-tagging techniques to track these shark-like rays. This will help them understand the rays' movement patterns and behaviour, and combined with genetic and ultrasound information, their work can feed into better management and protection for them.



HOLLIE BOOTH



SOLUTIONS FOR SHARK FISHERIES IN A SURFERS' PARADISE

University of Oxford

INDONESIA | RAYS & SKATES, SHARKS

Hollie is investigating how marine tourism can contribute to conservation in the global diving treasure that is Indonesia. Nestled in the heart of the 'Coral Triangle', Indonesia is an archipelago of contrasts: it is both a global biodiversity hotspot and the world's largest shark-fishing nation. By focusing on the tourism hotspots of Kuta and the fishing communities of Tanjung Luar and Aceh Jaya, Hollie is searching for ways to reduce the threats facing sharks in fisheries.



ANDREW CHIN



SEARCHING FOR THE RIVER SHARKS AND RAYS OF BORNEO

James Cook University

BORNEO | RAYS & SKATES, SHARKS

Andrew and field researcher Michael Grant will be scouring rivers, local fish markets and landing sites to increase scientific attention on the threatened river sharks and rays of Borneo. Before they go searching for sharks, his team are starting with people: developing relationships with local collaborating Hasanuddin University, and contacting fisheries officers and fishers to collate information on sightings and record data. Their expedition will catch, measure and sample river sharks, as well as record environmental data to assess what habitats these animals prefer. In so doing, this collaborative team will shed new light on this biodiversity hotspot near the heart of the 'Coral Triangle'.



LEE CROCKETT



SHARK CONSERVATION FUND

Shark Conservation Fund

USA | SHARKS

The Shark Conservation Fund (SCF) distributes grants, aiming to end the global overexploitation of sharks and rays. Using sharks and rays as flagship species, the fund's mission is to protect the health of the oceans by maintaining their function. Four key objectives underpin a strategy to achieve systematic change in shark and ray management: protecting 100 vital shark and ray areas by 2030; regulating international trade in sharks and rays; protecting the most endangered species; and combating unsustainable fishing practices. Through its philanthropic collaborations, the SCF wants to prevent species extinctions, reverse population declines and restore population numbers by means of policy, outreach, advocacy, science and monitoring.



CRAIG FOSTER & JANNES LANDSCHOFF



1001 SEAFOREST SPECIES

Sea Change Project

SOUTH AFRICA | GREAT AFRICAN SEAFOREST

Craig and Jannes are diving into the Great African Seaforest in South Africa to bring to shore 1001 stories of the species that live there. Combining marine biological research with the art of underwater tracking, nature documentary-making and storytelling, the pair from the Sea Change Project hope to build a biodiversity dataset from the region that will grow and ultimately nurture a new appreciation for the fragility and wonder of nature.



JASMIN GRAHAM



GILL GUARDIANS: AN ELASMOBRANCH CONSERVATION AND EDUCATION HUB

Minorities in Shark Sciences

WORLDWIDE | SHARKS

Jasmin and her team create content to teach the general public about elasmobranchs (sharks, skates and rays), the threats they face and current conservation efforts to protect them. Gill Guardians is a freely available online hub that connects people globally to engage with elasmobranch science and conservation. They offer video lessons, activities and quizzes. They also host live virtual seminars to bridge the gap between scientists and the public and to grow a new generation of conservation-minded shark advocates.



TOM HART



DISENTANGLING THE DRIVERS OF ANTARCTIC PENINSULA PENGUIN COLONY DECLINES

University of Oxford

ANTARCTICA | BIRDS

Tom has a once-in-a-lifetime opportunity to tease apart the impacts of human visitation, climate change and fishing on Adélie, gentoo and chinstrap penguins. Using drone footage, camera data and faecal samples collected in 2020/21 and into 2022, he’s monitoring Antarctica in years with minimal human footprint due to the Covid-19 pandemic. Tom wants to know whether rising sea temperatures, increasing krill fishing or a growing tourism presence is driving declines of Antarctic Peninsula penguins. By comparing 10 years’ of monitoring data to these data, he hopes to use his findings to inform policy decisions to conserve the Antarctic Peninsula’s penguin colonies.



ANSHENA JOHNSON



BUILDING FUTURE CONSERVATION LEADERS IN THE BAHAMAS

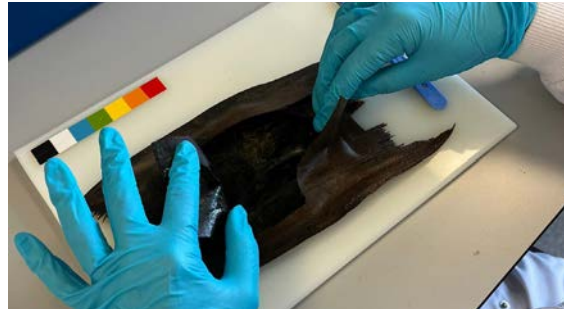
Cape Eleuthera Institute

BAHAMAS | SHARKS AND RAYS

Building a generation of critical thinkers and fostering a sense of connection are what Anshena’s work at the Cape Eleuthera Island School in The Bahamas is all about. By challenging children to seek out the answers to their questions themselves and enabling them to visit important marine ecosystems, Anshena is encouraging new advocates for the environment and empowering them to make changes in their world.



CATHERINE JONES



A GENETIC TOOL TO HELP MONITOR SHARKS AND SKATES IN THE NORTH-EASTERN ATLANTIC

University of Aberdeen

SCOTLAND | RAYS & SKATES, SHARKS

Catherine is intent on helping better monitor flapper skates and spurdogs in the north-eastern Atlantic. To do so, she is developing a tool that can use DNA from egg cases, skin mucus and historical samples to analyse the diversity, kinship, connectivity and adaptations of these species. She and her team are identifying a subset of the most informative genetic markers for each species, which will help inform conservation strategies and MPA management for both species in Scottish seas.



KELLY KINGON & DAVID PORTNOY



COMMUNITY-SUPPORTED CONSERVATION GOALS FOR SCALLOPED HAMMERHEAD

University of Trinidad and Tobago, Texas A&M University

TRINIDAD | SHARKS

Kelly and David are hoping to identify areas that hammerhead shark pups prefer and possibly use as nurseries so that they can help develop management plans to protect these havens. Young scalloped hammerhead sharks are caught in alarming numbers at certain times of the year off the Caribbean island of Trinidad, where murky waters mean lots of nutrients and abundant marine life. The team will spend their time catching sharks to age, sex, measure and tag them before taking a genetic sample and releasing them.



JEREMY KISZKA



THE IMPORTANCE OF SEYCHELLES FOR BLUE WHALES AND OTHER WHALES AND DOLPHINS

Florida International University

SEYCHELLES | MARINE MAMMALS

Jeremy wants to understand when blue whales and other whales and dolphins visit Seychelles, and how many visit when they do. He investigates which factors, such as ocean currents and noise pollution, affect their presence and behaviour in these waters. To do this, he spends hours observing whales and dolphins from a boat, documenting their behaviour, where they move and what they do. He also uses their calls to determine when they arrive, whether they’re feeding or mating, and where they come from. This information can help identify new behaviours and important areas that need protection.



PETER KYNE



THE CLOWN WEDGEFISH: NO LAUGHING MATTER

Charles Darwin University

INDONESIA | SHARKS

Peter credits the recent location of the rare and relatively unknown clown wedgefish to searching social media posts for wedgefish catches. But his focus now is ground-truthing where this species occurs in the wild and what habitat it uses. For this he is engaging with local fishers around the Riau Islands in Indonesia. Using local knowledge and participatory mapping, fishers will guide Peter and his team to where to collect environmental DNA (eDNA), a relatively new and rapidly evolving tool that uses genetic techniques to search for the DNA of the target species – in this case, the clown wedgefish.



JEANNE MORTIMER



COMMUNITY MONITORING OF NESTING SEA TURTLES AT D'ARROS ISLAND AND ST JOSEPH ATOLL, SEYCHELLES

SOSF D'Arros Research Centre

D'ARROS ISLAND AND ST JOSEPH ATOLL, SEYCHELLES | TURTLES

The beaches of D'Arros Island and St Joseph Atoll are very important places for female sea turtles to come ashore and lay their eggs. Jeanne is training Seychellois monitors to observe nesting turtles and collect data about them.



EEN IRAWAN PUTRA



'RHINO RAY' CONSERVATION IN INDONESIA

Rekam Jejak Alam Nusantara Foundation; University of Aberdeen

INDONESIA | RAYS & SKATES

Een is the executive director of the Rekam Nusantara Foundation in Indonesia, where he works with a variety of partners and stakeholders. His key concern lies in building local support for 'rhino ray' conservation and management in the north Java Sea. Giant guitarfishes and wedgefishes (collectively dubbed rhino rays for their pointed snouts and Endangered status) are some of the most threatened species in the ocean. Through fisheries and marine programmes, Een hopes to continue to work with the Department of Marine Affairs and Fisheries of Central Java, and Diponegoro University, to find urgent solutions.



NADIA RUBIO



LINKING LOCAL KNOWLEDGE AND LOCAL HEARTS TO SAVE THE SHARKS OF HOLBOX ISLAND

Mar Sustentable Ciencia y Conservación

MEXICO | SHARKS

Nadia learns about life in the sea from those who spend their lives around the sea. Collecting Local Ecological Knowledge (LEK) about sharks, sawfish, manatees and sea turtles, she connects this information with spatial data to understand Mexico's marine biodiversity. Nadia focuses on Holbox Island off the Yucatan Peninsula in Quintana Roo. The island forms a coastal lagoon surrounded by mangroves (thought to be shark breeding grounds) with its seafloor covered by sea grasses. Holbox is a treasure trove of marine life that Nadia is intent on helping to manage in the wake of rapid development.



PELAYO SALINAS DE LEÓN



PROTECTING THE SHARKIEST PLACE ON EARTH

The Darwin and Wolf Conservation Fund

GALÁPAGOS | SHARKS

Pelayo is on a mission to keep the Galápagos, in his words: 'the sharkiest place on the planet'. Leveraging what he's learned from baseline surveys, and in collaboration with Professor Mahmood Shivji at the Save Our Seas Shark Research Center, his research is now assessing the migratory routes and population genetics of pregnant scalloped hammerhead sharks across the Tropical Eastern Pacific. He is also investigating the movement ecology of female silky sharks in relation to regional fishing fleets around the Galápagos Marine Reserve. Pelayo continues to advise on shark conservation policy in the region and heighten awareness of its rich marine heritage.



ARISTIDE TAKOUKAM KAMLA



COMBINING COMMUNITY AND GENETICS FOR CONSERVATION IN CAMEROON

African Marine Mammal Conservation Organization

CAMEROON | RAYS & SKATES, SHARKS

Aristide created a citizen science platform and mobile app for fishers across Cameroon's 400-kilometre (250-mile) coastline to record sightings of sharks, rays and marine life. These photos are uploaded to iNaturalist where they are identified and will serve to create Cameroon's first elasmobranch atlas. Together with his team, Aristide ensures data are being uploaded, visits fish landing sites to assess bycatch and measure sharks, and checks beaches for strandings and sea turtle nests. He collects tissue samples of threatened species that can give more insights into the diversity, population size and structure of vulnerable sharks.



TERENCE VEL



ENVIRONMENTAL EDUCATION IN SEYCHELLES

University of Seychelles

SEYCHELLES | TERRESTRIAL AND MARINE CONSERVATION

Terence has been running the Wildlife Clubs of Seychelles and working with the Unisey Centre for Environment and Education (UCEE) for many years. He is a long-standing recipient of a Save Our Seas Foundation grant. His work has been to make the wonders of the natural world, and the incredible heritage of Seychelles, available to children and young adults. By allowing children to learn and immerse themselves in nature, Terence hopes to guide them to the best environmental solutions and help older youth on a path to study the natural world at university.

OCEAN STORYTELLING WRITING GRANT

The Ocean Storytelling Writing Grant builds on the legacy of the Photography Grant and is dedicated to supporting a diverse generation of emerging conservation storytellers. Three successful grantees received a US\$2000 cash prize and a paid assignment to cover a conservation story under the mentorship of Dr Helen Scales (marine biologist and bestselling author), Swati Thiyagarajan (conservation journalist at the Sea Change Project) and Dr Lauren De Vos (SOSF science writer). The aim is to support early-career and emerging storytellers and encourage new voices with fresh perspectives and writing approaches.



DIMUTHU ATTANAYAKE

Dimuthu, from Sri Lanka, wants to bring important conservation issues to the attention of the public and the policy makers. She believes that journalism is a powerful tool to advocate for change.



WENZEL PINTO

Wenzel, from India, weaves scientific studies into a story format and draws from his personal experiences to make scientific knowledge more digestible and enjoyable for everyday readers who had no previous interest in conservation.



FANNI SZAKAL

Fanni, from Hungary, switched careers from marine biology research to science writing because she was impatient to make a difference. She is interested in showing how the fate of nature is intertwined with ours.

SPONSORSHIPS 2023



Opposite: The winning image from photographer Alvaro Herrero Lopez Beltra in the SOSF-sponsored Underwater Photographer of the Year Award's Marine Conservation category.

Above: The SOSF 20th anniversary was full of public engagements and key sponsorships. Here, CEO Dr James Lea presents an award at Jackson Wild film festival.

The communications team kept busy throughout 2023, balancing an array of events and features linked to the 20th anniversary celebrations of the Save Our Seas Foundation (SOSF), with new efforts being made to forge partnerships and ventures, and existing communication relationships being maintained. The result was a year peppered with diversity: of audiences, ideas and media channels.

In-person storytelling kicked off with the Wavescape Festival in South Africa in March 2023. The SOSF was proud to present Slide Night, an evening featuring 10 talks by ocean aficionados from surfers to scientists and environmental activists. The SOSF Shark Education Centre (SOSF-SEC) educators Wade Naude, Justine Swartz and Logan Benjamin joined in, sharing their insights into how best to communicate stories about the sea in a brilliant conversation-style presentation.

The SOSF Distinguished Speaker Series at the Museum of Discovery and Science (MODS) in Fort Lauderdale, Florida, continued to grow in its viewership and popularity, with both an in-person event and online attendance that brought together shark scientists and ocean fanatics from across the planet. Young marine scientists and the emerging generation of ocean conservationists

Right, above: The SOSF hosted the Wavescape Festival's Slide Night, featuring 10 speakers (including the Shark Education Centre's Wade, Logan and Justine) and science writer Lauren De Vos as MC.

Right, below: Each year, the SOSF Distinguished Speaker Series at the Museum of Discovery and Science (MODS) in Fort Lauderdale, Florida, increases in popularity.

Opposite: A record year of tourist arrivals on South Africa's Cape shores meant many new visitors to the SOSF Shark Alley exhibition at the Two Oceans Aquarium.

gathered for the Young Marine Biologists Summit, which the SOSF sponsored. The SOSF's CEO, Dr James Lea, opened online proceedings, and the organisers were thrilled to report that 60% of attendees were in their key target range of 13-18 years old. This was a first summit for more than 80% of the attendees, and all agreed that they would recommend the summit to others. The diversity of this audience is exciting, considering that the SOSF communications objectives include reaching a range of ages, ethnicities, gender identities and countries: more than 60% of the participants were female and 33 countries were represented.

Supporting storytellers remained a focus for the year, with the SOSF sponsoring the Underwater Photographer of the Year Award's Marine Conservation Category. The winning photographer was Alvaro Herrero Lopez Beltra, whose photo of a humpback whale entangled in ropes and buoys was a moving meditation on the challenges ocean inhabitants face as a result of our actions – and our inaction. This award category showcases photography that tells urgent conservation stories and doesn't flinch from challenges, but also shines a light on marine conservation successes. At the Jackson Wild film festival, the SOSF sponsored a discussion session called Changing the Narrative on Living with Animals and presented the award for the category Best People and Nature long-form film. The SOSF communications team were in attendance, with Dr James Lea and Global Communications Manager Jade Schultz presenting a talk on science and storytelling.

The SOSF maintained its education presence in Shark Alley at the Two Oceans Aquarium in Cape Town and the reach of this exhibition found new traction in the bumper crop of tourists that arrived on South African shores in 2023. Thanks to clever design and technological ingenuity, exciting new ways of seeing sharks found a footing on the SOSF's flagship shark education and myth-busting website, World of Sharks. Three-dimensional models of manta rays and white sharks now nestle between hot topics and punchy species profiles, giving website visitors insights into how these animals function.



OUR TEAM

OUR CORE OPERATIONS ARE HANDLED BY A SMALL NUMBER OF PASSIONATE PEOPLE, DEDICATED TO MARINE CONSERVATION AND LOCATED IN VARIOUS OFFICES AROUND THE WORLD.

- 1 **SOSF HEADQUARTERS** | GENEVA | SWITZERLAND
- 2 **SOSF SHARK EDUCATION CENTRE** | KALK BAY | WESTERN CAPE | SOUTH AFRICA
- 3 **SOSF SHARK RESEARCH CENTER** | DANIA BEACH | FORT LAUDERDALE | USA
- 4 **SOSF D'ARROS RESEARCH CENTRE** | D'ARROS | SEYCHELLES
- 5 **SOSF ISLAND SCHOOL** | MAHE | SEYCHELLES





JAMES LEA

CHIEF EXECUTIVE OFFICER

James is the chief executive officer of the Save Our Seas Foundation. He has had a fascination for the marine realm from a young age and it was this that sparked his ambition to explore the oceans. Having been humbled by encounters with various shark species, he became keen to learn as much as he could about their behaviour and ecology.

James gained a first-class Honours degree in biological sciences from the University of Oxford and then volunteered as a shark researcher at the Bimini Biological Field Station. At Bimini he cut his teeth catching, tagging and tracking sharks, and working with them so closely consolidated his passion and further motivated him to fight for marine conservation.

He then moved to work as a research scientist for the Save Our Seas Foundation, before completing a PhD in marine biology at the University of Plymouth in collaboration with the D'Arros Research Centre. His primary research focus was a comprehensive tagging programme tracking almost 200 sharks of seven different species in Seychelles, aiming to determine the factors that drive their movement behaviour and use this knowledge to inform effective conservation strategies. James's research has helped to contribute to the design of marine protected areas and has revealed previously unknown open ocean migrations of tiger and bull sharks, highlighting the challenge of managing shark populations that span ocean basins. He continues his research as part of the Evolutionary Ecology Group at the University of Cambridge.

James fully realises the importance of actively promoting awareness of marine conservation issues, so he is particularly excited to lead the Save Our Seas Foundation team to help ensure that we can live with healthy oceans for generations to come.



SANDRINE GRIFFITHS

GRANT PROGRAMME MANAGER

Sandrine first became passionate about biology and genetics in college, although from an early age she had always felt a strong need to be immersed in nature. Born in Switzerland, she was lucky to spend long vacations by the Mediterranean Sea, savouring the elements and admiring the marine fauna as she tried to follow her father, a free-diver. Later she travelled less often, so the Swiss mountains and Lake Geneva, one of the largest lakes in Western Europe, fed her need for nature.

A biologist by training, Sandrine taught science to teenagers before joining a biotech company where she acquired strong project management skills. After seven years, an opportunity arose that enabled her to set up her own business and open a sailing and nautical sports store on the shore of Lake Geneva. It was this adventure that reminded her how much she wanted to take care of the many aquatic ecosystems and their wildlife that are degraded by human activity. She is passionate about living creatures in all their forms.



STEFAN KUBICKI

IT AND WEB OFFICER

Stefan grew up in North Dakota, about as far away as it's possible to get from the coast in the USA. He first developed a fascination with sharks and the underwater world thanks to nature documentaries and well-worn issues of *National Geographic*. He began his career as an analyst at a UN-based NGO in New York before moving to London, where he worked as a web developer and advisor to several startup companies. He joined the Save Our Seas Foundation in 2010. Aside from his work for the foundation, Stefan is an award-winning filmmaker whose films have screened at festivals around the world.



AURÉLIE GROSPIRON

COMMUNICATIONS STRATEGIST

Born and raised in the French Alps, Aurélie developed a strong connection with the natural elements: mountains, lakes and the ocean. She became an expert skier, sailor and diver, loves adventure and also enjoys contact with people who are passionate about nurturing a vision for a better world. Environmental issues, the legacy for the next generation and educational objectives are what matter to this dynamic woman.

Aurélie graduated from an international business school in Paris in 1992 and went on to work mainly with premium brands such as Rolex, Oakley and Dynastar. Her fields of expertise are public and media relations, sponsoring, advertising and event management.

In April 2019, after a career in the sport and luxury industries, she felt it was time for her to reconnect with her personal aspirations and follow a new professional direction. She joined the Save Our Seas Foundation in Geneva to handle its communications strategy and make the organisation's activities and ambitions better known to the general public. For Aurélie it's a new reality that makes perfect sense, a role that matches her preference for exploration, conservation and innovation.



JADE ROBYN SCHULTZ

CONTENT MANAGER

From a young age when she and her family would go on holiday to nature reserves and the seaside, Jade has felt a very strong connection to the natural world and a great appreciation for its overwhelming beauty. With time however, she realised that this was a view few others shared. Having experienced in particular how little other people know about the wonders of the ocean, she became acutely aware that they know even less about the dangers that the marine realm faces.

With a background in marketing and media experience, Jade understands that the media is extremely powerful when it comes to spreading a message and raising awareness – and, in fact, in today's digital world it is an invaluable conservation tool. She believes that the knowledge and experience that she is able to bring to the Save Our Seas Foundation's Conservation Media Unit, together with the passion and dedication of the other team members, can and will make a positive difference in the mindset of the public – and, ultimately, the health of our oceans.



THOMAS P. PESCHAK

DIRECTOR OF STORYTELLING

Thomas P. Peschak is a National Geographic Photographer, Explorer and Fellow who specialises in documenting both the beauty and the fragility of the world's oceans, islands and coasts. For *National Geographic* Magazine he has produced 10 feature stories that cover various natural history and conservation issues, ranging from manta rays to marine protected areas.

Originally trained as a marine biologist, Thomas embraced photojournalism 15 years ago after realising that his photographs could have greater conservation impact than scientific statistics. He is a founding director of the Manta Trust and a senior fellow of the International League of Conservation Photographers. His images have won 17 Wildlife Photographer of the Year and seven World Press Photo awards. Thomas has supplied the photographs and text for seven books, including *Currents of Contrast*, *Sharks & People* and *Manta: The secret life of devil rays*. He is a popular speaker for National Geographic Live, having presented more than 20 shows in 15 cities on three continents. His official 2015 TED talk, 'Dive into an ocean photographer's world', has been viewed more than one million times.

COMMUNICATIONS



LAUREN DE VOS

SCIENTIFIC WRITER

Lauren has loved wilderness and wildlife since she can remember and it was her curiosity about life on earth that led her to science. As a child, her attentiveness to all life, right down to scooping the ants out of the bathtub before running the water, was probably a giveaway to her family as to her career direction in conservation...

Lauren graduated with a BSc in environmental and geographical science, followed by Honours in zoology and an MSc in conservation biology at the University of Cape Town. She went on to work as a researcher at the university and became an SOSF project leader, leading a project that aimed to introduce BRUVs monitoring to South Africa's marine protected area network and working with local conservation agencies to design methods that could be simply and effectively repeated at low cost around the coast. She then completed her PhD using remote camera methods to assess the biodiversity of South Africa's largest bay. Her career has spanned scientific research, marine education and storytelling through film and writing. She has worked previously for the I AM WATER Foundation, where she is a current trustee, and as a lead marine biologist on the Oceans Alive project in the iSimangaliso Wetland Park, a UNESCO World Heritage Site, for WILDOCEANS, a programme of the WILDTRUST.

As a marine biologist, Lauren has worked in some beautiful places. Her love of nature has guided her career in science and conservation, but through her research she has become increasingly aware of the challenges we face. Her approach has always been to act to secure her hope that we can build a better future. She believes that her writing can help to encourage others to become conscious of their own connections to nature. By translating science into stories, Lauren is acting on her optimism that change is possible.



KELLI WHITEHEAD

SOCIAL MEDIA MANAGER
AND CONTENT MARKETER

Growing up on the west coast of South Africa in a family of sailors set the stage very early in life for Kelli's deep connection to the ocean. As a youngster she travelled to many places around the world, experiencing them through sailing and forming an intense love and respect for the sea. Soon after commencing her studies at the University of Stellenbosch, she began embracing the ocean even more, leaning towards volunteer and education programmes alongside her degree in linguistics.

In 2018 she opened her own international yacht charter agency, hoping to inspire people to travel the world and to experience the magic of the marine world. After shifting focus to her growing passion for marine conservation and finding a deeper understanding of how important online media can be for the conservation of the natural world, Kelli joined the Save Our Seas Foundation's communications team in 2020. She hopes to spark joy and inspiration in the minds of those who engage with the foundation online in a way that brings about a positive change for the plight of our oceans.



JAMY SILVER

VISUAL CONTENT DESIGNER

Jamy grew up a compulsive picker-up of litter and a chronic rescuer of miscellaneous small creatures from various sticky situations. After graduating with a degree in communications, she quickly realised that the default career in advertising wasn't going to be contributing towards anything she valued (in fact, aggressively the opposite). Life is short, so she looked to translate those same skills into a more meaningful direction – conservation and science communication – and hasn't looked back.



FAAIZAH SOUTHGATE

COMMUNICATIONS ASSISTANT

Faaizah's love for nature and conservation began when, as a little girl, she was deeply intrigued by the nature documentaries aired on local television and found her imagination expanding beyond the boundaries of the life she knew. Her affinity for geography throughout her years at school led to her enrolling at the University of Cape Town, where she completed a Bachelor of Social Science with majors in archaeology, anthropology and environmental and geographical science. She also has a certification in adventure-based learning.

As well as assisting the Conservation Media Unit of the Save Our Seas Foundation, Faaizah works at a local NPO, the I AM WATER Foundation. She says, 'I believe in the power of education and communication to lead the change that is necessary in a world of constant change. Now more than ever, it is important to conserve and preserve our natural environment for ourselves and for the generations to come.'



ISLA HODGSON

SCIENCE COMMUNICATOR

Isla grew up with the icy waters of the North Sea as her playground and spent a happy childhood surfing, wild swimming and poking around rock pools. Those early years sparked a lifelong fascination with the underwater world and she has lived by the ocean ever since, swapping the rugged coastlines of northern England for the vibrant wilderness of the Hebrides on Scotland's west coast. Keen to learn as much as possible about life beneath the waves, Isla studied marine science at the University of Aberdeen and gained a Master's degree studying the habitat use of minke whales in Scottish waters. It was during this time that she learned to scuba dive, which opened up a whole new world of ocean exploration. She then went on to complete a PhD, which focused less on the marine life and more on the animals impacting it: humans. She is now an expert in conservation conflicts, environmental governance and conservation social science and has advised Scottish and UK government and international conservation bodies, including WWF and the IUCN.

Isla discovered her passion for science communication as an undergraduate while working for a local aquarium, where she gave talks to the public about the sharks and rays under her care. She later went on to work for the BBC as a researcher and producer and wrote for outlets such as *BBC Wildlife* and *The Naked Scientists*. In 2019 she took a break from academia to work as a guide for Basking Shark Scotland, a job that involved swimming with the second-largest species of shark in the world, collecting data and showcasing the sharks and their habitat to the public. During lockdown she gave several online talks sharing her passion and enthusiasm for basking sharks, which led to a job in science communication with the Save Our Seas Foundation. Isla now considers herself to have the best job in the world: talking about sharks and shark science with the people who know them best and promoting how awesome these animals really are.

SCIENTIFIC COMMITTEE



SARAH FOWLER

SCIENTIFIC ADVISOR

Sarah has a first-class joint Honours degree in zoology and marine zoology from the University College of North Wales, an MSc in conservation from University College London and 30 years of professional experience as a marine biodiversity conservation expert. She has worked in various capacities for government departments, national and international NGOs and a biodiversity consultancy. Having been appointed to the IUCN Shark Specialist Group in 1991, she chaired it for many years and is now its vice-chair for international treaties.

Sarah founded the European Elasmobranch Association and its UK member, the Shark Trust (and is a trustee of the latter). She was appointed Officer of the Order of the British Empire for services to marine conservation in 2004, and a Pew Fellow in Marine Conservation in 2005. She became principal scientist for the Save Our Seas Foundation in 2011.

SCIENTIFIC COMMITTEE



DEAN GRUBBS

SCIENTIFIC ADVISOR

Dr Dean Grubbs is a fish ecologist with interests in the biology of exploited and poorly studied estuarine and marine taxa. Much of his research addresses specific gaps in biological knowledge necessary for the management and conservation of coastal and deep-water sharks and rays. Dean specialises in the use of fishery-independent surveys to study population dynamics and the drivers of distribution patterns of fishes and to facilitate studies of life histories, reproductive biology, trophic ecology and systematics. Dean has also tagged and released more than 10,000 sharks representing over 40 species during the past 25 years. He employs a variety of tagging and telemetry techniques to examine movement, migration and patterns of habitat use and to delineate essential and vulnerable habitats for exploited, threatened or poorly studied species.

Dean is a native of Florida and his early years spent fishing and exploring the waters of the north-eastern Gulf of Mexico led to an early interest in marine biology. He received Bachelor's degrees in marine science and biology from the University of Miami and a doctoral degree in fisheries science from the College of William & Mary's Virginia Institute of Marine Science. Dean was a post-doctoral researcher and faculty member at the Hawaii Institute of Marine Biology before moving to Florida State University (FSU) in 2007. He is a member of the IUCN Shark Specialist Group, the National Oceanographic and Atmospheric Administration (NOAA) Office of Protected Resources' Smalltooth Sawfish Recovery Team and NOAA's SouthEast Data Assessment and Review Advisory Panel for Highly Migratory Species. Dean is currently the associate director of research at the FSU Coastal and Marine Lab, where he mentors graduate and undergraduate students and maintains an active research programme on the ecology of deep-water and coastal fishes. His research has been featured in many television documentaries, including National Geographic TV, National Geographic Wild, Discovery Channel and the US Public Broadcasting System.



ANDREW CHIN

SCIENTIFIC ADVISOR

Dr Andrew Chin is a fisheries scientist whose work focuses on shark and ray biology and ecology, and how the information from this research can be translated into conservation and sustainability. Specifically, Andrew is interested in how fishes use coastal and marine habitats and how patterns of use affect their vulnerability to pressures such as fishing, habitat loss and climate change. His recent research spans the life history and biology of sharks by means of tagging and acoustic telemetry, as well as risk assessment. As an applied scientist, Andrew is also very interested in how fishes, sharks and rays interact with people and how their populations can be managed, as well as in impacts on their populations.

Andrew grew up in South-East Asia but currently lives in Queensland, Australia, where he received his PhD from James Cook University. He has a diverse marine background, having worked as a marine biologist in the tourism industry and as an education officer in a public aquarium. He also spent 10 years working at the Great Barrier Reef Marine Park Authority, the Australian federal agency charged with protecting the Great Barrier Reef. In 2017, Andrew launched SharkSearch Indo-Pacific, an effort that blends formal research, citizen science and public outreach, and aims to develop a scientifically robust shark diversity checklist and conservation account for every country and territory in the Pacific by 2023. He is also one of the founders of the Oceania Chondrichthyan Society and a member of the IUCN Shark Specialist Group.

SOSF SHARK EDUCATION CENTRE KALK BAY | WESTERN CAPE | SOUTH AFRICA



CLOVA MABIN

DIRECTOR

Originally from Scotland, Clova became fascinated by sharks while working as a diving aquarist in an aquarium that housed ragged-tooth sharks. She came to South Africa in 2005 to work with tiger sharks on the east coast before joining the White Shark Trust in Gansbaai as a research assistant. While in South Africa, she became involved in the wildlife film industry, where she learned the basics of communicating science to a wider audience. Keen to further her education, she went on to complete an MSc in conservation biology and then a PhD focusing on the status and management options for marine species that have invaded South African shores. This applied research made her realise how inaccessible most science is to the general public and how this contributes to the many conservation issues we face today.

Clova loves to travel, but when in South Africa she spends her free time outdoors on the water or in the mountains. She is a certified PADI dive master and South African commercial diver. As a volunteer for several organisations that focus on environmental education and the mother of a nature-loving daughter, she enjoys teaching children about ecology and sustainable lifestyle choices. She is passionate about sharing her love and knowledge of the marine environment, as she believes this is the only way we can change our future.



CLAIRE METCALF

FACILITIES ADMINISTRATOR

Raised in various small West Coast fishing and mining towns of South Africa and Namibia, with parents whose free-range approach to parenting meant lots of time outside exploring beaches, Claire is a firm believer in the power of experiential education in moulding future generations to become effective conservationists. Claire joined the Save Our Seas Foundation Shark Education Centre in May 2016 after almost eight years with Liberty Life Financial Services as a franchise business support administrator. With a diploma in administration and legal studies from Montrose Business College in Cape Town, in her role as the facilities administrator she brings a high level of organisation and structure to the dynamic working environment that is the Shark Education Centre. She is enjoying every minute of the varied opportunities this role brings and, in addition to seeing to facilities maintenance and administration, she has become a vital part of the team, joining school groups as they learn about, explore and appreciate the ocean. She has also made it her personal mission to convince the education centre's resident puffadder shysharks to eat their food. With a family that has earned – and continues to earn – its income almost entirely from the sea, Claire has a vested interest in the conservation of the oceans for current and future generations. She believes that she is in exactly the right place to be able to contribute to this.



JUSTINE SWARTZ

EDUCATOR

Justine grew up in the greater Cape Flats area and always loved adventuring with her mom and younger brother, walking from central Cape Town to the beach at Camps Bay to swim. She particularly enjoyed walking past Table Mountain and being able to admire the great rock massif and the beauty of nature around it. In her final year at school she began volunteering at an organisation where she was involved with environmental camps and dragon-boat racing, which proved to be the start of an amazing journey into nature conservation. Looking back on it today, that journey has taken her from terrestrial and freshwater ecosystems to marine conservation. Justine believes in educating young minds, as they are the ones that will bring about change. Above all, she has a love for people and a passion for conserving the natural environment.



KAREN MERRETT

EDUCATION COORDINATOR

For as long as Karen can remember, she has felt her happiest when connecting with the natural world and sharing that excitement with those around her. Born and raised in Cape Town – and still living there – she was privileged to be able to spend time exploring a diverse range of habitats, from mountain peaks to the world below the ocean's surface, and everything in between.

Her interest in environmental education was ignited while she was studying nature conservation and gaining work experience as a student at Blaauwberg Nature Reserve. During this time she discovered how the simple act of sharing her knowledge and excitement was infectious to those around her. After eight years of working across Cape Town in this field, it is safe to say the flame is still burning brightly. Karen continues to be inspired by witnessing over and over again the power of providing safe spaces in which people can develop and strengthen their own relationship with the natural world.

Although Karen has always found the marine environment fascinating and full of wonder, it was only as an adult that she took the plunge to expand her exploration beyond the rocky and sandy shores. Taking up snorkelling as a hobby enabled her to view the treasure trove of life existing beneath the surface through her own lens and to solidify her relationship with the underwater realm.

Karen joined the Save Our Seas Foundation Shark Education Centre team as education coordinator in October 2023.



LOGAN BENJAMIN

TRAINEE EDUCATOR

I come from the Cape Flats, outside Cape Town. Growing up, I didn't have many opportunities to explore. My family and I went to the beach twice a year, so I was always excited when the December holidays came around. I am extremely passionate about the natural world, which I learned about through reading books. I took part in selection camps and was finally chosen to take part in a conservation leadership programme that lasted for seven years. Through this, I learned about South Africa's diverse natural beauty. I also had the opportunity to visit the Two Oceans Aquarium and observe how marine biologists were studying different marine species. From that point forward I decided that I wanted to become one of those people doing the research and educating people about it. I think it's important that we create opportunities for young people by teaching and influencing them and showing them what the natural world is about. By doing that we create a better environment for everyone, whether we're educating them about marine life or simply about easy ways to discard waste responsibly. I think that brings about change in more ways than one.



WADE NAUDE

JUNIOR EDUCATOR

Although I grew up in Paarl, far from the sea, I had a passion for the ocean and studied marine science at the Cape Peninsula University of Technology. There I began to understand more about the marine environment and its species, as well as the benefits people obtain from the ocean. While studying, I spent as much time as possible near the sea, attending beach clean-ups and volunteering at the Southern African Foundation for the Conservation of Coastal Birds (SANCCOB). During my time as an intern at the Save Our Seas Foundation Shark Education Centre I realised that education about marine science is crucial, especially for communities of colour, where I come from. Often when people hear the word 'science', they feel overwhelmed because of the way science is introduced to them. Often, too, they have a misperception about the ocean. If there were ways to simplify the information or make it relatable to communities of colour, it would be easier to get them interested in learning about the ocean. I would like to reconnect these communities to the ocean and nature, and to break the barriers, especially in education, that were created by the apartheid system. With the aim of creating a sense of stewardship, I recently persuaded my community to clean up along the Berg River that flows through Paarl. I am also a dancer, and I believe that dance and other art forms can be used to share messages about environmental awareness.



AFIKILE NDUDE

SENIOR EDUCATOR

Afikile hails from the Eastern Cape but grew up in a small township on the Cape Flats, near Cape Town. Her passion for the environment was ignited by her various activities, such as gardening, working in the fields and even herding animals, while visiting Mthatha in the Eastern Cape. As she became more aware of the differences in climate and landscape between the Eastern Cape and the Western Cape, she began to question many things, which led to geography and natural sciences becoming her favourite subjects in high school. However, her limited exposure to the sea meant that she had few opportunities to learn about the ocean, and it was barely covered in the curriculum. Her dream was to study natural sciences further and qualify as a teacher so that she could answer the questions that her teachers hadn't been able to. After Grade 12, she decided to study environmental sciences to understand more about the environment and what it means to take care of it. She then went on to study for a BSc Honours degree to get better insight into the development of environmental management policy.

After graduation, Afikile's first job was in environmental conservation and education, giving her an opportunity to combine three passions: environment, education and people. The fact that 70% of the earth is ocean and that a large percentage of the population has no connection to it, or even realises its importance, is of great concern, which is why there is a need for education about marine conservation. She never expected to learn about the ocean – or teach others about it – until the opportunity to work for the Save Our Seas Foundation Shark Education Centre presented itself. She can now do her bit by educating people about the sea.



ANTONIQUE DICK

DIGITAL ENGAGEMENT AND SCIENCE COMMUNICATION OFFICER

Antonique grew up in Manenberg, in the Cape Flats area of Cape Town, where she rarely had the opportunity to visit the ocean. She knew to respect it, though, for as beautiful as it is, it can also be a scary place. So she learned to keep her distance. From Grade 7 she started working towards making her dream of studying journalism a reality, and in 2021 she graduated from Rhodes University with an Honours degree in journalism. By this time, however, Antonique realised her path had shifted and instead of being a humanitarian journalist, she wanted to tell stories through filming and editing.

Her first job was in conservation and although she had never imagined advocating for the conservation of the ocean, this is where her passion grew. Learning more about the ocean and having it become more accessible to someone like her shifted her entire mindset. Still aware that the ocean can be scary and that we should always respect it, she realises that, more importantly, we should look after it because it is so much more. It provides for us, protects us and heals us, often without our realising it. Antonique is therefore grateful to be working in conservation and wants to use her newfound knowledge to show people who come from a background similar to hers that this world is ours and we are allowed to take up space in it, whatever our circumstances. To surround oneself with nature is something that everyone should experience. She loves the work she does at the Save Our Seas Foundation Shark Education Centre. In her opinion, education is power, and she is grateful that her path has led her here. She can see change happening and appreciates the opportunity to play a part in it.



LILLIAN NGOTSHANE

HOUSEKEEPER

Lillian was born and raised in the Eastern Cape, South Africa, and attended a rural primary school near Middledrift. The nearest coast was almost two hours away by bus, so the village children would spend their free time playing in and around the local rivers. Lillian was a teenager when she saw the ocean for the first time. After completing secondary school, she started working as a seamstress in a local factory before moving to Cape Town in search of work. In 2015, she became the housekeeper for the SOSF-SEC and was soon a treasured member of the team. She is the hands and heart behind all the food that we prepare for visiting groups of schoolchildren.

When Lillian started working for the SOSF-SEC, she was afraid of sharks and would never venture into the sea. Thanks to her experiences with the organisation and exposure to the marine environment, including some snorkelling, she now not only ventures into the sea without fear, but loves all the sea creatures and wants to make sure that we take care of them all.



MAHMOOD SHIVJI

DIRECTOR

Mahmood is professor of marine science at Nova Southeastern University's (NSU) Oceanographic Center in Florida and a director of the SOSF Shark Research Center. He received his undergraduate degree in biological sciences at Simon Fraser University in Canada, his Master's from the University of California, Santa Barbara, and his PhD from the University of Washington. He has been a faculty member at NSU since 1993 and a director of the SOSF Shark Research Center since 2010.

Mahmood credits his life-long fascination with biology to growing up in Kenya, where he was routinely exposed to African wildlife and undersea environments as a child and teenager. His interests in marine science in particular were boosted when as an undergraduate student he assisted one of his professors with kelp-bed ecology research. That experience led to a career in marine conservation science.

In addition to leading the research and education programmes of the shark research centre, Mahmood directs the Guy Harvey Research Institute, emphasising collaborative projects between the two entities to achieve larger and more impactful research and conservation outcomes. He specialises in integrating laboratory genetics and field work to solve problems pertaining to the management and conservation of sharks and rays, billfishes and coral reef ecosystems.

Mahmood's work consistently receives worldwide attention. His research developing rapid DNA forensic methods to identify shark body parts is being used by US and other national fisheries management agencies to reduce the illegal fishing of threatened species. This work is also on exhibit at the Smithsonian Museum's Sant Ocean Hall in Washington DC, and his team's research discoveries have been widely reported in the national and international media.



ANDREA BERNARD
RESEARCH SCIENTIST

Andrea grew up in Toronto, Canada, and spent many hours sailing on Lake Ontario. From a very young age, she has loved watery environments, dipping her toes into Ontario's Muskoka lakes, Florida's coastal waters, and even a neighbourhood pool. As a high school student, she travelled to Canada's east coast and studied the great tides of the Bay of Fundy as part of a summer marine biology course, cementing her future career path to the study of aquatic science.

Andrea subsequently earned a Bachelor's degree at the University of Guelph, Canada, studying marine and freshwater biology, and after graduating she interned at both the Department of Fisheries and Oceans Canada Great Lakes Laboratory located in Burlington, Ontario, where she studied everything from algae to fish habitat, and at the Mote Marine Laboratory & Aquarium in Florida, where she came face to face with a shark for the first time – and never forgot the experience! She then returned to university and completed a Master's degree at the University of Guelph, investigating the population genetics of lake whitefish, followed by a doctorate at Nova Southeastern University (NSU), where she studied the population genetics of sharks, stingrays and billfishes. She is currently an associate research scientist at NSU and the SOSF Shark Research Center, where she investigates the population dynamics of mainly sharks, with an emphasis on genetics and genomics-based ecology and conservation.



MATTHEW JOHNSON
ASSISTANT PROFESSOR

Matt grew up in the beautiful Black Hills of South Dakota, where he spent his childhood fishing, camping and enjoying all that the woods offer. Coming from a family of fishers and hunters, he spent a lot of time at mountain lakes and brooks and was often distracted by catching frogs, snakes and minnows in the marshes when he should have been monitoring a fishing pole. His childhood dream to study the ocean and its inhabitants came from visits to a small roadside tourist attraction called 'Marine Life Aquarium', as well as from the home marine aquariums he attempted to maintain as a child.

Matt earned an undergraduate degree in information systems but changed career paths later in life to earn his PhD in marine biology and oceanography at Nova Southeastern University (NSU). Currently an assistant professor in the Department of Biological Sciences at NSU, he teaches various graduate and undergraduate courses, many of which focus on the integration of science and technology. He is also a researcher at the SOSF Shark Research Center, where his work involves computational biology as applied to investigating shark movement ecology and connectivity patterns of broadcast spawning marine species.

Matt lives on a small hobby farm in the country, raising chickens, parrots, and poodles. He also enjoys collecting fossils, many of which are relics of North America's Western Interior Seaway.



JEREMY VAUDO
RESEARCH SCIENTIST

Jeremy grew up in coastal southern California exploring tidal pools and taking classes and volunteering at the local aquarium, so the decision to pursue marine biology was made at a very early age. After studying biology for his Bachelor's degree at the University of California, Santa Barbara, he entered the shark research world while earning his MS at California State University, Long Beach, studying the movement patterns of round stingrays. During his PhD at Florida International University he continued his work on rays, investigating the habitat use and foraging ecology of a ray community in Shark Bay, Australia. Since joining Nova Southeastern University as a research scientist in 2013, Jeremy has applied his quantitative ecology skills to the open ocean, studying the movements and habitat use of large pelagic fishes, particularly sharks.



NINA PRUZINSKY
RESEARCH ASSOCIATE

Swimming lessons for two-year-old Nina were essential, as her eagerness to jump into the crashing waves made her family's trips to the beach hazardous. Intrigued by the water and the animals that lived in it, she was constantly trying to find fish and crabs along the water's edge.

A high school field course to Jamaica ignited her passion for studying the ocean and its inhabitants. Following an elective 'Oceans' course at the University of Delaware, Nina changed her undergraduate major from mathematics to environmental sciences, as she realised she was missing the adventure and opportunities for inquiry that the marine science courses offered. She also knew she could utilise her analytical skill set in the science field. Hands-on experiences like the field course in Jamaica, a study trip to the Cayman Islands and an internship researching coral symbiotic dinoflagellates prompted her to earn a Master's degree in marine science at Nova Southeastern University, where she studied the taxonomy, ecology and spatiotemporal distribution dynamics of the early life stages of tuna.

Nina's main interest is in researching poorly studied marine species and communities so that she can provide information to the public and improve conservation and management efforts. After her Master's degree, she worked as a project manager at a multi-institutional consortium researching deep-sea fish distributions. She also led database and sample management for the Aquatic Symbiosis Genomics Project's hub at NSU. Nina now works as a research associate at the SOSF Shark Research Center, managing the laboratory and its databases, developing media for outreach and conducting shark genetics research. A life-long learner, she strives to expand her expertise across a multitude of research areas.



ROBERT BULLOCK
RESEARCH DIRECTOR

Rob can trace his love for science and the marine world back to his youth and to Sir David Attenborough, whose words instilled a curiosity that soon grew into a passion for learning about nature. As an adult, Rob pursued this passion, studying marine and freshwater biology at the University of Hull. As he learned more about the marine realm and its inhabitants, he became particularly interested in the importance of species in healthy ecosystems and the need for science-based conservation. Through his education he discovered the amazing diversity among sharks, the fascinating roles they play in marine systems and the extreme threats they face.

Rob conducted his PhD research at the Bimini Biological Field Station, where he worked as a Principal Investigator and studied the fine-scale behaviour of young lemon sharks using the Bimini Island nursery sites. He then moved on to broaden his skill set as a post-doctoral research associate with the Marine Biodiversity Unit of the International Union for Conservation of Nature (IUCN), assessing extinction risk to marine species. Rob's career thus far has taken him to the intersection of scientific research and conservation action and he is driven to deliver science with tangible conservation outcomes.



HENRIETTE GRIMMEL
PROGRAMME DIRECTOR

Growing up in Germany and Switzerland, where competitive swimming and rowing meant that she spent a lot of time in and on water, Henriette has always had a strong connection to this element. Hiking and camping holidays with her family led to an enduring interest in animals and nature. She first dipped into marine biology while studying in the USA during a high-school exchange year, learning about marine species and snorkelling for the first time in Hawaii.

At university Henriette studied geography and environmental sciences and it took a few more years before she discovered an interest in diving in Lake Zurich and a fascination for sharks. She followed these up with saltwater experiences while volunteering in Mozambique, where she assisted in whale shark research and fish censuses. After further travels and a dive-master internship in Honduras, she went on to complete an Erasmus Mundus Master's in marine biodiversity and conservation, conducting her field study at the Bimini Biological Field Station in The Bahamas. She gained further experience in marine research while working with the Large Marine Vertebrates Research Institute (LAMAVE) in the Philippines, where she helped to monitor a mobulid fishery and assisted in shark research in Tubbataha Reefs Natural Park.

Although it was diving and sharks that got Henriette into marine science, she has always been interested in the complexities of ocean management and how humans interact with the marine world, so she completed a second Erasmus Mundus Master's, this time in maritime spatial planning from the universities of Seville, the Azores and Luav Venice. Sharks and conservation remain close to her heart, but Henriette also has a very strong interest in understanding ocean processes, ecosystem services and how humans use them, and finding a pathway to governing that use in a sustainable manner.



ELLIE MOULINIE
RESEARCH OFFICER

Born and raised in Seychelles, Ellie loves the island life. She comes from a family of fishermen living next to the ocean, so school holidays meant enjoying the sun and sea every day and, as a strong swimmer, especially snorkelling and diving. Her love of animals, nature and the ocean and her desire to visit all 115 islands in Seychelles influenced her to pursue a Bachelor's degree in environmental science at the University of Seychelles. Only after learning how to dive did she realise that she wanted to specialise in marine science and fisheries. As an intern for Global Vision International she learnt about fish and marine invertebrates and their importance, and how to conduct surveys to monitor them. She ventured further into marine research by volunteering with the NGO Green Island Foundation, helping to conduct surveys on islands such as North, Denis and Fregate. In 2018 Ellie joined an Earthwatch team on Curieuse Island, where she participated in its Coral Communities in Seychelles Project.

Always moving her career in conservation forward, Ellie most recently worked with the Seychelles Islands Foundation as a field research officer on Aldabra Atoll, where her tasks consisted of conducting terrestrial surveys on the flora and fauna as well as marine research as part of Aldabra's annual marine monitoring programme. As a young emerging scientist and conservationist, she believes it is her duty and responsibility to do her part to protect global ecosystems and threatened species against anthropogenic stressors and the effects of climate change that are causing the loss of biodiversity.



DILLYS POUPONEAU
RESEARCH OFFICER

Originally from Praslin Island, home of the largest nut in the world (coco de mer), Dillys had some amazing experiences as a member of environmental clubs during her school years and these taught her the importance of protecting biodiversity. They inspired her to pursue a Bachelor's degree in environmental science, specialising in tropical biodiversity conservation, at the University of Seychelles.

As a young environmental conservationist with an interest in all living things and habitat types, Dillys has had the privilege of working on numerous terrestrial and marine projects, ranging from scientific research to environmental education and sustainability projects on several islands in Seychelles. She also has a strong interest in well-preserved biodiverse ecosystems, which she enjoys capturing on video and in photographs that enable her to raise awareness and engage people's interest. She is keen to fill her professional and private life with anything that is fun, artistic, creative, exploratory and adventurous, as long as it is in the wild. Dillys wishes to pursue her studies further and develop the necessary skills required to become a great scientist and nature photographer and videographer.

Her career began at the Vallée de Mai Nature Reserve, where she worked as a field research assistant before undertaking her academic degree. After finishing at university, she was employed as the sustainability manager at a five-star hotel and most recently she worked as the assistant conservation officer with the Island Conservation Society. She worked on Silhouette Island (93% national park and surrounding marine park) and at Aride Island Special Reserve and Marine Protected Area, where she coordinated conservation projects and managed a team of eight.



TERENCE VEL
PROJECT ADVISOR AND EDUCATOR

Before joining University of Seychelles in 2015 as a science laboratory technician and a field lecturer for BSc environmental science students, Terence Vel spent 16 years as a laboratory technician in various secondary schools. Twenty-one years ago he became a founder of Wildlife Clubs of Seychelles and during this time has managed the organisation's projects and coordinated environmental programmes in 40 schools on Mahé, Praslin and La Digue. In 2000 he worked as a technician on a project called 'Avian ecosystems in Seychelles', which was funded by the Global Environment Facility and implemented by the former BirdLife Seychelles. The project involved two distinct phases: in the first, ecological research was carried out on a number of the Seychelles' Inner Islands to investigate their biology and conservation potential; during the second, endemic Seychellois birds were translocated from certain islands to others that were more suitable. In 2008 Terence embarked on studies for a diploma in environmental education and social marketing at the University of Kent's School of Anthropology and Conservation. This led him to The Darwin Initiative Rare Pride Campaign to work on a project called 'Investing in island biodiversity: restoring the Seychelles paradise flycatcher'. The project was based on La Digue Island and aimed to translocate a small population of birds on Denis Island. Terence also conducts outreach programmes that focus on marine education for youth groups from the community.



SHEENA TALMA
SOSF AMBASSADOR AND
ISLAND SCHOOL COORDINATOR

Sheena is a marine biologist and the owner of Talma Consultancy, a marine-based company in Seychelles. She works with the Save Our Seas Foundation coordinating the D'Arros Experience, a camp dedicated to teaching students about the marine and terrestrial worlds. Sheena has a keen interest in learning more about how we use the ocean and the implications of overfishing, marine pollution and climate change in that relationship. She holds a Master's degree in ichthyology from Rhodes University and NRF-SAIAB in South Africa, and she is a National Geographic Explorer and a finalist for the local ocean hero award.



SHERIL DE COMARMOND
EDUCATION AND COMMUNICATIONS COORDINATOR

Sheril grew up in the beautiful Seychelles archipelago. From a young age she felt the need to give back to the planet because human beings take so much from the natural world. Later she chose to venture into the conservation sphere and in the early part of her career she worked as a ranger and a project assistant with different NGOs that were active in both terrestrial and marine conservation in Seychelles. After graduating with a degree in environmental science, Sheril got the opportunity to be part of an educational project called PAREO (The Coral Reef Heritage of the Indian Ocean in Our Hands). Since then she has believed that education is the best way to give back and make a bigger difference, not just for the present generation, but for future generations too. During an interview she once heard, someone said, 'There is so much research and data out there. It is not a lack of information that is an obstacle in conservation, but the limited action taken with the information provided.' This is when she realised that more young scientists should focus not just on their research, but also on finding ways to reach beyond it and strike a balance between what is being discovered and what action is being taken to make use of that knowledge.

Sheril joined the Save Our Seas Foundation as the first full-time education and communications coordinator for Seychelles in 2023 and hopes to teach young Seychellois about the importance of marine life. But most importantly, she wants to encourage young people to engage actively in the protection of fragile species and habitats in Seychelles' exclusive economic zone.



HELENA SIMS
SEYCHELLES AMBASSADOR

Born and raised in Seychelles, Helena has a deep love for the sea. She has always felt drawn to the ocean, and marine biology was what she wanted to do for as long as she can remember. She first went diving on her 10th birthday and by the time she was 18 she was already a dive master.

She has always been an active volunteer for environmental causes in Seychelles and when eco-clubs started up while she was still at school, she became a founding member. In 2002 she won an eco-school award trip to Aldabra. Her dedication and hard work took her to Australia to study marine biology at James Cook University in Townsville, Queensland, and on her return she worked in the research section at the Seychelles National Parks Authority. A few years later she accepted the position of project coordinator at the Green Islands Foundation, a local NGO, before going on to manage a four-year GOS-UNDP-GEF protected areas project.

Helena has more than 10 years of experience in marine biology and conservation and project management. A highlight of her career was being part of the team to finalise the world's first debt-for-nature swap for a marine area. She is also the first woman to be appointed the chairperson of the Seychelles National Parks Authority. Currently she is working full time on an initiative to develop a marine spatial plan for Seychelles' entire exclusive economic zone and to identify 30% of that area to be protected. The plan aims to balance ecological, social and economic objectives to ensure that the ocean and its resources are used sustainably.

The sea is within all Seychellois, believes Helena. It's not only in their blood, it's their life. She has dedicated her career to helping ensure that this way of life is maintained and preserved. An island girl by nature and profession, she feels blessed to be living and working in such a beautiful country. Her heart, she says, beats to the rhythm of the ocean around Seychelles.

ALL PROJECTS FUNDED BY THE SOSF IN 2023

SOSF CENTRES

SOSF D'Arros Research Centre | Bullock & Grimmel

SOSF Shark Education Centre | Mabin

SOSF Shark Research Center | Shivji

SOSF PARTNERS

Bimini Biological Field Station Foundation (BBFSF) | Elasmobranch research, education and conservation in Bimini, Bahamas | Smukall

Manta Trust | A global strategy and action plan for the long-term conservation of mobulid rays | Stevens

North Coast Cetacean Society (NCCS) | A voice for whales | Wray

Shark Spotters | Finding the balance between recreational water-user safety and white shark conservation | Waries

The Acoustic Tracking Array Platform (ATAP) | A nationwide marine science platform | Murray

SPONSORSHIPS

CONFERENCE | European Elasmobranch Association (EEA), October, Norway

CONFERENCE | American Elasmobranch Society (AES), July, Norfolk, USA

CONFERENCE | Symposium - A Tribute to the Life and Works of Jack Musick: Biology and Conservation of Long-Lived Marine Vertebrates

CONFERENCE | The First Seychelles Coastal and Marine Science Symposium, May 2024

CONFERENCE | Student Travel Grant | Oceania Chondrichthyan Society (OCS)

CONFERENCE | The 7th Southern African Shark and Ray Symposium, Umhlanga, South Africa

EVENT | 4x 20th anniversary event for ocean awareness – Geneva, USA, SA, Seychelles

EVENT | Jackson Wild film festival, Jackson Hole, WY, USA

EVENT | Wild Seas photo exhibition with the City of Geneva.

EVENT | Wavescape Surf Film Festival

SPONSORSHIP | Museum of Discovery & Science (MODS) | SOSF Distinguished Speaker Series & Shark Cart

SPONSORSHIP | Two Oceans Aquarium, Cape Town, South Africa

SPONSORSHIP | UPY - Marine Conservation Photographer of the Year

SPONSORSHIP | PangeaSeed Foundation - Sea Walls – awareness murals paintings – South Africa

EDUCATION | Young Marine Biologists Summit

EDUCATION | Capacity Building in SE Asia: Upskilling the people driving shark conservation, Singapore

EDUCATION | *Save Our Seas* magazine #12

EDUCATION | Pippa Ehrlich & Tasmin Vosloo – *Older Than Trees* film

EDUCATION | Mar Sustentable Ciencia y Conservación AC - Holbox Kids Books

SMALL GRANT PROJECTS

ALATI | Connecting local fishers, their histories and the halavi guitarfish

ANTU | On a knife-edge: saving sharpnose guitarfish in the Bay of Bengal

BARBOSA MARTINS | Food security and the future for sharks

BINSTOCK | Same, but different: distinguishing blacktip shark populations in the Gulf of Mexico

CAÑETE | Sharks of the deep in the Sulu Sea

CASTILLO-PÁEZ | Going round in circles: clarifying the distribution of round stingrays in the Mexican Pacific

COULON | Bringing up baby: shark embryos and our warming oceans

DAMES | Can eco-engineering make a man-made ocean fish-friendly?

ESHUN | Protecting the African wedgefish in Ghana

GANDRA | Smooth hammerhead shark nurseries

GARCÍA-CEGARRA | An eye on the eagle rays of northern Chile

GUPTA | The guitarfish of Goa

GUSTIANTO | Raja Ampat epaulette shark

LAVIGNE | Failure to launch: what's happening with Seychelles' turtle and tortoise eggs?

LEIGH | Biomimicry microplastics spiral-valves

LONATI | Underwater research by drone

LOUHICHI | Tunisian shark fisheries

MENDOZA PFENNIG | Searching for sawfish in northern Peru

NAZARETH | Andaman guitarfish nurseries

PATHIRANA | Rising temperatures, shrinking rays?

RODRÍGUEZ JUNCÁ | Photo-ID mobulid rays

ROJAS CORZO | Whitespotted eagle ray tracking

SAMAD | Essential habitats and shark fisheries

SEPTIANI | Indonesian small-scale fisheries

SHIDQI | Rhun Island thresher sharks

VARGAS-CARO | Sustainability for Chilean houndshark fisheries

KEYSTONE PROJECTS | CONTINUATION

BOOTH | Solutions for shark fisheries in a surfers' paradise

CHIN | Searching for the river sharks and rays of Borneo

CROCKETT | Shark research grants

FOSTER & LANDSCHOFF | 1001 Seaforest species

GRAHAM | Gill Guardians: an elasmobranch conservation and education hub

HART | Monitoring Antarctic Peninsula penguins

JOHNSON | Building future conservation leaders in The Bahamas

JONES | A genetic tool to help monitor sharks and skates in the north-eastern Atlantic

KINGON & PORTNOY | Community-supported conservation goals for scalloped hammerhead

KISZKA | The importance of Seychelles for blue whales and other whales and dolphins

KYNE | The clown wedgefish: no laughing matter

MORTIMER | Community monitoring of nesting sea turtles at D'Arros island and St Joseph Atoll, Seychelles

PUTRA | 'Rhino ray' conservation in Indonesia

RUBIO | Linking local knowledge and local hearts to save the sharks of Holbox Island

SALINAS DE LEÓN | Protecting the sharkiest place on earth

TAKOUKAM KAMLA | Combining community and genetics for conservation in Cameroon

VEL | Environmental education in Seychelles

KEYSTONE PROJECTS | NEW

AWRUCH | Missing in Macquarie: the case of the disappearing Maugean skate

BASSOS-HULL & BOGGIO-PASQUA | On a mission for missing information about 'mini mantas' in the Gulf of Mexico

BONFIL | Finding Mexico's critical shark nurseries

CHARVET & FARIA | Conserving largetooth sawfish on the Amazonian coast

COPELAND | Guardian Angels

EBERT | Bringing to light the 'lost sharks'

FINUCCI | Deep trouble? Gulper sharks and longline fisheries in New Zealand

GUTTRIDGE | The Bahamas: a beacon of hope for smalltooth sawfish

HEGG | Tracking time through teeth

KESSEL & FELDHEIM | Caribbean connections

MOHAN | It's elemental: shark life histories from cartilage chemistry

MORRIS | Community shark conservation in Turks and Caicos

NEWSOME | On reef manta time at D'Arros, Seychelles

NEWTON | Making sense of sharks, electromagnetic fields and magnetic senses

PRENDERGAST | Sicklefin devil rays in 3D: how are they using space in the Azores?

ROGERS | Climate change at the end of the earth: sevengill sharks in Fiordland, New Zealand

RUMISHA | Capacity for community conservation in East Africa

SAYGU | Trawling for solutions for effective guitarfish conservation

SEIDU | Guarding sharks in Ghana

SOEKOE | Unearthing the truth about the common eagle ray

SWEEZEY | Methods to reduce shark stress

SWENSON | Counting eagle rays with close-kin mark-recapture

WENG & CHIANG | Tracking shark-like rays in Taiwan

SOSF OCEAN STORYTELLING GRANTS

SOSF Ocean Storytelling Grant Continuation | Photography | Gabriella Angotti-Jones

SOSF Ocean Storytelling Grant | Writing | Dimiuthu Attanayake

SOSF Ocean Storytelling Grant Continuation | Photography | Acacia Johnson

SOSF Ocean Storytelling Grant Continuation | Photography | Shane Gross

SOSF Ocean Storytelling Grant Continuation | Photography | Sarang Naik

SOSF Ocean Storytelling Grant | Writing | Wenzel Pinto

SOSF Ocean Storytelling Grant | Writing | Fanni Daniella Szakal

SPECIAL GRANT

Shark and coral research in Seychelles by Marine Conservation International | Rupert Ormond



Above: The SOSF scientific advisors and centre directors' meeting on D'Arros Island. Back row from left to right: Sarah Fowler, Dean Grubbs, Sandrine Griffiths, Rob Bullock, Clova Mabin, Jade Schultz, James Lea. Front row left to right: Henriette Grimmel, Andrew Chin, Ellie Moulinie.

Opposite: A lemon shark's fin slices the sunset waters off D'Arros Island, the site of the 2023 SOSF scientific advisors' meeting.



CREDITS

Published by the Save Our Seas Foundation (SOSF)

Registered address:
Rue François Bellot 6, 1206 Geneva, Switzerland
Mailing and office address:
Rue Philippe-Plantamour 20, 1201 Geneva, Switzerland
SaveOurSeas.com

Editorial team: Lauren De Vos, Sandrine Griffiths
Isla Hodgson, James Lea, Jade Schultz
Book design: Thom design studio

Copy editing & proofreading: Leni Martin

Portraits: Sam Kerr

Sebastian Staines: cover, back cover, 2, 4, 6. Andrew Lewin: 8 (left). Black Parrot Productions: 8 (below, right), 13 (left). Kristen Anti: 12 (above). France Mignonne: 12 (below). Mathilda Leibzig: 10, 13 (above). Yoshi Yanagita: 13 (below). Jamy Silver: 14-15, 76, 77. Henriette Grimmel: 16. Shane Gross: 18, 20 (top). Dillys Pouponeau: 20 (below), 21. Antonique Dick: 21-25. James Lea: 26, 99. Fenella Wood: 28 (top). María Alejandra: 28 (below). Matthew During: 29, 51, 58 (left). Dr Tim Jackson: 30, 72 (right). Matthew Smukall: 32-35. Jasmine Corbett: 36, 38 (right). Guy Stevens: 38. Manta Trust: 39 (infographic). Shark Spotters: 40-43. Janie Wray: 44-47. © Two Oceans Aquarium: 48, 81. Toby Rogers: 49. Matt Parkinson: 50 (top left). Don Hunter: 50 (top right). Victor Alati: 54. Durjoy Raha: 54 (middle). Ana Barbosa Martins: 54. Addie Binstock: 55. Titus Cañete: 55. Ana Torres: 55 (left). Noémie Coulon: 56. Vivienne Dames: 56. Bernard Eshun: 56. Miguel Gandra: 57. Ana María García Cegarra: 57. Trisha Gupta: 57. Muhammad Wiralago Dwi Gustianto: 58. Alessia Lavigne: 58. Samantha Leigh: 58. Martina Lonati: 59. Rihab Louhichi: 59. Alejandra Mendoza: 59. Evan Nazareth: 60. Buddhi Pathirana: 60. Claude Lespaigne: 60 (right). Clark Morgan: 61 (left). Imran Samad: 61. Citra Septiani: 61. Rafid Shidqi: 62. Vargas-Caro: 62. Cynthia Awruch: 62. Kim Bassos-Hull: 63. Ramón Bonfil: 63. Patricia Charvet: 63. Danny Copeland: 64. Dave Ebert: 64. Brittany Finucci: 64. Tristan Guttridge: 65. Jens Hegg: 65. Steven Kessel & Kevin Feldheim: 65. Robert Bullock (right): 66, 82. Jillian Morris: 66. Rachel Newsome: 66. Kyle Newton: 67. Sophie Prendergast: 67. Alice Rogers: 67. Ismet Saygu: 68. Issah Seidu: 68. Michelle Soekoe: 69. Brett Sweezey: 69. John Swenson: 69. Kevin Weng: 70. Hollie Booth: 70. Andrew Chin: 70. Shark Conservation Fund: 71 (left). Jannes Landschoff: 71. Jasmin Graham: 71. Tom Hart: 72. Anshena Johnson: 72. Kelly Kingon: 73. Jeremy Kiszka: 73. Peter Kyne: 73. Jeanne Mortimer: 74. Ayi Warmia: 74 (middle). Nadia Rubio: 74. Pelayo Salinas de León: 75. Simon Hilbourne: 75 (middle). Terence Vel: 75. Alvaro Herrero Lopez: 78. Jackson Wild: 79. © Wavescape Festival: 80 (above). © Museum of Discovery and Science: 80 (below). Ellie Moulinie: 98.

Printed by: Polygravia, 1618 Châtel-St-Denis, Switzerland





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