



. Seahorse, CambodiaCredit: Matt Glue/FI

FAUNA & FLORA INTERNATIONAL

Arcadia Marine Initiative

2020

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Executive Summary



This report provides an update on all Arcadia Marine Initiative projects supported since 2011, with a focus on activity in 2020. Fauna & Flora International (FFI) is extremely grateful to Arcadia for the opportunity to undertake such strategic and long-term conservation. Despite the turbulence of 2020, and thanks to Arcadia's support in making adjustments that have enabled us to better apply funding in a year of change and disruption, our projects across the marine portfolio have continued to secure sites and deliver change for marine biodiversity.

In 2020, we consolidated our support to 15 active projects, 14 of which are site based. These site-based projects work across a total of 48 sites, and of these we are seeing evidence of:

- Improved collaborative management at 45 sites;
- Reduced threats at 19 sites;
- Recovered biodiversity at 8 sites.

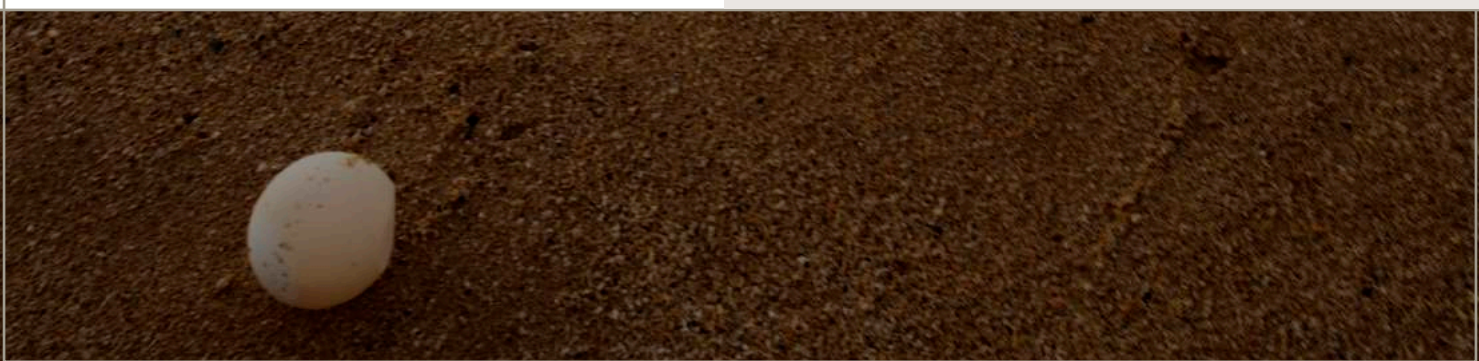
Five of the site-based projects have not yet shown evidence of reduced threats or biodiversity recovery because it is too soon to see any effect.

Arcadia funding also supported **seven new projects** in 2020. **Three of these projects are in Indonesia**, designed to lead to an integrated, national approach to marine conservation. In **Mozambique**, a country with important (but threatened) marine biodiversity, we have actively explored new opportunities to support marine conservation. We already have strong networks and relationships here through our terrestrial programme of work (including Halcyon Land and Sea) that have provided the basis for developing effective engagement to drive change for improved MPA and/or fisheries management. We have continued to embed our growing expertise and reputation for work addressing marine plastics through the development of an additional site-specific **plastic pollution project in Nicaragua**. Our wider work on fisheries significantly stepped up in 2020, with a strong focus on **defining and tackling destructive fisheries** which drive biodiversity loss, and in parallel to this we have started exploring potential mechanisms to **address sturgeon bycatch** in the industrial fishing sector in Georgia.

Key achievements in 2020

Significant advances in the scale of our site-based protection:

- In Cabo Verde, the island of Maio was declared a **UNESCO Man and Biosphere reserve**, an international designation that will provide significant additional protection for this site
- **An additional 350km² of No Fishing Zones and Fisheries Restricted areas** were declared in Turkey, prohibiting destructive fishing of ecologically important seagrass and rocky reef habitats
- **Legal recognition of the ecologically sound and administratively coherent MPA network** in Aceh province, Indonesia, incorporating twelve MPAs (over 3,800km² of ocean)
- **Capacity for co-management was considerably enhanced at two sites**, evidenced by the establishment of the first Collaborative Management Group in Pemba, Tanzania (multi-village shared patrols and management), and the new national forum on fisheries co-management in Myanmar, which enables nation-wide creation of new co-management areas
- **The financial foundations for shared management of sites** continues to be strengthened by the uptake of village savings and loan schemes across Myanmar, Aceh, Pemba and Kenya
- **Our innovative project approaches** are being used as replicable models across multiple islands in Cabo Verde, demonstrating their success and scalability
- **We continued to lead the way in pioneering models for sustainable financing** e.g. user-fee mechanisms in Cambodia, octopus fishery supply chains in Pemba, toxic pufferfish as a pharmaceutical product in Turkey, and blue carbon opportunities in Pemba, Kenya and Honduras.





Significant impact on national policy:

- São Tomé e Príncipe, revisions were made to fisheries legislation that cites MPAs as mechanisms for fisheries management.
- Comprehensive internal and external review to support FFI positioning in the fisheries space (with an explicit position focusing on the damage of fisheries on biodiversity).
- Supported the global ban on harmful subsidies, joined an NGO coalition to lobby the WTO to meet the 2020 deadline for this.
- Published and widely disseminated a seminal review on the impacts of deep-sea mining, promoted by Sir David Attenborough, and supported collective lobbying efforts to delay the allocation of permits for mining operations to 2021, in part through our active membership of the Deep Sea Conservation Coalition.
- Development and/or implementation of National Plans of Actions for sharks (Myanmar), turtles (Cambodia) and Illegal, Unregulated and Unreported fishing (Cambodia).
- Development of a first global management standard for plastic pellets underway, and exploration of an associated certification scheme.

Capacity-building, Covid-19 and knowledge gained

The impact of Covid-19 across the marine portfolio has been variable, in line with the level, length and timing of national lockdowns, and associated

travel restrictions on people and goods. Plans at the individual project level have been adapted and adjusted to the ever-changing situations on the ground, but in general progress has been maintained, albeit in different ways than originally planned at some sites.

Our efforts to build and maintain capacity of local organisations in order to deliver ongoing conservation has been particularly crucial this year in the face of the pandemic. We have provided critical support to both marine project partners and local communities enabling all our projects, associated communities and partner organisations to weather the impacts of Covid-19. The virtual nature of many events this year has encouraged greater engagement from our overseas teams and partners in Cambridge hosted events, including our marine working groups and more focused training sessions in grant management.

Finance

We look to 2021 optimistically; the delayed so-called 'ocean super-year' will provide FFI with important opportunities to engage in global fora, sharing learning and best practise from our expanding portfolio of work, and seeking to better support the delivery of national government commitments on marine conservation. We will continue to prioritise project level sustainable financing plans in the next 12 months, capitalising on the global momentum to diversify conservation funding streams away from a reliance on international tourism following the pandemic. We are extremely grateful for funding by Arcadia supporting our marine programme in 2020, and feel positive that our impact will continue to be enhanced in 2021.

Programme Overview

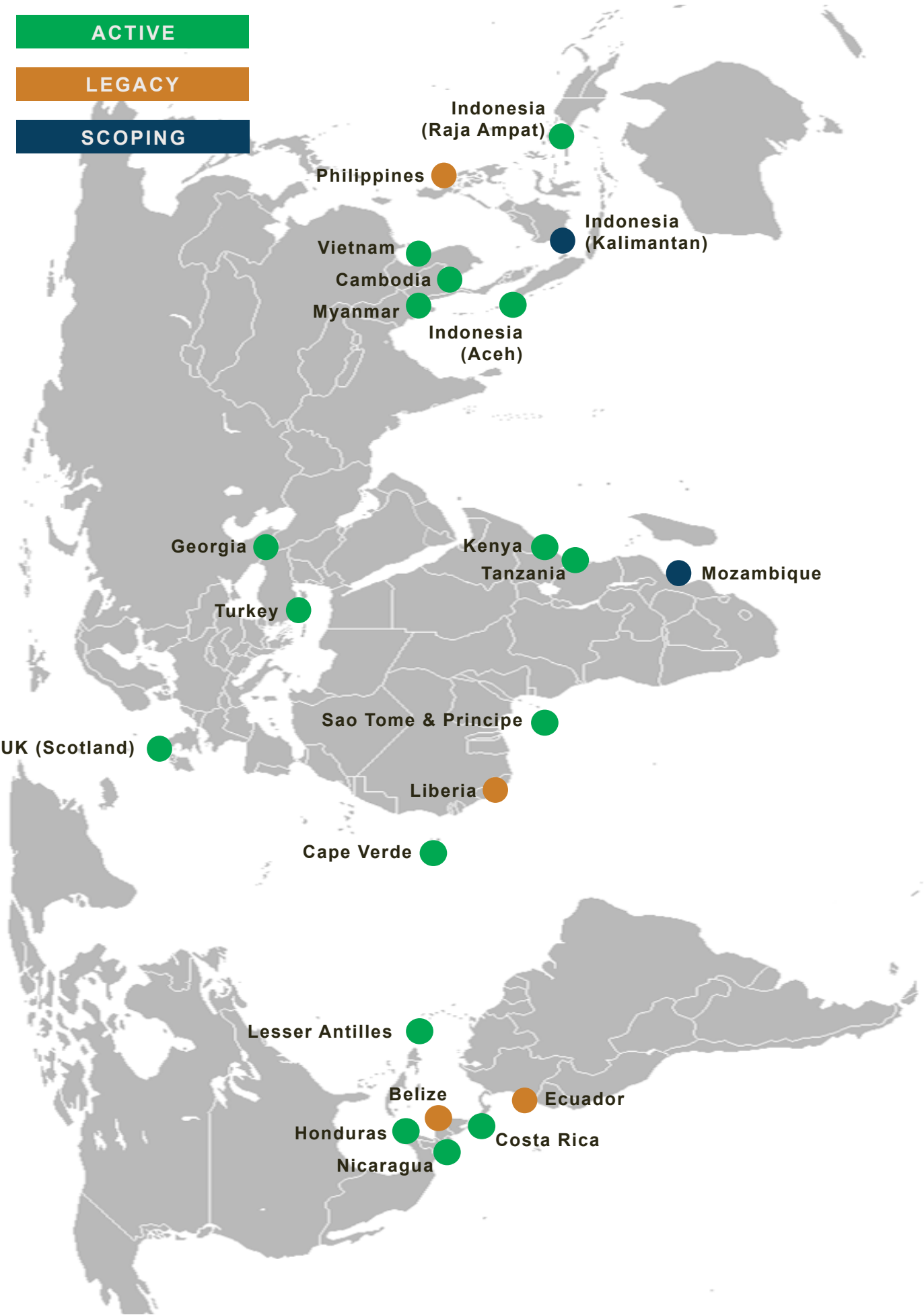
Candy crab on soft coral in Indonesia. Credit: Matt Glue/FBI

FOCAL GEOGRAPHIES

ACTIVE

LEGACY

SCOPING



ARCADIA MARINE STATISTICS



- Portfolio includes 41 projects across 21 countries



- Reduced overfishing, destructive fishing and threats to key species in 33 sites and signs of biodiversity recovery in 17 sites



- Catalysed designation of 34 new Marine Protected Areas (MPAs) – with a further 14 pending designation or approval – all with communities playing a key role in their governance and management



- Secured 29 new marine-related laws or policies in 15 countries, ranging from the UK Microbeads ban to measures to restrict bycatch-causing hooks in Nicaragua



- Facilitated improved collaborative management in 79 sites, covering over 1.9 million ha of ocean



- Built network of 211 partners including national NGOs, government bodies and small-scale fishing organisations, with evidence of enhanced capacity in 60

2020 REVIEW AND HIGHLIGHTS

Highlights And Key Achievements In 2020 Include:

- **Cabo Verde – formal designation achieved:** In October, after nearly eight years of lobbying, the Protected Areas Management Plan for the island of Maio was finally approved - the first in the country - and Maio was formally designated as a UNESCO Man and Biosphere reserve
- **Aceh, Western Indonesia – enhanced legal recognition:** In 2020, with an improved legal status for PiSiSi and the legal recognition of new sites in other districts, the 12 MPAs of Aceh province – across over 3,800km² of ocean – were finally established as an ecologically sound and administratively coherent network, rooted in a locally-based MPA system developed in FFI's original project location of Pulau Weh
- **São Tomé e Príncipe - revisions to fisheries legislation:** This year fisheries legislation was revised in order to cite MPAs as mechanisms for fisheries management
- **Pemba, Tanzania – greater management stability:** In Pemba, a first Collaborative Management Group now integrates four village-level Fisher Committees to manage a shared area collaboratively. Through shared activities (e.g. patrols), harmonised by-laws, and common conservation targets, this will strengthen management of joint marine resources.
- **Deep Sea mining:** Published and widely disseminated a seminal review on the impacts of deep-sea mining, promoted by Sir David Attenborough, and supported collective lobbying efforts to delay the allocation of permits for mining operations to 2021, in part through our active membership of the Deep Sea Conservation Coalition.
- **Myanmar – progress on co-management:** A new national forum on fisheries co-management was created which creates conditions to facilitate the establishment of new co-management areas nation-wide
- **Significant progress on development of innovative financing systems:** e.g. user-fee mechanisms in Cambodia, octopus fishery supply chains in Pemba, toxic pufferfish as a pharmaceutical product in Turkey, and blue carbon opportunities in Pemba, Kenya and Honduras
- **Turkey - critical MPA expansion:** In August, the Turkish government announced the designation of an additional 350km² of No Fishing Zones and Fisheries Restricted areas

SIGNIFICANT CHALLENGES IN 2020:

Clearly, we cannot compile a 2020 report without acknowledging the impact the **global Covid-19 pandemic** has had on the marine portfolio. The restrictions on both travel and the movement of goods has had severe impacts at many of our sites. As national lockdowns came into force overnight, the market for many seafood products vanished, and fisher incomes dropped dramatically. The halting of the export of dried fish from Príncipe to São Tomé led to a saturation of the local market for fresh fish and actually reduced local fishing effort. In Honduras, a large portion of the seascape ceased all activities, and fisher incomes dropped. At the same time, there was significant emigration from cities to the coast as new people turned to fishing for food, and, in Myanmar, newly established links between fishers in the LMMA and an association of restaurants have been paused as demand from the restaurants declined dramatically. Shifting consumer demands have driven the development of alternative ways of selling catch. In Scotland, FFI actively promoted the [development of local markets](#) for small scale fishery products, and secured a sensible price on these markets so that there might be a longer-term shift in trade patterns, even when the European market reopens. Project activities have been restricted across the portfolio due to limitations on community gatherings, but teams have responded effectively to these constraints by focusing on desk-based activities (e.g. data collation, analysis and strategic planning).

Remote island communities were particularly at risk without revenue streams from fishing or tourism, and their dependence on trade routes by sea was vastly magnified. In response to reduced incomes in fisher communities, FFI re-purposed funds to support the distribution of critical food supplies in Honduras, Myanmar and Aceh. This is an important approach in order to maintain future engagement with local communities and to sustain marine conservation activities.

A number of partners receiving current Arcadia marine grants also received support from the Partner Crisis Support Fund in 2020 to help them weather the immediate impacts of Covid-19 and associated economic crises, as all marine funding had been allocated for the year and it was not possible to make additional reallocations without undermining other project budgets. Partner organisations involved in Arcadia marine projects and also supported through the Partner Crisis Support Fund included Fundação Príncipe, Fundação Maio Biodiversidade, and four of the partners in the seascape project in Honduras (Fundación Islas de la Bahía, Fundación Cayos Cochinos, Fundación Cuero-y-Salado, LARECOTURH, Centro de Estudios Marinos).



Fish catch drying in the sun, Myanmar.
Credit: Robert Howard/FFI.

ARCADIA MARINE INITIATIVE: BACKGROUND

The world's ocean and coasts are host to some of the most productive ecosystems on earth, providing food and livelihoods for one billion people living in local communities, and sustaining local and national economies. However, the threats to our ocean and coastlines are severe and increasing. Past decades of neglect and over-exploitation have proved that the marine environment is not only vulnerable, but becoming increasingly and rapidly degraded. The unprecedented rate of change and the scale of the threats necessitate urgent and coordinated global action. In response, FFI is committed to increasing our conservation impact on marine and coastal habitats.

Since 2010, FFI's marine programme has developed into a diverse portfolio which aims to:

- Deliver effective site-based marine management (MPAs, fisheries and species focused conservation at focal sites);
- Improve policy and practices in order to address wide-scale threats to species and habitats (national fisheries reforms, responsible business practices);
- Develop the capacity of in-country organisations to enhance their operations and help them to deliver effective marine conservation;
- Build a strong evidence base for dissemination and further replication of successful approaches.

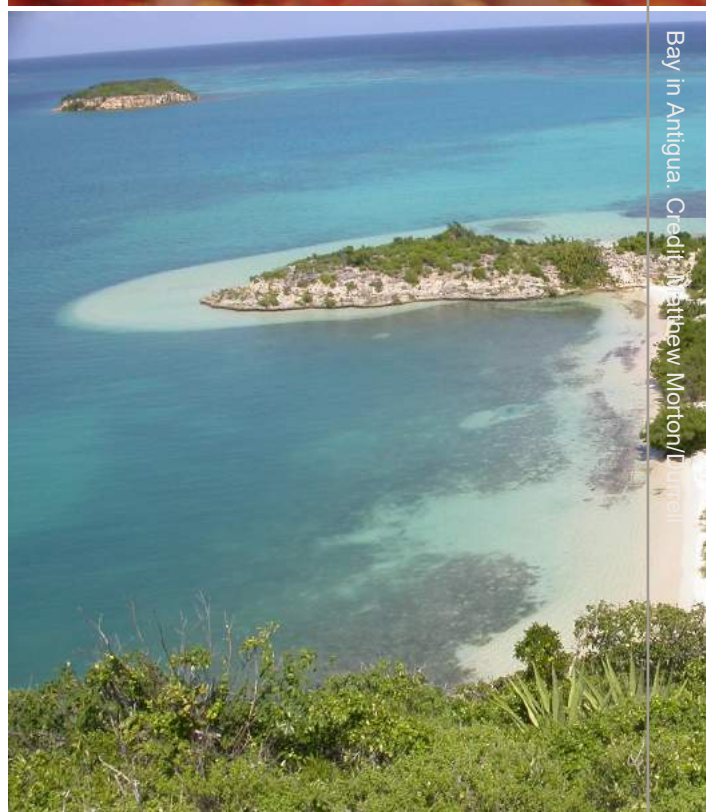
EFFECTIVE MARINE MANAGEMENT

Marine Protected Areas (MPAs) are among the most effective tools for tackling many of the threats and pressures on the marine and coastal environment and its resources. Research suggests that when combined with other management strategies (such as integrated coastal management and ecosystem-based fisheries management), appropriately placed and well managed MPAs can restore the health of marine life inside their boundaries and have lasting economic benefits for human societies.

FFI believes that a central policy of international efforts should be to protect a greater area of the oceans, while also ensuring that the designated sites are effectively managed. Through a suite of site-based projects at local and sub-national scale we are showcasing approaches to effective governance and improved management of marine and coastal resources, crafted to suit each local situation.



Fish in the reef, Indonesia. Credit: FFI



Bay in Antigua. Credit: Andrew Morton/Durrell



MARINE POLICY & PRACTICE

Whilst MPAs are vital as refuges for biodiversity, they will not, on their own, lead to a sustainably managed ocean. There is, therefore, a need for an approach that addresses the connected nature of ecosystems and the cumulative impacts of human use. Through influencing marine-related government policy in focal geographies and undertaking constructive advocacy with corporate sectors that can impact the marine environment, we aim to strengthen the enabling environment for MPAs and other localised forms of marine management.

DEVELOPING CAPACITY

Many of the most biodiverse marine areas lie within countries that have limited technical, human and financial resources for their effective management. However, the most effective and long-term solutions for safeguarding species and habitats lie in local hands; strong and effective local and national and institutions are the key to successful conservation. FFI is committed to identifying organisations (government agencies, NGOs, academic institutions and community-based organisations) within our regions of operation that can have the greatest impact for marine conservation and assisting them to reach their full potential.

BUILDING AN EVIDENCE BASE

Demonstrating the impact and benefits of improved management for people and ecosystems is central to securing commitment to make these improvements. Through our marine projects we are collecting data on improved governance, reduced threats and indications of biological recovery, and are using this knowledge to inform practice within our project portfolio. We also disseminate lessons learnt externally to inform our wider practitioner network and to feed into processes associated with marine management and policy.

LEVERAGING FUNDS

Over the last ten years Arcadia has provided significant financial support to FFI's marine programme; from which crucial leveraged funding has been raised.





WIDER MARINE PROGRAMME OUTCOMES

Arcadia funding has not only enabled us to develop a portfolio of marine-focused projects around the world, but is also allowing us to gain added value from the wealth of diverse activities, deliver impacts and share learning between and beyond the constituent projects.

The marine programme is supported by the whole breadth of FFI's operations, and draws on various disciplines including social science, environmental economics and communications; these all contribute to the significant impact that FFI is having in support of marine conservation. By investing in the core function of a centralised marine team that coordinates activities, leads on directions and actively shares learning, Arcadia enables us to reap wider organisational benefits across our work, and enables us to share learning actively with other organisations (including those in our wider partner network) and to contribute to broader national and international policy debates.

Here we try and capture some of the added value (beyond the activities in individual projects) that we have seen across the marine programme in 2020:

- **New institutional partnerships:** We developed relationships with a range of organisations, including Blue Finance in support of sustainable financing in Cambodia and UNEP-WCMC, the University of Cambridge Zoology Department and Birdlife International through the developing fisheries work to better define destructive fishing. We have joined a collaborative effort to design an online hub for small-scale fishers led by the Environmental Defence Fund, contributing thoughts and experience from across our marine portfolio and sharing relevant resources such as information around participatory market system development. These partnerships help to raise the profile of FFI in the marine sector, and in some
- cases bring in critical expertise to support project delivery.
- **Ongoing work with existing collaborations:** FFI has continued to actively engage in the [Marine CoLAB](#) initiative (which was developed and is funded by the Calouste Gulbenkian Foundation), which aims to use communications and collaboration to increase focus on ocean conservation. The Marine CoLAB has been brainstorming marine priorities for next year and support required to evolve in the post-Covid-19 world.
- We successfully delivered a session on learning from our work to the first cohort of a new Marine Conservation MSc course at Plymouth University, and supported two students from the University of Cambridge MPhil in Conservation Leadership to undertake reviews of opportunities for blue carbon across the marine portfolio, and to assess different approaches to enforcement and compliance. Collaborating with universities helps support the next generation of conservation professionals in their career development.
- In 2020, FFI attended regular meetings of the High Level Panel for Oceans through our role as a member of the Advisory Network. We fed into a global report on [blue recovery](#) post-Covid-19 and submitted our recommendations to help inform the transformations document and [final report](#), launched on 3rd December, which represents a global commitment from the 14 member countries and lays out a roadmap for action to achieve a global sustainable ocean economy. 2021 will be a key year for the implementation of these recommendations, and we are tracking the process to understand implications for our work in Kenya and Indonesia in particular.

- **Dissemination of learning:** Four open-access publications were published in 2020, disseminating project-level baselines, learning or impact from Nicaragua, Cambodia and Antigua and Barbuda; three reports have been uploaded to our website on the risks and impacts of seabed mining, marine uses of foamed polystyrene, and evaluating coral reef monitoring data in Cambodia (see Annex 2). Additionally, we are in the process of preparing several open-access publications on topics, including the impacts of Covid-19 on small-scale fisheries at our project sites, learning from participatory MPA design and management, and approaches to ensure MPA compliance. This information will feed into a marine-themed Oryx issue. We published 18 blogs and news stories, which were viewed by nearly 9,000 people, and marine-themed posts on FFI's Facebook, Instagram and Twitter accounts that reached over 500,000 people. Our marine conservation work was also showcased in FFI's Ocean Webinar, convened for FFI's Conservation Circle, which focused on the impacts of, and responses to, the pandemic in Cabo Verde, Honduras and North Coast Kenya.
- **Contributions at global marine conservation events:** This year, FFI staff attended the [International Marine Conservation Congress](#) (hosting and presenting within a symposium on balancing fisheries and conservation objectives, and presenting on the risks and impacts of deep seabed mining), the [12th International Forum on Illegal, Unreported and Unregulated Fishing](#) (showcasing our work addressing IUU in Cambodia) and the [Ocean Panel's webinar launching 'The Human Relationship with our Ocean Planet' Blue Paper](#) (contributing insights from our grassroots approach to marine conservation to the panel discussion). We are also
- due to present on our coral reef focused work in Cambodia (as a keynote session), Myanmar and Honduras at the [Reef Conservation](#) UK conference in December.
- **Internal learning and sharing:** FFI's internal platform for experience sharing and learning exchange (the Marine Working Group) brings together the disparate staff working on marine issues across the organisation, and continues to convene monthly to discuss topical and thematic issues (such as co-management approaches in East Africa and understanding blue carbon opportunities in projects). An average of 32 people attended each working group meeting in 2020, and the interest in, and value of, this group is evident from the increase in attendance of more than 80% over the last three years. In addition, we hold weekly informal sessions with staff leading on marine projects to help collectively solve emerging challenges within individual projects or from new external contexts. This meeting shifted to a virtual platform in March, and attendance has been expanded to include staff based overseas which has enhanced opportunities for internal learning.
- **Impact assessment:** Across the portfolio we actively seek to support projects to embed robust monitoring and evaluation for impact tracking in their ongoing activities. This year we continue to ensure a strong evidence base for our marine projects, with an emphasis on rigorous initial project design and embedded monitoring and evaluation that allows us to see a clear trajectory towards project impact.
- **Project sustainability:** This year we have made a conscious effort to understand what approaches to financing MPAs would be locally appropriate across a number of our sites. This has focused



Sea dragon, Indonesia. Credit: Matt Glue/FFI

on leading site teams in Turkey and Tanzania through an asset-based landscape assessment approach to identify the full range of sustainable financing opportunities at their sites, and then supported prioritisation of the most feasible options. In Cambodia our partnership with Blue Finance is evolving into a broader institutional relationship given their connections to the [Sustainable Ocean Fund](#) and the opportunities that may arise out of this as our projects scale up and start to represent viable investments. In addition, 2020 has highlighted significant interest in blue carbon opportunities across the portfolio and identified some clear next steps to progress this field in Tanzania, Honduras and Cambodia in 2021.

- **New co-financing opportunities:** The central marine team works closely with fundraising to support approaches to donors for a range of projects within the portfolio. In 2020 two new grants have been signed with the Blue Action Fund and conversations are ongoing with two large philanthropic foundations.
- **New work on fisheries:** In January, a full-time fisheries technical specialist joined the core marine team. With this post filled (as recommended in the external review commissioned by Arcadia) we have considerably enhanced our capacity to engage in higher level policy discussions in this sector (for more detail on specific plans see page 16).

PROJECT UPDATES 2020

Projects are organised by their stage of implementation to make it easier to draw out what has been achieved in the current year of funding, with projects categorised as follows:

- New projects – projects that the Arcadia funding has supported for the first time this year;
- Active projects – projects that have received finance from Arcadia this year;
- Ongoing projects – projects that FFI is still active in delivering, but that did not receive Arcadia Marine Initiative funding this year;
- Legacy projects – projects where we track ongoing progress, but are no longer actively engaged, except in cases where support is specifically requested, and;
- Historical projects – projects where FFI is no longer actively engaged and it is no longer appropriate to expect ongoing updates.

Within each category, project reports are organised alphabetically by geography.

A full list of the projects supported during the lifetime of Arcadia Marine Initiative is included in Table 1 overleaf.



Day in Fair Isle, Scotland. Credit: Fair Isle Bird Obs



Coral reef and flocking fish in Indonesia. Credit: Matt Glue/FFI

New Projects

These are projects that Arcadia Marine Initiative has supported for the first time this year.

GLOBAL: Transforming Destructive Fisheries

Fisheries are the most common, widespread and enduring threat to marine biodiversity, and thus are a component of many of FFI's marine projects (several of which have already had significant success in reducing this threat on a local scale). In 2020, in recognition of a long-standing institutional ambition and we undertook an extensive internal and external analysis and consultation to prioritise the need for additional input, support and positioning around fisheries. We identified a priority need to ensure that global, regional and local fisheries' decision-making goes beyond sustainability, and specifically accounts for the wider biodiversity impacts of fishing (for both species and habitats) and thus the need to focus on methods of fishing as much as the amount of fishing. Going forward, we will be developing a programme of work to reduce the direct impacts of destructive fishing, which causes collateral damage to non-fished species and habitats.

Based on evidence from across our regional marine portfolio, we have identified a particular need to tackle fisheries that use bottom-trawl and dredge methods. These fishing methods simultaneously catch too much, damage the ocean floor and bycatch other marine animals. To address the prevalence of bottom trawl fisheries we will need to leverage supply chain/ corporate action, advocate within multilateral governance bodies and explore deployment of innovative fishing technology. In addition to evolving opportunities to tackle destructive fisheries within our project sites (e.g. in the Black Sea (page 19), East Africa and the Gulf of Thailand), this year we have developed a collaborative initiative (funded by a CCI collaboration grant) to better define the term 'destructive fishing' in global policy commitments. Working with UNEP-WCMC, the University of Cambridge and Birdlife International, we will identify critical ocean policy opportunities in 2021 to catalyse national, regional and international progress on this issue.

The Raja Ampat Seascape is an acknowledged epicentre of global marine biodiversity. However, some areas have been



Destructive seine fishing in Tanzania. Credit: Mwangi Kirubi/TNC



STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE



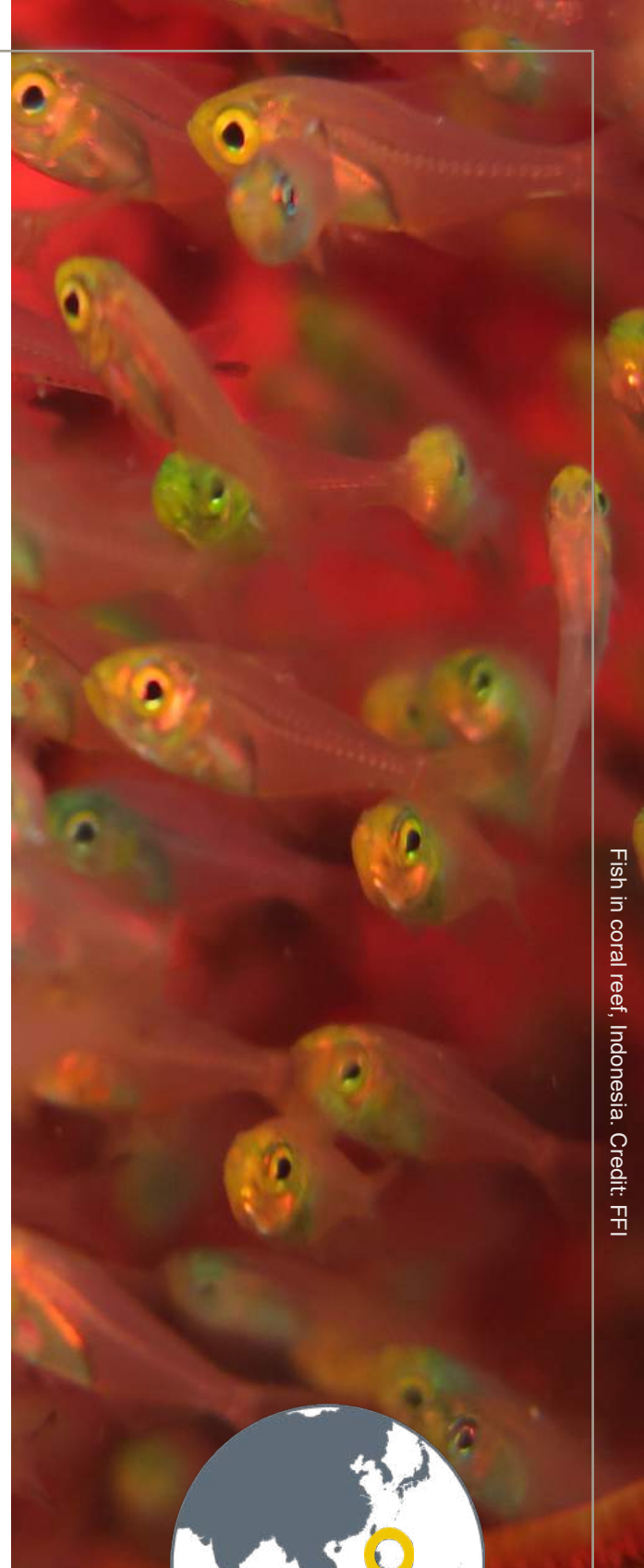
Indonesian lobster at the fish market. Credit: Aal Syafirizaldi/FFI

INDONESIA: Establishing Effective Management In The High Biodiversity Raja Ampat Seascape

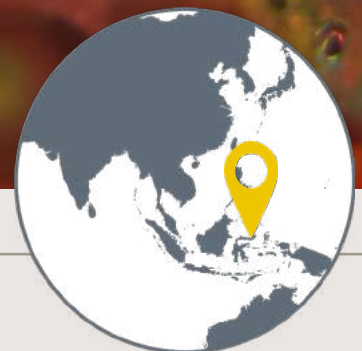
neglected by previous conservation initiatives. Among these is North Misool, which contains intact coastal forests and mangroves that transition directly into seagrass and coral reefs, supporting populations of dugongs and nesting sea turtles believed to be under threat as a result of insufficient marine protection within the wider Raja Ampat MPA system. FFI is already working on a 'Ridge to Reef' project in Raja Ampat, and in this new project we will bring the experience from our comparative marine work in Aceh to local communities and provincial government in order to implement a sustainable, supported MPA based on local customary management systems.

In 2020, FFI has completed significant work to inform the establishment of an effective locally managed MPA in North Misool. While fieldwork was postponed between March and November, ecological baselines for seagrass, dugong and turtles were collated from a literature review and combined with mapping of local community knowledge to incorporate into participatory management plans and support the effective protection of key biodiversity. These baselines will also allow for assessments of impact. A parallel assessment of community needs informed draft Village Regulations, giving a legal framework to community enforced measures for conserving marine biodiversity and sustainable financing. The project has also completed an initial assessment of long-term tourism potential for the region, recognising the short- and medium-term impacts as a result of Covid-19. The project now has a strong understanding of the local context to inform effective interventions in North Misool and has used this to develop engagement with government agencies, local NGOs, and ecotourism organisations. This includes the University of Papua, who are providing support in training on seagrass, dugong and turtle survey techniques. Although restrictions around Covid-19 limited field activities in 2020, FFI and our partners have developed the protocols, connections and understanding for progression towards designation of this area of critical biodiversity as a community managed MPA. With continued consolidation of community support for designation through consultation, implementation of evidence-led biodiversity benefitting measures will be facilitated.

Building on FFI's long presence and established



Fish in coral reef, Indonesia. Credit: FFI



STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

INDONESIA: Strengthening the Kepulauan Banyak MPA, Aceh

connections in Aceh, FFI is scaling up our intervention around Simeulue to a seascape-level approach, directly supporting the government in the delivery of the provincial MPA network. Kepulauan Banyak is a well-established marine park which lacks sufficient management capacity to effectively protect the extensive coral reefs and turtle nesting beaches. The project will support improved management of the existing national park by working with communities to garner commitments to engage in sustainable fishing practises, and empower the Panglima laot to exercise their formally recognised customary rights to access and manage nearshore marine resources.

In 2020, the project team began consultation with communities across three existing LMMAs to understand priority needs and undertook an initial review of wider requirements for the MPA management plan.

INDONESIA: Securing the coral reef complexes of Kalimantan

In 2020, FFI funded scoping work to develop a project to improve protection of the 77,000-hectare Karimata Marine Sanctuary in West Kalimantan. The sanctuary was gazetted in 1985 and comprises groups of small and large islands interspersed with extensive coral reef complexes, and is home to several turtle species, dugong and the critically endangered giant shovelnose ray. However, the reefs are currently under severe threat from illegal fishing practices (including fish bombing), intense use of motorboats, chemical pollution and plastic waste. Local government is also promoting the area for tourism development, with potentially significant biodiversity impacts.

FFI is working with the government management body for the Karimata Marine Sanctuary to collect baseline information on key marine species and habitats, and to identify conservation management priorities. Social information collected from villages within the sanctuary will also inform suitable interventions, identifying solutions that maximise benefits for local people while protecting key biodiversity. This work is filling a major knowledge gap by linking detailed marine biodiversity data with specific management actions to provide a strong evidence base for future conservation efforts in the Karimata Marine Sanctuary.



STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE



STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

GEORGIA: Developing effective fisheries management along the Black Sea coast

The Black Sea is threatened by over-fishing, pollution and hydro-power dam development, and its marine fauna (which includes six highly threatened sturgeon species and three cetacean species) is under grave pressure. FFI has been working to protect sturgeon in this area since 2015, focusing on the Rioni River as the last known spawning habitat for these six species.

In 2020, building on the successful work to date, efforts have expanded to improve understanding of threats to sturgeon in the marine environment, and to identify potential solutions. By-catch from industrial fishing fleets has been identified as a major threat to sturgeons, and by funding fisheries observers, the project has generated important information on the scale and location of sturgeon by-catch. This work will continue into 2021 with plans to develop maps of key hotspots for sturgeon by-catch and to build relationships with the commercial fishing sector to understand and test possible mitigation measures. A market survey of sturgeon meat will inform further investigation of legal and illegal supply chains for these species and will help to identify key intervention points for conservation action to protect this critically endangered fish.



FFI Partner staff monitoring sturgeon in Georgia. Credit: FFI



Rioni River in Georgia, the site of sturgeon conservation. Credit: FFI



Focal Sites:

Georgia Black Sea coast

STRENGTHENING PARTNERS

POLICY & PRACTICE



MOZAMBIQUE: Development of marine conservation opportunities

Mozambique is home to Africa’s fourth longest coastline of nearly 2,500km, supporting mangrove forests of approximately 305,400 hectares - the highest coverage in the Western Indian Ocean. This country forms part of the Indian Ocean marine biodiversity triangle, supporting extensive coral reef areas as well as important habitats for tuna, cetaceans and large numbers of shark and ray species. Sixty percent of Mozambicans live along the coastline, and small-scale fishers catch 85% of the country’s fish. Although Mozambique’s fisheries sector only represents 2% of its GDP, there are increasing concerns of large scale IUU fishing given the relatively small number of marine protected areas established.

In 2020 FFI undertook an assessment of opportunities to support marine conservation in Mozambique. This provided a baseline of knowledge in several areas: key biodiversity hotspots and threats, the work of other organisations, the distribution of existing MPAs, illegal trade networks for marine species, marine plastic issues, national marine conservation targets and relevant legislation to inform potential new project development.

A review of this evidence base has resulted in the decision to initially focus future project development on policy engagement related to fisheries.

NICARAGUA: Tackling plastic pollution along Nicaragua’s Pacific coast

Building on the ongoing marine conservation efforts in Nicaragua (see p. 38) plastic pollution was identified as a specific threat to marine biodiversity, including turtles. To address this threat, FFI will focus on coastal communities, businesses and policymakers to understand barriers and opportunities to tackling priority plastics in order to reduce business and household plastic pollution, as well as building on existing government relationships to enable engagement on tackling plastic pollution at a national level.

In 2020, following preliminary discussions in country to assess the scope of the pollution issue, FFI identified the abundant use of single-use plastics in the food sector as a key intervention point. Activities planned for December will focus on developing appropriate methods to successfully map the plastic production and recycling chains to identify key actors to engage in mitigation activities, and initial steps have already been made to investigate the viability of alternatives to single-use plastics such as banana leaf containers, and determine key questions to be explored through a market assessment.



SECURING MARINE SITES

POLICY & PRACTICE



POLICY & PRACTICE

Active Projects

These are ongoing projects that have received finance from Arcadia this year, and where we are consolidating longer-term engagements.



Fish on coral reef, Indonesia. Credit: Matt Glue/FPI



CAMBODIA: Underpinning the design and management of a national MPA network

BACKGROUND

In 2012, FFI started work in the Koh Rong Archipelago, an area rich in coral reefs, seagrass meadows and associated marine biodiversity, and a hotspot for globally threatened seahorses. Damaging fishing practices and rapid tourism development are both major threats here, and so this area was a priority for MPA designation. FFI initially worked with Community Fishing Institutions, which have the legal authority to manage their own fishing grounds, to collaboratively design protection at a local level in Koh Rong. A small network of community managed areas subsequently evolved first into a Marine Fisheries Management Area (2016) and then into the country's first Marine National Park (2018), through close government collaboration. The project has since expanded to encompass another proposed Marine Fisheries Management Area at a second archipelago (Koh Sdach), and is now working towards connecting the country's disparate designations into a cohesive national MPA network.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Effective local governance in Koh Rong** through supporting local communities, management plans (including no-take zones) for each community fisheries area (managed by Community Fishing Institutions) were legally approved in 2014.



Focal Sites:

Koh Rong Marine National Park (containing three Community Fishery Areas)

Koh Sdach Community Fishery Area

Area Of Impact:

56,693 hectares

STRENGTHENING PARTNERS

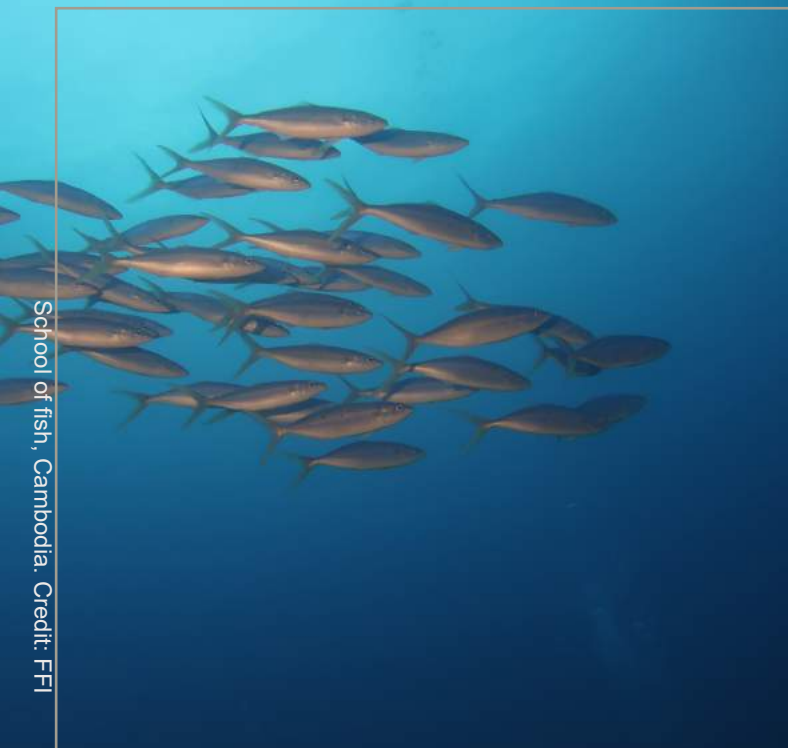
SECURING MARINE SITES

POLICY & PRACTICE

- **Cambodia's first Marine National Park:** Koh Rong Marine Fisheries Management Area was designated in 2016, building on the management already put in place through fishing communities (as documented [here](#)). The site was re-designated as Koh Rong Marine National Park (MNP) in 2018, retaining the original zoning plan (building on previous fisheries areas) and on the effective community-based patrol activities.
- **Improved compliance with regulations at Koh Rong:** A patrolling system was established for community fisheries areas within the MNP in 2015, led by the communities and supported by the Fisheries Administration. Patrols use the Spatial Monitoring and Reporting Tool (SMART) system, which has led to more effective patrolling as better information is available (as documented [here](#)). There is anecdotal evidence that fishing boats from outside the community fishing grounds are entering the MNP less frequently. Communities are also now providing some co-financing to cover the costs of patrols.
- **Marine biodiversity maintained or recovering:** Coral reef monitoring between 2013-2015 showed that, as a result of enhanced community management of fisheries areas in the Koh Rong Archipelago, hard coral cover remained stable and seagrass cover increased in some areas (see papers [here](#), [here](#), and [here](#)). For key indicator fish species, parrotfish abundance remained stable whilst grouper abundance increased in some of the most highly protected zones. The super-sized and very rare Neptune's cup sponge, previously thought to be extinct in Cambodia, was found within Koh Rong MNP in 2018, and a whale shark was observed within the MPA for the first time in over 10 years in 2019.
- **Sustainable finance opportunities developed:** An action plan to diversify and increase sustainable financing for Koh Rong Marine National Park has been produced, and partnerships have been formed with Blue Finance and Green Equity Asia to explore opportunities for income streams that can support conservation.
- **New designation at Koh Sdach:** Support has been provided since 2017 to additional Community Fishery Institutions as part of preparatory activities towards creating a new designation (mirroring the process in Koh Rong MNP), and in 2019 all key stakeholders were brought together to develop the proposed new MPA designation.
- **Capacity built for marine conservation:** Staff within the Cambodian Fisheries Administration have been trained in MPA management, and they are now independently leading patrols. Community Fishery Institutions have also received training in people management, budgeting and stakeholder engagement. The project has also provided opportunities for Cambodian scientists and students to gain skills and experience.
- **Improved national policy for marine conservation:** FFI participated in a National Taskforce that led to a ban on foreign-owned ships using Cambodia as a 'flag of convenience' and a requirement for the national fishing fleet to be registered. In 2018, FFI worked with another NGO (OceanMind) to assess monitoring, control and surveillance for Cambodia's territorial waters, including Koh Rong MNP. The results from this satellite analysis will be fed into the National Taskforce in order to better coordinate patrolling.



Port at Koh Rong Archipelago. Credit: Bianca Roberts/FFI



PROGRESS IN 2020

- **Improved compliance with regulations at Koh Rong:** Monitoring data shows that the number of infractions within Koh Rong MNP has fluctuated between 2015 and 2020; however, the number of infractions is now lower than when Koh Rong MNP was designated in 2016, demonstrating that compliance is generally high.
- **Marine biodiversity maintained or recovering:** Analysis of coral reef monitoring data from Koh Rong MNP in 2019 revealed tentative signs that hard coral cover and grouper and parrotfish biomass have increased since the designation of the MPA (as documented in this [open access paper](#) and [report](#)), indicating that active marine management is having a positive biodiversity impact. Monitoring of seagrass habitat continued within the Koh Rong MNP, with four species now identified, along with a number of associated vulnerable species.
- **Local livelihoods supported:** Four crab banks were established engaging participants in sustainable management of a key local fishery. Crabs are held until they release their larvae and are then sold, thus enhancing sustainability of crab populations plus potentially increasing crab catches.
- **Sustainable finance opportunities developed:** A multilateral agreement was signed with two partners, Blue Finance and Green Equity Asia, to explore and implement a co-management model, including a user-fee-based mechanism, for sustainable financing of Koh Rong MNP, and the Ministry of Environment has accepted the proposal to explore this further. The founding members of the Special Purpose Entity (FFI, Blue Finance and Song Saa Foundation), which will be the management entity of Koh Rong MNP, have accepted this role in principle. An initial consultation has also been conducted with relevant stakeholders regarding MPA financing, and other NGOs and government consultants have been consulted on potential fee collection mechanisms.
- **New designation at Koh Sdach:** Plans for a new Marine Fisheries Management Area designation at Koh Sdach are now fully supported by the provincial, district and commune authorities as a result of a consultation process with key stakeholders from the province. In January 2020, a first round of bi-annual coral reef surveys was conducted in the Koh Sdach Archipelago, revealing that the northern parts of the archipelago had the highest hard coral cover yet observed in Cambodia and highlighting the need for marine management strategies to prioritise these locations.
- **Capacity built for marine conservation:** FFI hosted a coral reef monitoring training workshop for eight members of the Cambodian Navy, building awareness of marine conservation issues and capacity to participate in future monitoring. In 2020, the Cambodian Coral Reef Monitoring Network (CCRMN) was established, and in support of this, FFI provided training to standardise monitoring protocols and secured commitments to share data for this centralised database.
- **Improved national policy for marine conservation:** FFI provided technical advice to a new National Action Plan on IUU fishing. This policy details possible approaches to mitigate IUU fishing threats at MPA sites throughout Cambodia, and its implementation is also supported by OceanMind, building on the collaboration initiated by FFI in 2019.

Developing locally-led solutions to prevent plastic entering Cambodia's ocean

BACKGROUND

FFI has worked to embed measures to address plastic pollution in some of our existing marine sites, ensuring that the growth in our core technical capacity was available to sites threatened by such pollution. In Cambodia, this project is documenting and developing solutions to plastic waste in the Koh Sdach archipelago (where we are also developing a new Marine Fisheries Management Area, see p. 22). Despite its remote location, Koh Sdach presents a familiar South-East Asian problem, with growing use of disposable plastic overwhelming the limited waste management systems. We aim to utilise our understanding of the inherent drivers of plastic pollution, alongside our strong in-country relationships, to develop solutions targeting Cambodia's use and disposal of plastic waste.

ACHIEVEMENTS IN PREVIOUS YEARS:

Rapid assessments of the composition of plastic pollution and of the attitudes and behaviour of island communities towards plastic waste helped to identify the complex social dynamics of plastic use; for example, recycling plastic bottles is seen as an indicator of poverty. It also documented the types of plastic found in marine and coastal environments (primarily fishing nets and water bottles), and the inherent drivers of plastic waste (such as under-investment in potable water leading to a reliance on bottled water, and the fact that plastic nets are viewed as low-value and expendable).

PROGRESS IN 2020:

- **Improved understanding of plastic pollution context:** Completed a comprehensive review and synthesis of available data on plastic pollution and solid waste management in Cambodia was completed and [made openly available](#). This represents some of the first research of its kind for the country, and presented recommendations for addressing the key drivers of marine plastic pollution. The report was shared nationally and internationally to government, private sector, NGO, education, tourism and media stakeholders, as well as via a social media campaign. FFI is now becoming recognised as a leading actor on marine plastic pollution in Cambodia.
- **Greater awareness of plastic pollution threats:** FFI is engaging in the Ministry of Environment's 'Plastic Education Technical Working Group', which is supporting the design of a national curriculum on plastic use and disposal behaviours.

STRENGTHENING PARTNERS

POLICY & PRACTICE



Plastic pollution in Cambodia. Credit: Bianca Roberts/FFI

CAMBODIA: Community-led marine species conservation in the Koh Rong archipelago

BACKGROUND

Cambodia's waters support globally threatened species whose populations are declining as a result of multiple threats, including unregulated coastal development, illegal and destructive fishing, overharvesting, and unsustainable levels of wildlife trade. This project seeks to conserve two groups of flagship marine species - sea turtles and seahorses - and their associated habitats of seagrass and coral reefs through a combination of site-based action and national-level engagement on cross-cutting policy issues. This project previously focused on interventions to reduce the sale and export of seahorses, however it has been expanded to include sea turtles to consolidate previous species-focused research and ensure that species conservation interventions are integrated into MPA design and management, as well as regional and national planning.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Increased capacity to protect seahorses:** Staff from the Fisheries Administration and other partners have been trained in seahorse identification and surveying, and a locally appropriate identification guide was developed. This is now used by the Fisheries Administration to identify illegally caught seahorse specimens, along with new guidelines for the release of accidentally captured seahorses.
- **Understood seahorse trade:** Information on seahorse trade from fisher and vendor surveys across all four coastal provinces showed: hotspots for seahorse bycatch,



Focal Sites:

Koh Rong Marine National Park (containing three Community Fishery Areas)

Koh Sdach Community Fishery Area

Area Of Impact:

56,693 hectares

SECURING MARINE SITES

a perceived decline in seahorse abundance by fishers and vendors, an increase in demand and market value over time, and the market chain through to Vietnam and China. It recommended greater restrictions, enforcement on the use of non-selective gear, and better trade monitoring to meet CITES requirements; the reports and recommendations were shared with the Department of Fisheries Conservation.

- **Protected and recovered seahorse population:** Regular surveys of Koh Rong MNP using a globally recognised methodology (iSeahorse) have shown seasonal stability of seahorse populations. Two species have been recorded at the site (*Hippocampus spinosissimus* and *Hippocampus comes*) and there appears to be a healthy population based on large numbers of juveniles. Increased patrolling, which has prevented illegal fishing, and improved enforcement of trade regulations are in place to reduce threats to seahorses. The information gathered on seahorse hotspots has been incorporated into management plans developed for community fishery areas, with recommendations for gear restrictions to reduce bycatch.
- **Enhanced national capacity to protect sea turtles:** Since 2008, FFI has supported the Fisheries Administration to collect and collate relevant data into a turtle sightings database, and establish a Cambodian Sea Turtle Network. In 2018, a National Action Plan for Sea Turtle Conservation was developed, identifying the key actions and objectives needed to protect Cambodia's remaining turtles.

PROGRESS IN 2020

- **Capacity built to protect marine species:** Research by a Cambodian student, whose work was supported by this project, investigated seahorse by-catch in Koh Sdach. Three species of seahorse were present, but with low population densities, and they were caught as by-catch in trawl nets, crab gillnets and crab traps. Fisheries Administration and Community Fishery authorities lead training and awareness raising activities on turtle conservation, demonstrating the success of the 'training of trainers' approach.
- **Improved monitoring:** The National Marine Turtle Monitoring Protocol has been improved so that it provides clear, non-technical instructions on tagging, safe release and sighting reporting. During the period of lockdown (March-April) when FFI could not conduct fieldwork, two local partner organisations conducted nesting beach surveys in Koh Kong province, demonstrating the embedded local capacity built to date by the project. A sightings database was created for government, fishers and other stakeholders to record all notable marine species (e.g. sea turtles, porpoises and sharks) observed in Cambodian waters, which will help to fill important information gaps and could inform future species conservation strategies.
- **Reduced threats:** As a result of a series of sea turtle awareness workshops provided to communities by FFI and Fisheries Administration, fishers are now preferring to release sea turtles when they are captured as by-catch, according to reports in the national sea turtle monitoring database. This year, 17 sea turtles caught in fishing gear were safely released back into the ocean by fishers and reported in the national database. This is an increase in the number of sightings from the previous two years, however it is not yet clear if this represents an underlying population recovery or is attributable to improved reporting systems.



Coral reef, Cambodia. Credit: Matt Glue/FFI



MYANMAR: Collaborative conservation of marine biodiversity in the Myeik archipelago

BACKGROUND

The Myeik Archipelago, in Myanmar's Tanintharyi region on the Bay of Bengal, comprises over 800 islands and a wide range of marine and coastal habitats, including mangrove forests, coral reefs of regional importance, mudflats and seagrass beds. These provide a home for turtles, sharks, and a diversity of corals, birds and fish. The area is also of vital importance to thousands of artisanal and commercial fishers.

In 2010, when FFI initiated work in Myanmar, the technical and institutional capacity of the Government and local civil society to deliver marine conservation was critically low, scientific knowledge of marine ecosystems was very limited and only one MPA had been declared. Initial support (from Lisbet Rausing and Peter Baldwin) in 2010 led to the development of a project to (i) build in-country knowledge and technical skills, particularly in terms of data collection and basic MPA management skills, (ii) design appropriate governance and management models for MPAs in the Myeik Archipelago, and (iii) support replication of these models and introduction of the Locally Managed Marine Area (LMMA) concept where appropriate.

Based on work conducted in 2018, Myanmar may be home to as many as 58 shark and 71 ray species, including several that are listed as threatened on the IUCN Red List. Despite a nationwide ban, an active fishery for sharks and rays persists, contributing to ongoing concerns about the health of these populations. Based on this, the project has expanded to work explicitly on shark conservation, aiming to build the capacity of government and civil society partners for work on sharks, deter and reduce illegal landings of sharks and rays, increase the adoption of measures to reduce shark bycatch, and protect the critical habitats of these species in the Myeik Archipelago.



Focal Sites:

Langann Locally Managed Marine Area

Don Pale Aw Locally Managed Marine Area

Ling Long-Parawah Locally Managed Marine Area

Area Of Impact:

24,165 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

ACHIEVEMENTS IN PREVIOUS YEARS

- **Establishment of three LMMAs:** In 2017, Myanmar's first three LMMAs (multiple use areas including no-take zones) were established as a direct result of this project. LMMAs are based around existing community fishing grounds and are planned collaboratively by the communities and the Department of Fisheries. Four other villages subsequently requested LMMAs; work has since started to agree boundaries and zones for these sites.
- **MPA governance and management systems established:** Management committees are in place and management plans have been finalised for the three initial LMMAs. These clarify the rights and responsibilities of the communities and the Department of Fisheries respectively, and prohibit the use of illegal and destructive fishing gear, particularly trawling and dynamite.
- **Improved compliance with regulations:** A collaborative enforcement programme operates with the Myanmar Navy and the Department of Fisheries for the three established LMMAs, and boats and training have been provided to communities to enable them to patrol their respective LMMAs.
- **Establishment of Marine National Parks:** Plans are underway to develop three multiple use Marine National Parks (a designation that prioritises biodiversity conservation) in the Myeik Archipelago, which will help meet the government's commitment to protect 10 percent of its coastal and marine areas. All three established LMMAs lie within proposed Marine National Parks, thereby ensuring effective integration of existing protection and community engagement work into the proposed parks. FFI helped to manage and resolve concerns raised by stakeholder representatives during the process of establishing the marine national parks, and this experience will inform the evolving national MPA policy.
- **Marine biodiversity monitored:** Six years of extensive research, involving international experts, documented the coral reefs, seagrasses and mangroves of the Myeik Archipelago. The resulting [report](#) confirmed the conservation value of the area and provided a sound baseline for future monitoring. Subsequently the presence of cetaceans, boat traffic and dynamite fishing have been studied using acoustic recorders. Protected shark species, which we know are hunted in Myanmar, have also been surveyed using Baited Remote Underwater Video units. It is too soon for monitoring to demonstrate the impact of the LMMAs; however, local fishermen have reported a perceived increase in fish abundance within the LMMAs.
- **Capacity built for marine conservation:** FFI trained Myanmar's first research scuba team in 2012; they subsequently introduced permanent transects at two LMMA sites. The Department of Fisheries and civil society representatives were also trained in survey methods, data analysis, and skills needed to implement MPA management, including effective community engagement and consultation. Support to Myeik University has enabled market surveys for sharks, revealing trade in endangered and protected species in Myanmar and presenting an opportunity to explore collaboration with international organisations like CITES.



Sting ray. Credit: FFI

- **Livelihoods to support LMMA management:** Work with communities at the three LMMAs allowed fishers to broaden their market access and explore direct sales to Myeik restaurants; by removing the middlemen, fishers increased the price received and reduced the price for restaurant owners. The increased fish prices in turn improved local support for the LMMAs. A women's savings group established by the project provides loans to community members and has garnered community support for LMMAs.
- **National policy for marine conservation:** In 2017, FFI initiated a process to develop a national MPA policy. Guidance on policy development was prepared for the government, in collaboration with the University of Victoria, Australia. Myanmar's major inshore fishing grounds and associated catch type were identified (with help from the Smithsonian Institute) to inform national fisheries management. The government has welcomed the LMMA model and it is being used to help shape a new fisheries law. A Marine Turtle Working Group was established to ensure that future MPA designations take account of the habitats for and threats facing these important species. FFI has also supported development of the National Plan of Action for Sharks, which has resulted in Myanmar extending an existing ban on fishing for all ray species that are included in CITES annexes.
- **Livelihoods in support of LMMA management:** Support for new women's savings groups has been extended, including information sharing and expansion of micro-finance opportunities. Potential for community-scale seaweed farming has also been investigated this year, and a reliable buyer has been identified ahead of potential further development of this idea in 2021. Development of these opportunities increases support for LMMAs, as their implementation is associated with these schemes that include added financial benefits for the communities.
- **Marine biodiversity monitored:** Permanent coral reef monitoring transects are in place to collect information on the impacts of the LMMAs. Turtle nest monitoring has continued, with additional training implemented for a range of stakeholders, thus improving best practice to record marine biodiversity. Further surveys of sharks and rays have also been conducted.
- **Marine National Park establishment:** FFI supported the process to design and develop a wider Marine Protected Area network plan for the Myeik Archipelago, including a detailed zonation plan. Adoption of these plans will provide the legislative backbone to protect biodiversity within a landscape-scale Marine National Park, made up of smaller protected areas. FFI has been able to mediate between government ministries with overlapping jurisdiction, maintaining communication and resolving conflicting messaging to ensure community rights persist and their support for biodiversity conservation is maintained.
- **National policy for marine conservation:** FFI facilitated further development of a national policy on Marine Protected Areas, through a multi-sector stakeholder workshop. The National Plan of Action for Sharks has been finalised and is under review prior to being adopted into law. FFI has also engaged with the Myanmar government in support of the initiation of a Vessel Monitoring System. This is currently being tested on 1,000 commercial vessels, and could significantly bolster monitoring and enforcement efforts.
- **Significant leveraged funding:** In 2020, the project has been able to leverage over €3 million from the Blue Action Fund to scale up our work developing innovative LMMAs into a larger network of marine protection in Myanmar.

PROGRESS IN 2020

- **LMMA establishment:** Surveys on mangroves, biodiversity, and socio-economic issues were undertaken to support LMMA development with three additional villages, focused in an area with high potential for mangrove restoration work. However, a significant number of planned community and government consultations were postponed as a result of Covid-19 restrictions.
- **Improved compliance with regulations:** Patrols were maintained at two LMMA sites, providing regular reports to relevant government ministries (who were less able to participate due to Covid-19). LMMA communities and local fishermen continue to report a reduction in fishing by outsiders within the sites as a result of demarcation and patrolling effort, thus reducing overall exploitation of these areas, including the use of destructive practices.



INDONESIA: Protecting and preserving coral reefs by preserving traditional fishery management in Aceh province

BACKGROUND

The coral reefs of Aceh, North Sumatra, support rich and abundant marine life and provide important spawning and nursery areas for fish, but have been heavily damaged by destructive fishing practices (including dynamite and cyanide fishing) and the devastating tsunami in 2004. The tsunami also caused significant loss of life among those community leaders who had upheld the traditional customary community fisheries governance system known as Panglima Laot. This resulted in a loss of traditional ecological knowledge and the risk that the province's marine biodiversity would continue to degrade. In 2006, FFI began to work with the communities on Pulau Weh, the most north-westerly Aceh island, to re-establish the customary systems for fisheries management and restore recognition and implementation of the traditional approach to management of the community fishing grounds, known as lhoks. Capacity building, including various training activities and initiatives to diversify livelihoods, resulted in the communities managing their lhoks independently, with a collaborative patrolling system involving fishers, the Navy and fisheries authorities. Surveys subsequently indicated that reef fish were more abundant and diverse in well-managed lhoks.

Development funding from Lisbet Rausing and Peter Baldwin in 2010 enabled FFI to begin replicating this approach on two islands further south, Pulau Simeulue and Kepulauan Banyak (page 16). Simeulue is the site of the PiSiSi MPA; the name is an acronym for the three locations that form the boundaries of



Focal Sites:

Pulau Simeulue MPA (7 lhoks)

Pulau Weh MPA (1 lhok)

Other proposed/designated MPAs

Area Of Impact:

402,516 hectares

STRENGTHENING PARTNERS

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the site, which was designated by the government in 2006. Within this site, the project has focused on five lhoks in order to reduce destructive fishing practices by integrating customary lhok protection with more formal MPA management. In 2018, an Aceh Government decree laid out a blueprint for an MPA network in the province with three new sites identified for Simeulue in addition to PiSiSi, and several for the main island, with the intention of replicating the mixed lhok-MPA approach.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Effective governance at community level:** The project has gained governmental recognition for the traditional tenure of seven traditional lhok fishing areas within the PiSiSi MPA. All relevant customary law (fishing gear and fishing fleet restrictions, methods for harvesting marine products, and protection and management of threatened species and customary fishing grounds) has been brought together in a single document; this is now used to harmonise fishing restrictions across the site.
- **Effective MPA governance and management:** Measures have improved management of the lhoks within PiSiSi MPA, ensuring traditional leaders and community representation on the MPA management council and in management plan development processes.
- **Improved compliance with regulations:** Community patrolling across the PiSiSi area started in 2015, and both government enforcement agencies (police and navy) and traditional community leaders contribute to enforcement across the site. Fewer incidents of illegal and destructive fishing have been reported over time, particularly for compressor fishing. For example, in one lhok there was a 93% decline in illegal compressor fishing between 2015 and 2019, reducing not only threats to target fish species, but also potential deaths associated with this highly dangerous activity. In 2018, a survey assessed the health, safety and compliance implications of this fishing activity in order to inform conservation action, and the [resulting report](#) was disseminated internationally.
- **Marine biodiversity recovering:** Ecological baselines (coral reefs, fish populations) have been established across PiSiSi MPA. Subsequent surveys have consistently found higher reef fish biomass in lhoks compared to non-managed areas of the MPA. One of the best established lhoks supports the highest reef cover (almost 90% in 'very good condition') and highest abundance of grouper (a commercially important indicator species) found within PiSiSi.
- **Improving MPA policy regionally and nationally:** Lhok management approaches are now appreciated and respected at regional and national level, and the work to date has catalysed further lhok/MPA activity in eight districts (see [here](#) for more information). Since 2017, FFI has been involved in the Aceh MPA Taskforce, which is mandated to coordinate MPA management across the province. FFI's technical support to the Aceh Marine and Fisheries Agency has contributed to the adoption of a revised provincial-level spatial plan, and the commitment to establish a provincial-level MPA network.

PROGRESS IN 2020

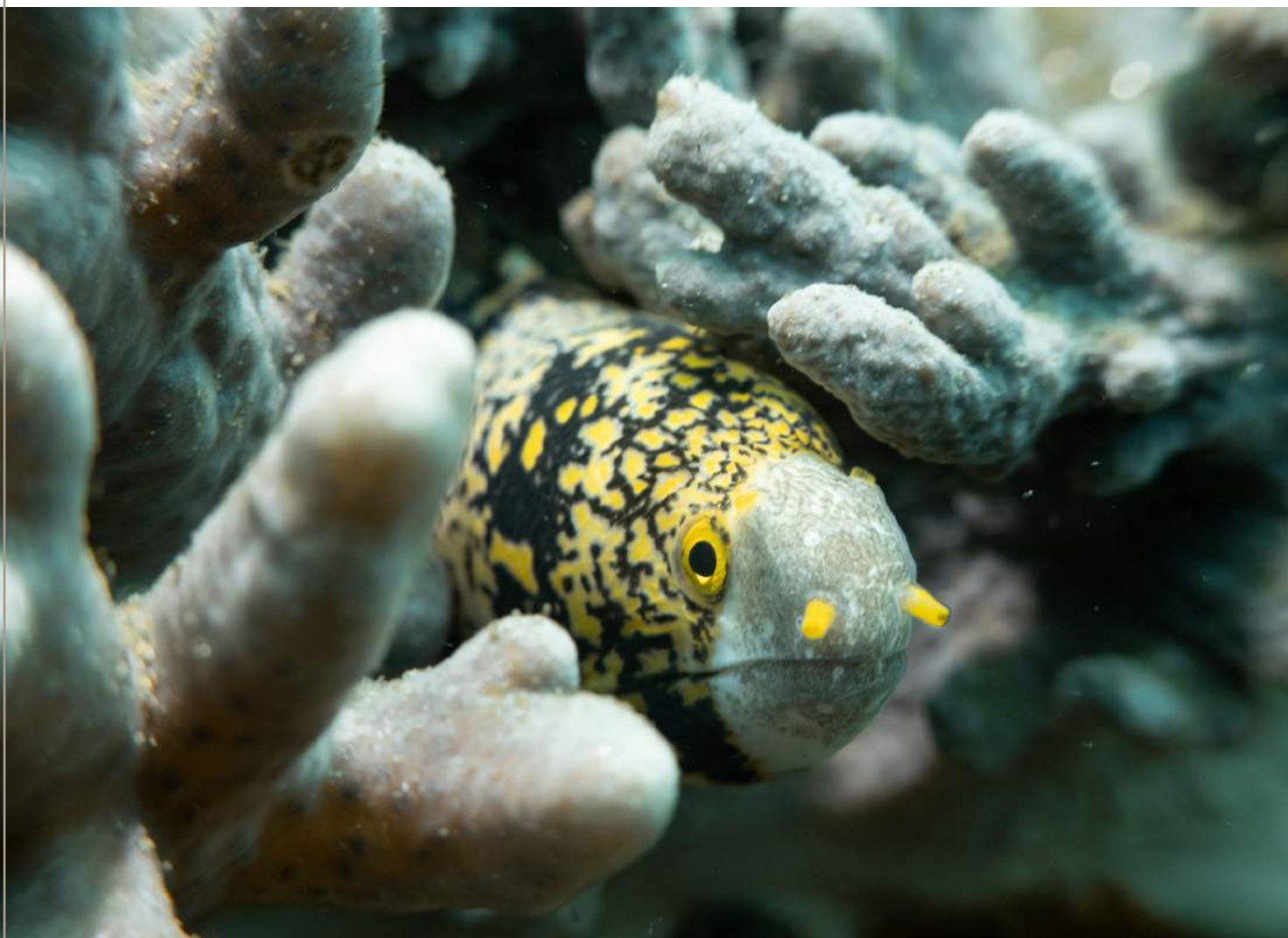
- **Effective community-based enforcement:**

Over five times more people across PiSiSi MPA participated in collaborative patrols in 2020 compared to the previous year, and over 70% of the site is now regularly patrolled (compared to only 36% last year). This grassroots surveillance effort was recognised by the national Indonesian government, who have provided official community patrolling licences to small-scale fishers in the MPA. There has also been a notable increase in the detection of destructive fishing incidents (double the number of compressor fishing incidents reported compared to 2019). While detection may be a result of expanded patrolling, increased fishery market volatility may have also driven more illegal activity. A landmark court case in July was led by the MPA enforcement bodies, and this saw five compressor fishers fined and imprisoned (albeit briefly), sending a strong signal that destructive fishing will not be tolerated on Simeulue or across the Aceh province.

- **Marine biodiversity recovering:** In-water surveys in 2020 more robustly established the trend for stable coral reef cover across the site, and an increased diversity and abundance of coral reef fish were found in lhok-managed areas compared to open access areas of the MPA.

- **Aceh MPA network embedded:** The designation history of MPAs in Aceh has been long and complex, with FFI involved in multiple stages and facilitating dialogue between communities and various arms of the government. In 2020, with an improved legal status for PiSiSi and the legal recognition of new sites in other districts, the 12 MPAs of Aceh province – across over 3,800km² of ocean – were finally established as an ecologically sound and administratively coherent network, rooted in the lhok-driven MPA system developed in FFI's original project location of Pulau Weh.

- **Destructive fishing practices addressed:** While the managers of PiSiSi MPA have made determined progress in tackling illegal compressor fishing, the wider area still faces an array of destructive fishing threats, from bottom-trawling to bomb fishing. FFI is providing technical support to a new province-wide action plan on these activities, ensuring that lessons are transferred from Simeulue to other districts. FFI is also encouraging the trialling of interventions beyond punitive enforcement by the Acehnese government (e.g. low-impact gear trials and fiscal reforms), taking advantage of opportunities to transform and adapt practices, rather than simply displacing them.



Snake eel in coral, Indonesia. Credit: Matt Glue/FFI

VIETNAM: Identifying solutions to threats facing marine biodiversity on the islands of Con Dao

BACKGROUND

The Con Dao Islands are a refuge for flagship marine species such as nesting turtles and dugongs, which have otherwise disappeared from much of Vietnam's waters, and also support reefs with high coral cover. Whilst tourism is well established, these islands have not experienced the intense development seen in most of Vietnam's coastal areas and islands, and many of Con Dao's islands remain undeveloped. Con Dao was designated as a National Park in 1993 and covers 199km², including an archipelago of 16 islands and the surrounding marine waters. The site's management, the National Park Authority, is committed to improving MPA effectiveness but has limitations, particularly around maritime enforcement and the issue of illegal fishing within the MPA. FFI identified Con Dao as an opportunity to protect relatively pristine systems and add value to the efforts of others, whilst transferring learning from our growing Asia-Pacific marine programme.

ACHIEVEMENTS IN PREVIOUS YEARS

A study and initial consultations conducted by FFI in 2019 informed the development of a project to improve the viability of Con Dao National Park, specifically focusing on marine habitats and the growing threat (and opportunity) of tourism development.

PROGRESS IN 2020

Workshops with key Government actors have prioritised interventions and informed the design of an effective, deliverable strategy for the region. FFI staff have begun to engage with a range of potential partners, and will look to formalise these relationships as and when fieldwork resumes. A tourism assessment conducted as part of project development indicates that tourism-related coastal development at Con Dao is a primary threat to biodiversity, and should be relatively resilient to the impact of Covid-19, as tourism in this area is primarily domestic. Consequently, there is a defined need to address this wider issue, in addition to direct capacity support to governmental MPA management, and such work will be stepped up in 2021.



Catch basket. Credit: Bianca Roberts/FFI



Focal Sites:

Con Dao National Park
(marine component)

Area Of Impact:

14,000 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE



HONDURAS: Connecting coastal communities for integrated seascape management in Atlántida

BACKGROUND

The Atlántida coast of Honduras encompasses highly biodiverse coastal wetlands, well preserved mangrove forests and a patchwork of islands at the southern tip of the MesoAmerican Barrier Reef. In 2015, FFI and five Honduran NGO partners began working in three socially and ecologically connected MPAs within a wider seascape – Cuero-Y-Salado Wildlife Refuge, Cayos Cochinos Marine National Monument, and part of the Bay Islands National Marine Park. The aim was to establish an integrated management system that conserves critical habitat and species and enables fishing communities to improve their livelihoods while taking increasing responsibilities for management. This seascape-level project aims to ensure cooperative and collaborative management at local, regional and national levels.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Inter-community conflict reduced:** In 2016, a small-scale fisher-led roundtable was established to resolve a long-standing conflict around access to fishing grounds between fishers from two of the sites (Cayos Cochinos and Bay Islands MPAs) which had led to widespread use of illegal and biodiversity-impacting small-mesh nets and spear fishing. This roundtable now includes a number of small-scale fisheries and enables them to set out their own priorities for the wider seascape, thus reducing the conflicts that result in destructive fishing.
- **Seascape level collaboration and governance in place:** In 2017, FFI supported the development of the multi-stakeholder Seascape Forum, involving government, NGOs and small-scale fisher organisations. This forum developed



Focal Sites:

Cuero y Salado Wildlife Refuge (marine portion)

Cayos Cochinos Marine National Monument)

Bay Islands Marine National Park (part of around Utila)

Area Of Impact:

180,313 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

an ambitious programme of potential conservation measures, ranging from elimination of bottom trawling in all the MPAs to widespread mangrove restoration. With the Forum evolving as a large hub for collaboration (rather than making legally binding decisions), a smaller, more agile Seascope Committee of MPA managers and policymakers was developed in 2018 to select and implement priority measures and actions. Since 2018, this Committee has begun defining and implementing collaborative regulations for the waters between the MPAs, to manage key fishery species (such as yellow-tailed snapper) and to address threats originating on land, namely plastic waste (see p. 37) and river-borne pollutants. By 2019, the seascape (or paisaje marino, as it is known in Spanish) had become a more recognisable concept at national level, and was included in the Honduran Presidential Office's National Plan, a key political document that sets national decision-making priorities.

- **No-take zones established:** In 2018, two new no-take zones (referred to locally as 'fish recuperation zones') were set up by local fishing communities. These prohibit all fishing across nearly 6km² of rich inshore waters around Utila island in the Bay Islands Marine National Park. Notably, this endeavour has been successful, whereas previous attempts to set up no-take zones in this seascape had been stalled by fisher-manager conflict; a possible reason for this success is that these zoning efforts were led by the communities themselves.
- **Destructive fishing reduced:** Better targeting of patrols between 2017 and 2018 in Cuero-Y-Salado Wildlife Refuge resulted in a 74% reduction in the use of the small-mesh size nets that capture juvenile fish and thus reduce the sustainability of the fishery. Similarly, in Cayos Cochinos Marine National Monument bottom trawling – an act that has the potential to damage the seabed - was reduced by 80%.
- **Species mortality reduced:** In Cayos Cochinos Marine National Monument, hawksbill turtle poaching reduced by 44% between 2017 and 2018, based on nest disturbance; several former poachers now help to patrol beaches and to coordinate turtle awareness events on the islands. At Cuero-Y-Salado Wildlife Refuge, there was a reduction in mortality from two manatee hunting

incidents in 2017 to zero for the past three years - a reduction that is significant given the small population size (~30-40 individuals).

- **Mangroves protected and restored:** Agreements with the region's three main corporate plantation owners to reduce conversion of mangroves for oil palm plantations, improve water quality leaving plantation areas and provide financial support for monitoring of mangrove forests. Through the collective efforts of partners from all three sites, 20 hectares of mangrove forest have been restored and a further 6,500 hectares were placed under improved protection.
- **Information base established:** A series of vital seascape-wide datasets now provides a base to inform management of the inter-connected habitats, key species and fisheries by the interconnected organisations of the Seascope Forum. In 2016, surveys revealed previously undocumented coral reefs within Cuero-Y-Salado Wildlife Refuge.

PROGRESS IN 2020

- **Threats to flagship species stable:** Hunting pressure on three flagship species – iguanas, hawksbill turtles and manatees – increased as result of the economic impacts of Covid-19, given the reliance of tourism income in the three seascape MPAs. By the end of 2020, these threats had stabilised through the collaborative efforts of FFI's partners and others.
- **Tackling fishing infractions through market improvements:** Fishing effort and use of damaging gears rapidly expanded in 2020 due to economic instability as a result of the Covid-19 pandemic. Building on similar work in Pemba and Aceh, the project team has begun mapping the fisheries market system in order to design a more biodiversity-friendly, economically equitable local fishery which could ensure better stability to shocks in future and remove a driver for damaging fishing activity.
- **Project impact documented:** A formal project evaluation in 2019 demonstrated positive changes in marine management and associated benefits for both local communities and biodiversity. The results have been written up and will be published open-access in Oryx in early 2021.



Building a platform for evidence-based regional plastic policy on the Honduran Northern Coast

STRENGTHENING PARTNERS

POLICY & PRACTICE

BACKGROUND

In 2019, FFI and its partners identified the need to address the growing threat of plastic pollution in Honduras, utilising the dynamic network of national NGOs, government bodies and community actors within the Atlántida seascape (see p. 35). This network exists to solve conservation issues beyond the influence of a single protected site, and the issue of plastic pollution strongly aligns with this way of working. This initiative intends to generate an evidence base to inform legislation and corporate action through coordinated systematic monitoring of macro- and microplastic waste in species, shorelines and subtidal habitats in the seascape area. Secondly, leveraging off the key role of municipal government bodies in the seascape, the project seeks to work with them on a policy development process for a single-use plastic strategy – known locally as ‘Zero Plastics’ – bringing in wider corporate engagement where needed.

PROGRESS IN 2020

- **Evidence on plastic pollution:** Beach plastic waste was collected and characterised by type and brand at four survey locations. Beach waste was dominated by soft drink bottles and bottle caps from both international (e.g. Coca-Cola) and national (e.g. Arroyo Agua) brands.
- **Engaging corporates for changed practices:** The strong municipal policy platform established by the ‘Zero Plastics’ strategy includes an expectation for improved corporate responsibility, and the project team have begun identifying and attempting to influence businesses across a variety of sectors. As well as local producers and retailers of products that contribute to plastic waste, the project has also begun a process of engagement with larger corporates up the supply chain, including a national bottled drinks distributor as a basis to find solutions to reduce the flow of plastics to the marine environment.



Plastic pollution on Scotland's beaches Credit: Tanya Cox/FFI



NICARAGUA: Conserving turtles and their marine habitats on the Pacific Coast

BACKGROUND

Nicaragua's coastal and marine ecosystems include some of the most important sea turtle habitats in the Americas. The Pacific coast has globally important nesting beaches for critically endangered Eastern Pacific hawksbill and leatherback turtles, and supports two mass nesting beaches for olive ridley turtles. As well as beach habitats, the coast comprises a mosaic of diverse rocky reefs that support turtles and a wide array of other charismatic species. FFI has been working alongside partners to safeguard sea turtles in Nicaragua since 2002, through capacity building, strategic planning, public awareness campaigns, monitoring and scientific data collection; these efforts have primarily focused on mitigating land-based threats to turtles.

Recognising the need to tackle ocean-based threats to turtles and their habitats (especially from fisheries), in 2014, FFI began work with local partners, the Nicaraguan Government, the tourism industry and coastal communities across the country's Pacific coast. A patchwork of MPAs and beach protection measures exist along this coastline, and the project seeks to ensure the coherence of this network through both better site-based decision-making and a broader focus on improving fishing practices. Effective management of this coastal MPA network will include strong local involvement, regulatory reforms and empowerment of small-scale fishery organisations, and will aim to reduce the impacts of destructive fishing (notably blast fishing with explosives and bottom trawling for shrimp).

ACHIEVEMENTS TO DATE

Destructive fishing better understood: A thorough review of the extent, legal status and impacts of a variety of fishing practices was conducted in 2015, encompassing blast fishing, compressor dive-fishing, drift-netting and long-lining. This showed that while many destructive practices were theoretically restricted, many were occurring at significant levels on the ground.



Focal Sites:

Asseradores

Estero Padre Ramos
Natural Reserve

Gigante Marine Life &
Development Zone

Isla Juan Venado
Natural Reserve

La Flor Wildlife Refuge

Salamina beach

Río Escalante Chacocente
Wildlife Refuge

Area Of Impact:

152,402 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE



Fishing vessel and eager pelicans, Nicaragua. Credit: FFI

- Marine biodiversity monitoring established:** The Pacific Coast hosts a mosaic of coralline and rocky reef habitats that had previously received minimal international focus. Biannual dive surveys conducted since 2016 have provided important information for representing this little-known biodiversity to policymakers. Local staff were also trained in survey methods, improving their skills in data collection, analysis and interpretation.
- Local governance in place for the coastal MPA network:** The development of multi-stakeholder committees at two existing MPAs and a newly proposed MPA at Gigante have allowed a range of interests to be involved in conservation decision-making at each site. The committees are the first of their kind in the country.
- Destructive fishing tackled across the MPA network:** Two municipalities developed solutions to eliminate blast fishing, including the establishment of innovative joint enforcement patrols, involving communities, the navy and local NGO partners. By 2018 a survey of fishers revealed a perceived dramatic decline in the use of explosives to fish along the entirety of Nicaragua's Pacific Coast. However, informal destructive fishing monitoring in 2019 (using smartphones) revealed a return of blast-fishing in many communities following the wide-scale civil unrest in Nicaragua. In the absence of formal patrolling, FFI worked with local fishers to identify opportunities to derive increased value from their catch as well as to diversify into aquaculture, as an incentive to reduce destructive fishing and thus protect valuable biodiversity and fisheries resources.
- Turtle bycatch mitigated through gear change:** Between 2015 and 2017, a hook exchange programme was established to address the significant issue of turtle bycatch - over 102,400 bycatch-reducing hooks were distributed to 512 longlining fishers from five communities. By 2017, surveys indicated that all fishers interviewed use these hooks, thus reducing a significant threat to turtle populations in the Coral Corridor; further work is anticipated to validate whether this uptake has been sustained. In 2018, the fisheries authority mandated the use of bycatch-reducing hooks for all longline fishing methods in national law, partly in response to the success of the hook exchange programme.
- Testing new forms of Nicaraguan MPA management:** The concept of a community-based conservation area is a completely novel initiative for Nicaragua. A proposal for a new community-based conservation area at Gigante, based on work with local fishers to establish the regulations and zoning for the site, was approved in 2017 by local authorities (although final government approval remains pending). The project started to generate social and political support for this initiative (and a neighbouring community expressed interest in developing a similar conservation area); however, civil unrest between 2018 and 2019 stalled the development of political momentum for the designation of the Gigante MPA, as well as negatively impacting local management of existing MPAs. Although some political stability returned in 2019, marine conservation is not a national priority, meaning FFI and community partners have pursued less formalised and more 'grassroots' solution to improve marine protection in Gigante and designated MPAs.

PROGRESS IN 2020

- **Deeper small-scale fishery collaborations established:** Collaborations with four small scale fisheries cooperatives have been strengthened in 2020, recognising their vital role as custodians of marine biodiversity. Through capacity building and biodiversity monitoring-related training, these cooperatives are now working proactively with FFI to identify and implement solutions to reduce the impacts of destructive fishing.
- **Better reporting of destructive fishing:** The use of smartphones by small-scale fishers to document destructive fishing incidents became more formalised in 2020, evolving into a digital network that involves the Nicaraguan authorities. This system (along with participatory interviews) has revealed significant turtle mortalities from gillnet bycatch and boat collisions, under the presence of other destructive fishing practices such as shrimp trawling and the extent of 'ghost-fishing' from lost gear.
- **New aquaculture solutions tested:** While political unrest has derailed planning across the MPA network (and thus plans to better spatially manage areas of biodiversity significance), a new model has been trialled in one community which restricts fisheries through 'concessions' with associated site-based aquaculture. While this experimental 'ranch' for red snapper faced major setbacks after an unexpected storm, fishers engaged and complied with this initiative by not fishing in the concession area in the trial period, and it may represent an important – and politically feasible - means of enabling biodiversity protection in a still-volatile national context.



Turtle hatchlings on seashore. Credit: Gurveena Chataure/FFI

TANZANIA: Co-management of marine resources on Pemba Island

BACKGROUND

The Pemba Channel Conservation Area (PECCA) in Zanzibar was declared in 2005 to protect its unique biodiversity and critical habitats, including inshore and deep-water coral communities, seagrass beds and concentrations of sailfish, black marlin and tuna. However, at present, PECCA is effectively a 'paper park', existing in name only, meaning it has limited enforcement capability and no local support for the less destructive and more sustainable fishing practices that will be vital to the site's long-term protection. In partnership with the Tanzanian NGO Mwambao Coastal Community Network, FFI identified an opportunity to strengthen the management of this important site. Since 2015, the project has sought to establish and equip village-level associations, known as Shehia Fishers Committees, along the south coast of Pemba island (the second major island in the Zanzibar archipelago) to play an active role in the management of their marine resources. This is an important first step in improving the sustainability of artisanal fishing practices within PECCA, and in reducing illegal and destructive fishing practices (which currently damage the important reef systems around the island).

ACHIEVEMENTS TO DATE

- **Local fishing restrictions piloted:** Focusing initially on two communities in southern Pemba, the project piloted local fishing restrictions which were designed, implemented and patrolled by the local village-level Shehia Fisher Committees. Communities had recognised previous declines in their catches and supported trial restrictions to see if catches could be improved, focusing initially on temporary closures within octopus fishing grounds. This approach was subsequently scaled to four additional communities, although the project initially failed to progress in one village, resulting in the community-led re-election of



Focal Sites:

PECCA

Kukuu Fishing Grounds

Kisiwa Panza Fishing Grounds

Makoongwe Fishing Grounds

Shidi Fishing Grounds

Michenzani Fishing Grounds

Stahabu Fishing Grounds

Fundo Fishing Grounds

Area Of Impact:

10,400 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

the Shehia Fisher Committee. Another site (Fundo Island) became involved in 2019, where four closures have since been completed – bringing the total number of communities involved to seven.

- **Reduced infractions of restrictions:** Between 2016 and 2018, infractions at the first octopus closure site fell by 80% and the Shehia Fishers Committee added a permanent no-take zone. Progress was slower at the second community with repeated incursions reported and a lack of consensus among community members, resulting in the closures being terminated; however, there is now local impetus to reinstate one of the closures.
- **Fishery benefits and wider ecological recovery:** Locally led data collection has shown that octopus closures resulted in increased octopus catches (2.7 times higher when comparing pre- and post-closure in 2016) in the initial project site. There are early indications that other reef species, such as parrotfish, are also benefitting from restrictions in these fishing grounds.
- **Sustainable fisher-led management:** Working towards a vision of a network of financially and operationally self-sustaining Shehia Fishers Committees along the coast of Pemba, the project is testing different income streams to underpin the management costs of the committees. FFI and Mwambao collaborated in 2017 to facilitate an octopus market system improvement initiative, in which fishers, buyers and intermediaries collaborated to develop the business case for sustainable octopus management. This allows fishers to earn more for octopus caught after a closure and, as a result, fishers themselves have invested some of their profits into the ongoing operation of the committees. Through the collection of fines for infringements, the Shehia Fisher Committees are now more viable as community enterprises.
- **Incentivising protection through eco-credits:** Working with a local microcredit specialist, Mwambao trialled an eco-credit scheme at one village in 2019, providing small loans in exchange for increased patrolling and habitat restoration. Through provision of over 150 loans, borrowers committed to conduct additional patrols of the closure site and surrounding fishing grounds,

thereby tripling the patrol effort. In addition, over 6,000 mangrove seedlings were planted through this scheme.

PROGRESS IN 2020

- **Larger-scale marine governance:** The first Collaborative Management Group in Zanzibar was established, and includes four of the Shehia Fisher Committees. This group will agree on patrol procedures and governance arrangements for the collaborative management area. This approach builds on similar initiatives in mainland Tanzania, wherein individual fisher committees collaborate to manage a shared area, with shared activities (e.g. patrols), harmonised by-laws and common conservation targets, so as to enable more efficient monitoring, control and surveillance, enhance collaboration between neighbouring communities, and overall strengthen management of joint marine resources.
- **Coral reef monitoring initiated:** Participatory coral reef monitoring has been started at two sites to establish baselines for coral reef health within and outside the octopus closures, using a reef health scoring system. This is providing information on the impact of closures and has identified one site that may be poorly located to secure resilient reefs, as it is an area which has been previously damaged.
- **Reduced infractions of restrictions:** Foot and canoe patrols of fishing grounds have been initiated by four communities, and at two of the seven sites initial data indicates that the total number of arrests and fines issued has decreased between 2019 and 2020 (although the average number of patrols of fishing grounds conducted each month remained relatively consistent), indicating a reduction in infractions.
- **Fishery benefits:** In three of the four communities of Fundo Island, average octopus weight and the catch per unit effort (total weight of all octopus caught each spring tide per fisher) has increased in the 2020 opening periods compared to the 2017 baseline (prior to management). The catch per unit effort increased by between 127% and 175%, and the average octopus weight increased by between 73% and 185% across different communities.



Fishing vessel in Pemba.
Credit: Hannah Becker/FFI

KENYA: Coordinated Community Conservation in Lamu and Tana River counties

BACKGROUND

The north Kenya coast, from the Tana Delta to the Somali border, supports a mosaic of largely intact coastal and marine habitats, including the country's largest wetland and 60% of the country's mangroves. These ecosystems support diverse marine species, including sharks, dolphins, dugongs, and sea turtles, as well as rich inshore and pelagic fisheries, and coastal communities depend on them for their livelihoods and well-being. However, these marine ecosystems are threatened by unsustainable harvesting, pollution, deforestation and habitat conversion by large commercial interests and land speculators. A major threat is the Lamu Port and Lamu-Southern Sudan-Ethiopia Infrastructure Corridor, a transport and infrastructure initiative that is likely to impact sensitive marine ecosystems, particularly around Pate Island.

Since 2011, FFI has been working with the Northern Rangelands Trust-Coast, a regional office of the Northern Rangelands Trust (NRT –see the accompanying Halcyon Land & Sea report for more details). It supports several community conservancies in the north Kenyan coastal zone around Lamu. This project particularly focuses on the support and further development of Pate, Kiunga and Lower Tana Delta Community Conservancies. It will ensure the effective management of this area by integrating governance and management mechanisms across different scales, empowering coastal communities to engage in biodiversity conservation and sustainable fisheries management.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Management plans and fisheries restrictions:** Management plans were developed for the six community-managed areas in Pate and are being implemented (despite delays in official approvals). Two no-fishing zones (totalling 80 hectares) were established under these management plans, and two temporary octopus closures were trialled in 2018 (with support from FFI's partner in Tanzania, Mwambao Coastal Community Network - see p. 41). By 2019, these had resulted in additional octopus catch for fishers (totalling nearly 1,000kg), and the project team ensured that buyers were available to purchase the octopus catch at good prices.
- **Improved patrolling and enforcement:** Pate Conservancy and local Beach Management Units (established by communities) are responsible for managing fishing grounds and jointly enforce regulations in the community-managed areas. Twelve community rangers conduct daily beach and boat patrols to monitor illegal fishing, turtle poaching and mangrove destruction. In



Focal Sites:

- Pate Community Conservancy
- Pate-Shanga Ishakani-Shanga Rubu Co-management Area
- Mtangawanda Co-management Area
- Kizingitini Co-management Area
- Faza/Siyu/Mbwajumwali Co-management Area
- Tchundwa Co-management Area
- Ndau Co-management Area
- Kiunga Community Conservancy (with five pending Co-management Areas)
- Lower Tana Delta Community Conservancy

Area Of Impact:

161,240 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE



2018, over 190 illegally extracted mangrove poles were confiscated, illegal logging camps were disbanded, and loggers and turtle poachers were apprehended. Improved prosecution by the authorities has reinforced the recognition of the rangers' authority and promotes better compliance with the regulations.

- **Improved livelihoods through fisheries development:** A Fish-to-Market programme was piloted in 2016 at Pate, aiming to improve returns for local fishers (and thus improve compliance with fishing restrictions) by adding value through production, processing and marketing of fish. However, to date this has not proved successful due to poor economic returns as a result of underlying infrastructural issues such as limited access to freezing, processing and distribution opportunities. NRT-Coast has reflected on lessons learned through this initiative and is exploring potential strategies to increase its success.
- **Illegal fishing activities addressed:** Pate Conservancy staff engaged with local communities around the use of destructive and illegal beach seine fishing, which is highly unselective of catch. A local conflict resolution committee was established to address issues arising from beach seine fishing, which is particular problem in Kiunga Marine Reserve.

PROGRESS IN 2020

- **Management plans and fisheries restrictions:** Registration certificates and fisheries by-laws for 18 Beach Management Units in two community conservancies received government endorsement

in 2020. This will help to legitimise their operations, securing the rights of communities to sustainably manage their fisheries resources. Two temporary octopus closures were successfully implemented in Pate conservancy for another year; as a result, communities are seeing increased total catch, individual size of octopus, and improved market price, as well as increased participation of women in marine management activities. Additional closures have now been proposed in both Pate and Kiunga conservancies. The project is also in the process of formally establishing the first community-managed areas in Kiunga and additional areas in Pate, which will formalise community management of their respective fishing grounds.

- **Improved patrolling and enforcement:** Conservancy rangers and community patrol teams from both conservancies were trained on fisheries Monitoring, Control and Surveillance to increase the level of compliance, and joint patrols with the Fisheries Department, Kenya Wildlife Service and Kenya Forestry Service have been undertaken. In Pate, 25 fishers were fined, and 33 received warnings for infringements within the community-managed areas.
- **Improved livelihoods through microfinance and fisheries:** A women's microfinance programme was launched in three conservancies to enable communities to establish businesses for income generation, and thus reduce their dependency on fishing income. A third iteration of the Fish-to-market programme is currently under review with project partners, building on learning from failures to date, and this is expected to be further developed next year.

SÃO TOMÉ AND PRÍNCIPE: Supporting the Development of a National MPA Network

BACKGROUND

São Tomé and Príncipe is a small nation of two islands off the coast of West Africa. The islands and waters surrounding São Tomé and Príncipe include important breeding grounds, habitats and nesting areas for sea turtles and seabirds, and the country is known for its high levels of fish endemism and important shark and cetacean populations. The islands' communities are dependent on fisheries for livelihoods and protein, but have experienced a decline in catch. With local and international NGO partners, government and local communities, FFI is supporting the designation of an MPA network and encouraging local communities to be engaged with the process of MPA design and subsequent management to ensure local support and ownership, while also working with these communities to reduce their dependence on fishing.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Information for MPA development:** Surveys supported in 2019 produced information to inform designation of the proposed MPA network and/or provide baselines for assessing its impact. Baited remote underwater video systems were used to document the spatial distribution of fish species, and local partner staff were trained to perform these surveys in future. Community-led landing surveys were established to determine quantity and composition of



Focal Sites:

The Island of Príncipe
Biosphere Reserve (marine
component)

Area Of Impact:

57,604 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

fish catches and socio-economic surveys gathered data on people's perceptions regarding the condition of the marine environment and MPAs, and information on how and where local people fish.

- **Co-management legislation:** Discussions were held with key stakeholders, including government representatives and local communities, regarding MPA design, and a formal consultation process on proposed 'co-management' (management by both government and fishing communities) planned on São Tomé.
- **Significant leveraged funding:** In 2019, a large grant from the Blue Action Fund was secured to support continued surveys, consultations and mapping to lay the groundwork for future designation of an evidence-based and participatory MPA network for São Tomé and Príncipe that will benefit both biodiversity and people.

PROGRESS IN 2020

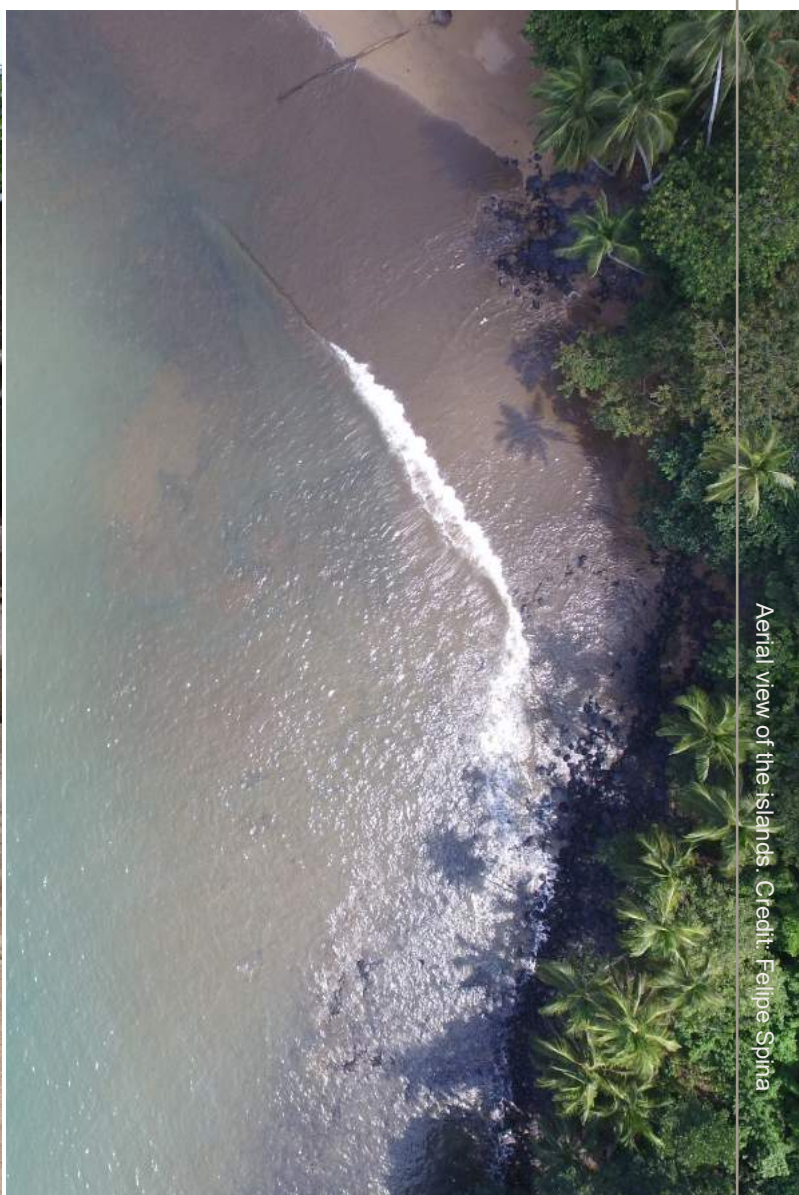
- **Information for MPA development:** Fish abundance and distribution around both islands has been characterised through the use of baited remote underwater video surveys, greatly

strengthening available baseline data to inform MPA design. In addition, further fish landing survey data has been collected across 18 communities. Seabird tracking data collected through tagging on the Tinhosas islands (uninhabited islets 23 km southwest of Príncipe that support important seabird populations) has identified important foraging habitat, and underwater mapping was completed for São Tomé, generating key information to inform MPA design. The project is also helping to establish a digital database to map fishing hotspots in the artisanal fishing zone around São Tomé to better locate possible sites for MPA designation.

- **Co-management legislation:** FFI contributed to a review of the national fisheries law which, though the process awaits completion, now recognises MPAs as a mechanism for fisheries management, establishing government support for MPAs.
- **Community engagement:** Community engagement was expanded this year, including further information collection, consultation and awareness raising on MPA co-management approaches. Thirteen fishers were trained to support ongoing MPA awareness activities.



Traditional fishing boat. Credit: Guillermo Portinos



Aerial view of the islands. Credit: Felipe Spina

CABO VERDE: Participatory research and action for conservation on Maio and Brava Islands

BACKGROUND

The archipelago nation of the Republic of Cabo Verde is a marine biodiversity hotspot supporting a wealth of globally important and endemic marine species. This includes 17 species of whales and dolphins, more than 60 species of sharks and rays, and five species of marine turtle, with one of the three largest nesting populations of loggerhead turtles in the world.

Lying close to the main island Santiago and capital Praia, Maio is under increasing pressure from tourism, coastal habitat destruction, and unsustainable and illegal fishing. In contrast, the remote and highly biodiverse island of Brava has low levels of development, with a population highly dependent on fisheries for livelihoods and protein. FFI is working with two local conservation NGOs – Maio Biodiversity Foundation (FMB) on Maio and Biflores on Brava -to support the development of an effective, and locally supported, national network of MPAs.

ACHIEVEMENTS IN PREVIOUS YEARS

- **MPA management plan for Maio:** A management and zoning plan was developed for an island-wide protected areas network, which included new protection measures for important marine habitats. FFI worked with in-country partners (including FMB) to ensure available data and local community perceptions were built into the design of the MPAs. The five-year management plan for the protected areas was submitted to the government in 2014, followed by a monitoring plan in 2016.
- **MPA support and compliance:** Since 2018, the five protected areas with marine components were regularly patrolled by government agencies and FMB rangers, with fish inspectors checking local ports. The group called Guardians of the Sea (a voluntary fisher-led reporting system to monitor inshore fishing grounds for illegal activities and to record sightings of megafauna species) has gained significant momentum since it started. In addition, social surveys in 2017 demonstrated high awareness



Focal Sites:

Maio UNESCO Man and Biosphere Reserve

Parque Natural do Norte da Ilha do Maio MPA

Reserva Marinha das Casas Velhas MPA

Reserva Natural da Praia do Morro MPA

Reserva Natural da Lagoa Cimidor MPA

Paisagem Protegida das Salinas do Porto Ingles MPA

Brava Island

Area Of Impact:

28,487 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

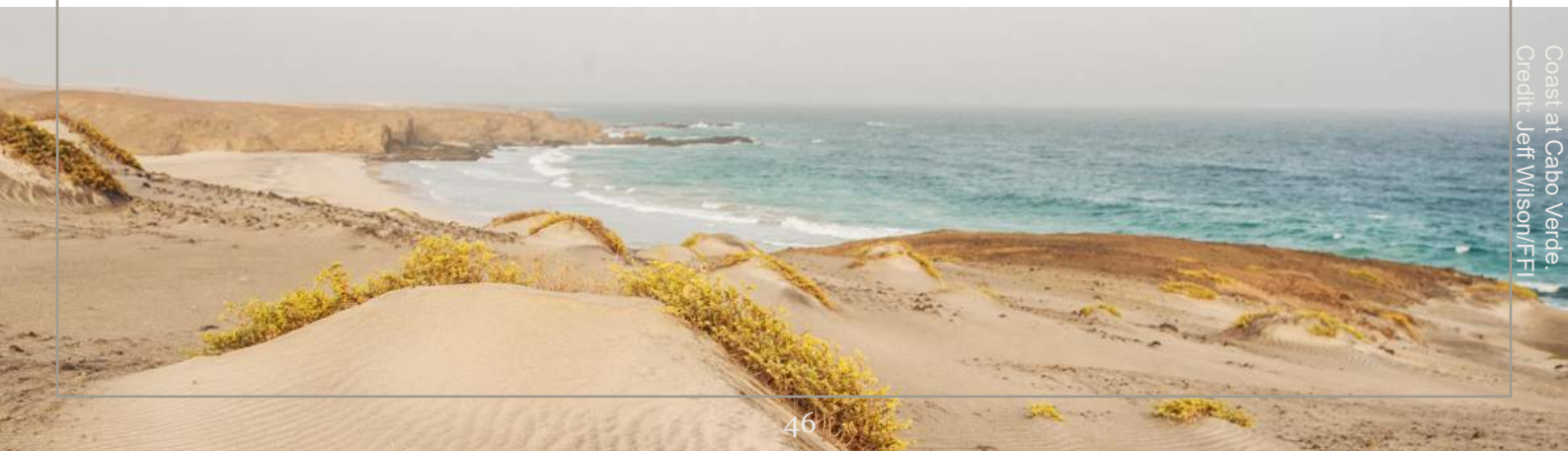
and support for MPAs (e.g. 90% of respondents believed that protection of MPAs could increase job opportunities).

- **Shark and ray conservation:** In 2014, surveys confirmed the presence of nursery and breeding grounds for sharks around Maio, as well as the [first country record](#) of the smoothtail mobula ray (near threatened). The surveys highlighted the threats posed by local fishing, with sharks comprising 72% of non-target catch. A code of conduct for the safe handling and release of sharks was developed for sport and recreational fishers, and 129 fishers were trained in shark monitoring and safe release techniques. Approximately 50 fishers (~50%) have now pledged to stop catching sharks.
- **Turtle poaching reduced:** FMB patrol nesting turtle beaches, and the rate of egg poaching has fallen over the last seven years. A national legal framework for the protection and conservation of marine turtles was introduced in 2018 and will reinforce FMB's work.
- **Sustainable livelihood generation:** Recognising that a diversified income base is essential to reduce dependence on fishing, a homestay programme enabling visitors to stay with local hosts was launched on Maio in 2017. By 2019, the programme had generated significant income to diversify livelihoods beyond fishing and provide earnings for women in the communities.
- **Development impacts reduced:** FMB has engaged successfully to inform impact assessments for proposed construction projects on Maio that could have otherwise significantly impacted marine environments. FMB also suggested ways in which to prevent and mitigate potential impacts for future developments, demonstrating their growing reputation as a well-informed and trustworthy organisation.
- **Partner capacity built:** FFI's extensive institutional and financial support to FMB over the past seven years has been critical to the continued existence of the organisation and has supported them through a period of instability and significant staff turnover.

- **Extending marine operations to Brava:** In 2018, we began engaging with partner Biflores, a small NGO on Brava Island. Through this partnership, we collected extensive data to help identify marine conservation needs and provide baselines for measuring change, including a study into the extent of human-shark conflict on the island, showing that fishers perceive sharks to be competing for the same fish stocks.

PROGRESS IN 2020

- **MPA management plans approved:** The approval by government of the Maio protected area network management plan (which includes the MPAs) was finally received in October 2020. This is the first fully approved protected area management plan for the country.
- **Enhanced MPA compliance:** The Guardians of the Sea continued to patrol their fishing grounds, reporting a total of 66 incidents of illegal activities and 264 megafauna sightings. The Guardians of the Sea programme is now being replicated in Boavista and Sal through local partners, and there are plans to introduce it to Brava in 2021. The number of enforcement trips by local authorities (including fish inspectors and the maritime police) have all increased this year.
- **Shark and ray conservation:** Further information collection on the distribution, abundance and bycatch of elasmobranchs was collected through another round of snorkel surveys, which will be supplemented by baited remote underwater video surveys and planned drone surveys. FMB raised concerns about the number of sport fishing business operating in one of the fully protected zones and contacted the companies concerned to stop them fishing there. The government are currently training three protected area guards to support the monitoring of this site.
- **Extending marine operations to Brava:** FFI has continued to provide significant support to Biflores this year, assisting them to manage changes within their board, and to respond to staffing challenges as a result of Covid-19; as a result, development of marine project activities has been severely delayed with the majority shifted to 2021.





SCOTLAND: Supporting the development of effective marine conservation NGOs

BACKGROUND

Scotland's coasts support an astonishing array of sea life with cold-water corals, iconic species such as critically endangered common skate, and high densities of cetaceans. However, high impact fishing continues to erode sensitive inshore habitats, upon which both biodiversity and fish productivity rely. Building on FFI's early work in the Firth of Clyde (see p. 79) we continue to support two local NGOs to advance effective marine conservation in Scotland: Community of Arran Seabed Trust (COAST) and Sustainable Inshore Fisheries Trust (SIFT). The missions of these partners complement FFI's wider programme of marine work in Scotland, helping to highlight the need for reforms that will help to address damaged inshore fisheries and demonstrate the value of locally led conservation action.

ACHIEVEMENTS IN PREVIOUS YEARS

COMMUNITY OF ARRAN SEABED TRUST (COAST)

- **MPA establishment and management:** Building on the no-take zone in Lamlash Bay previously established by COAST, FFI subsequently supported them in their efforts



Focal Sites:

Firth of Clyde, Scotland,
UK (South Arran Nature
Conservation Marine Protected
Area)

Area Of Impact:

27,987 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

to help establish a larger MPA across the whole of South Arran, which was successfully designated in 2014. Further consultations and efforts by COAST led to statutory management regulations to prohibit dredging and limit trawling activities within the MPA. These ground-breaking measures were put in place by the Scottish Government, despite strong lobbying efforts by the fishing industry, thus demonstrating the value of local community leadership.

- **Partner capacity built:** FFI has helped COAST to develop its institutional strategy and governance systems and has provided ongoing organisational mentoring and advice. Our engagement with COAST paved the way for the development of the Coastal Communities Network (see p. 62). FFI continues to provide support to COAST as necessary, but they are now a well-established and independent community-based organisation.

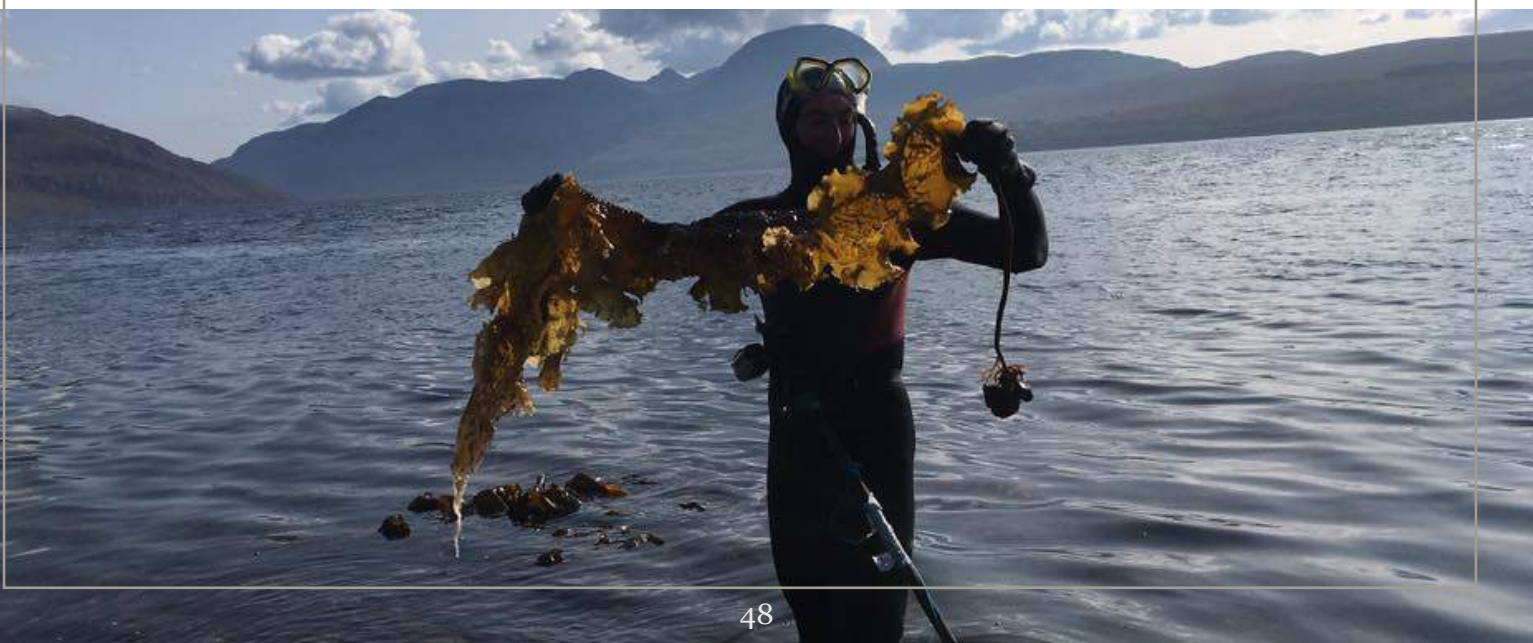
SCOTTISH INSHORE FISHERIES TRUST (SIFT)

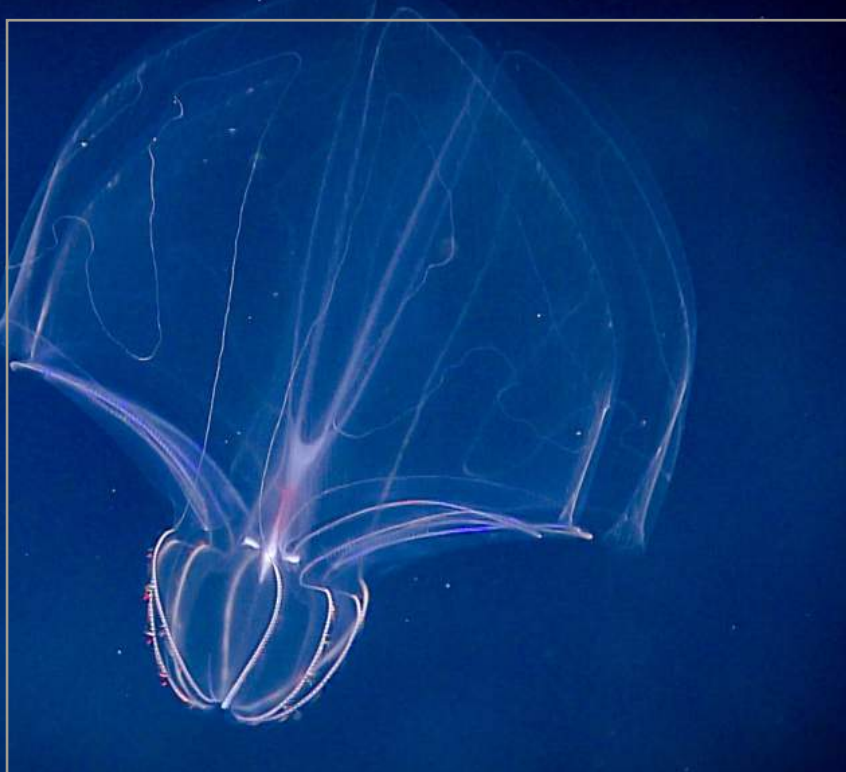
- **Marine legislation reforms:** In 2015, SIFT submitted an ambitious proposal for zoned fisheries management in the Firth of Clyde, including restrictions to dredging and bottom trawling. However, despite its strong scientific rationale, this innovative but controversial proposal was rejected by the Government. SIFT continue to lobby for reform of fisheries legislation in Scotland, adapting their strategies in line with the dynamic political environment. In 2018, SIFT identified a new threat to inshore waters: proposed commercial mechanical dredging for kelp. They led a strong campaign of political engagement to help ensure the law was amended to prevent such developments. In 2019, they contracted independent reviews on the importance of kelp and the damage caused by mechanical harvesting to generate a parallel evidence base to inform government lobbying and ensure that this important piece of legislation remains firmly in place.

- **Partner capacity maintained:** We have worked with SIFT since its inception to help develop governance systems, strategies and fundraising capacity. We continue to support SIFT both financially (underpinning core operations) and technically (through advice and board membership) and provide responsive mentoring when required.

PROGRESS IN 2020

- **Partner capacity:** FFI continued to support both COAST and SIFT in strengthening their institutional capacity and with high-level input into their strategic direction, governance and management systems.
- **Legislative reforms:** A review of kelp harvesting was commissioned by the Scottish Government, in response to the legislative amendments put in place last year. SIFT have worked to highlight the lack of artisanal harvesters in this process (the majority were industry actors). In addition, SIFT have identified a new threat with the apparent issuing of significant numbers of concessions for seaweed harvesting without any plans in place for approval processes, impact assessments or community consultation. SIFT is keen to ensure that seaweed farming does not cause the same problems as salmon farming, and that are fully consulted, engaged in and benefitting from proposed farming where possible.
- **Blue carbon:** SIFT is leading in Scotland in promoting a consideration of blue carbon within both marine management and carbon campaigning spaces – working with both the Scottish Government and Stop Carbon Chaos. New research is emerging nationally which flags the links between the sequestration capacity of marine sediment and possible disturbance and loss related to bottom trawling and dredging and SIFT are positioning to engage on this issue.





POLICY & PRACTICE

Preventing potential impacts of Deep Sea Mining to marine ecosystems

BACKGROUND

The world's increasing demand for mineral resources has resulted in the exploration of new frontiers, including the deep sea, which is being targeted for a number of rare earth minerals key to new technologies. Deep sea mining exploration and exploitation poses a severe threat to marine wildlife and ecosystem health. Unique and understudied environments are at risk of wholesale destruction in both national and international waters. Through engagement with corporations, governments and inter-governmental bodies, FFI has the opportunity to integrate marine biodiversity considerations into a burgeoning sector before its predicted boom into a ubiquitous and highly damaging industry. FFI is challenging and supporting companies and regulators to better assess biodiversity risk and to adopt best practice guidance in avoidance and mitigation of impacts.

ACHIEVEMENTS IN PREVIOUS YEARS

Last year FFI undertook a detailed review into the impacts of offshore and deep sea mining on biodiversity, and this identified a significant risk that deep sea mining activities could affect vulnerable biodiversity and habitats, and damage or destroy fundamental elements and functions of marine ecosystems. FFI actively engaged with a call for a moratorium on deep sea mining and joined the Deep Sea Coalition to collectively lobby on this issue. Based

on the evidence presented in the review, FFI was invited to participate in a meeting of the International Seabed Authority and proposed a motion for the World Conservation Congress in support of a proposed moratorium on seabed mining.

PROGRESS IN 2020

The FFI [deep sea mining report](#) was formally launched in March 2020 by Sir David Attenborough in an interview with Sky News, and this created significant media coverage on these issues. Building on this profile, FFI was invited to provide tailored technical support to corporate and government stakeholders, including four briefing papers for the UK Government and input to the International Seabed Authority, and we helped a range of other NGOs to access and use the information in the report ([short summary available here](#)). Lobbying of the Deep Sea Coalition (in which FFI has continued to be very active during 2020) and direct requests via the UK government have contributed to the International Seabed Authority's decision to delay the development of regulations and permitting to 2021 (at the earliest). Without this intervention, the International Seabed Authority would have moved forward with permitting ahead of agreed and appropriate operational procedures being set in place. There is now more time to develop effective procedures for environmental impact assessments and mitigation strategies, and more time for the moratorium to gain traction.

Ongoing Projects

These are projects that FFI is still active in delivering, but that did not receive Arcadia Marine Initiative funding this year.

Sea salt harvested from Cabo Verde. Credit: Jeff Wilson/FFI

TURKEY: Expanding effective MPAs across the Mediterranean Coast

BACKGROUND

The Gökova Bay MPA was established in the rich and diverse waters around Turkey's Mediterranean coast to offer protection to globally important seagrass beds, commercially important fishing grounds and nursery habitats for critically endangered sharks. Insufficient capacity within the management authorities, however, has meant that implementation of the MPA regulations have been ineffective, allowing overfishing and illegal fishing to continue with consequent damage to sensitive habitats and species.

In 2012, FFI started working with local NGO Akdeniz Koruma Derneği (AKD) to develop a community-based management model for Turkey's first network of six strictly protected no-take zones in the Gökova Bay MPA (documented [here](#)). These no-take zones were created through collaborative lobbying and action by AKD and local fishers, and have proven so successful, in terms of fish biomass recovery, that other sites along the coast have shown interest. The project is now actively scaling up its successful approach to a further three MPAs along 570km2 of the Mediterranean coast.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Reduced illegal fishing:** Collaborative patrols led by AKD, involving community rangers and the coastguard, were initiated in 2013. Regular surveillance and patrols, including random night watches, are now in place for all six no-take zones and for a wider protection zone (agreed in 2016) to protect important coralline and rocky reef habitats and extensive seagrass meadows. As a result of patrolling efforts, illegal fishing was reduced by 60% between 2014 and 2017. Most incidents now concern amateur or recreational fishers rather than commercial trawlers or purse seiners, which have been banned from the bay.



Focal Sites:

Gökova Bay Special Environment Protected Area (SEPA)

Fethiye-Göcek SEPA

Kaş-Kekova SEPA

Köyceğiz-Dalyan SEPA

Patara SEPA

Datça-Bozburun Peninsula SEPA

Cape Gelidonya No Fishing Zones

Area Of Impact:

289,297 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

- **Fish population recovery:** Monitoring has shown that fish biomass in the no-take zones is up to six times higher than in unprotected sites, with numbers of commercially important groupers also significantly greater. This is probably attributable to a complex range of factors, and ongoing analyses of the monitoring data will better explain the unexpected scale of recovery observed. Fisher income has also increased almost four-fold since the project started, boosting community support for the management measures. The use of mobile technology by the local fisheries cooperative is improving monitoring of fish landings and generating information to help inform management of this area, and analyses conducted in 2019 indicate a potentially significant increase in fish densities in the region; further data is needed to corroborate these findings.
- **Recovery of key species:** In 2014-15, sandbar sharks (regionally endangered), loggerhead turtles (vulnerable) and Mediterranean monk seals (endangered) were observed in the bay for the first time in many years. More regular patrolling has revealed permanent populations of sharks in the area. Mediterranean monk seals subsequently bred in four different caves in the MPA, which are now under strict legal protection.
- **Replication of the management approach:** Impressed by the results from the no-take zones in Gökova Bay, the Turkish Government invited AKD to propose further sites for protection. Five additional sites for no-take zones along the Turkish Mediterranean coast were proposed in 2016, revised and submitted again in 2019. At Fethiye Bay, south of Gökova Bay, an agreement has been reached with local stakeholders to introduce both no-take zones and gear restriction zones, and the project has started building capacity for this initiative with local fishers.
- **Partner capacity built:** FFI has helped AKD build the governance and operational systems that will allow it to grow into a stable and professional organisation, able to capitalise on the opportunities emerging for wider marine conservation influence in Turkey. The project has received awards, including one from the UN Food and Agricultural Organisation for its model of fisheries co-management. As a result, AKD's profile is further increasing and they were invited to speak at the UN Ocean Conference in New York in 2017. FFI secured a generous grant from the Endangered Landscapes Programme (ELP) that is helping the project scale up its work and providing important

investments into AKD's financial management and impact tracking.

PROGRESS IN 2020

- **MPA management and compliance:** AKD-led ranger patrols were maintained in Gökova Bay throughout the year, and have been expanded to cover five designated NFZs at a second MPA site to the south. The community patrols use [SMART](#), free open-source software which enables real time tracking and recording of patrol logs. Underwater clean-ups in Gökova Bay removed approximately 51 kg of lead, 295 m of fishing net, 321 km of fishing line, 132 m of rope/thick line and 22 kg of other plastic debris reducing the threat of entanglement within the project area.
- **Key species recovery:** Surveys for Mediterranean monk seals have confirmed signs of activity in four caves in Gökova Bay. Physical habitat restoration was trialled through the construction of a haul-out ledge in an otherwise perfect seal cave, and a seal was subsequently recorded using the ledge.
- **Replication of the management approach:** In September 2020, the Turkish government approved the designation of an additional 350 km² of marine protected areas (comprised of both complete no-take zones, and broader fisheries restricted areas). Building on monitoring initially designed and developed with Arcadia funding, the ELP project is enabling data collection in additional areas and habitats and is tracking 17 socio-ecological indicators.
- **Partner capacity built:** This year, FFI supported AKD in the implementation of HR and financial protocols and the strengthening of data management.
- **Financial sustainability:** FFI led a review of possible financing options and identified: invasive fish sales, pufferfish pharmaceuticals, experiential philanthropy, mooring buoys user fees and fundraising in the expatriate community as the best options for pilots. In support of this, fishing of pufferfish was authorised for pharmaceutical purposes in March 2020, and a trial longline method targeting pufferfish has been designed. In addition, an assessment of Blue Carbon storage in the project area began with initial testing of in-water soil carbon sampling techniques led by AKD, under guidance from ELP partner Bangor University.





Fish catch in Costa Rica. Credit: Kate West/FFI

COSTA RICA: Reducing threats of destructive fishing and promoting fisher livelihoods

BACKGROUND

Costa Rica's highly biodiverse inshore waters support outcrops of coral habitat, high levels of marine species diversity and endemism and widespread artisanal fisheries. However, despite its global prominence as an environmental leader, Costa Rica has not historically made ocean protection a national priority, meaning that destructive fishing has become a significant conservation concern. Since 2012, FFI has collaborated with a Costa Rican fisheries development NGO called CoopeSoliDar to address widespread threats from destructive fisheries and to support local fishing cooperatives to sustainably manage their waters. This has involved the application of spatial protection (including Marine Areas of Responsible Fishing [MARF] and Areas of Marine Management [AMM]) and promotion of much-needed national fisheries governance reform to tackle bottom trawling for shrimp. FFI's work builds on a fisher-led campaign to develop a no-shrimp-trawling zone in one of the responsible fishing areas in a community called Tárcoles, which lies on the Gulf of Nicoya on the Pacific coast of the country.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Bottom trawling reduced:** Building on the Tárcoles no-shrimp-trawling zone, we worked with CoopeSoliDar to lobby for reform of destructive bottom trawling



Focal Sites:

Tárcoles Marine Area of Responsible Fishing

Cabo Blanco Area of Marine Management

Area Of Impact:

109,413 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

practices, using the Tárcoles trial as a model. A review conducted in 2012 provided national policymakers with insight into existing national bans around the world and their effectiveness, and contributed to these lobbying efforts. The closure of the Tárcoles trial zone to shrimp trawlers was extended indefinitely by the Government in 2013 (see [here](#)); this decision came as a result of the project, and specifically the demonstration of increased artisanal fish catch in this area following the cessation of trawling activity. Despite immense challenges, only one trawler has accessed the Tárcoles closed zone since it was established (and this infraction was swiftly resolved). This continuing success has seen Tárcoles become a hub for so-called 'touristic fishing' since 2019. This involves an artisanal fisher taking client(s), mainly Costa Ricans from the city, out to catch fish, typically using single-hook lines. While this brings substantial economic benefits, it also creates management and monitoring problems, including small-scale trawling for shrimp as bait. Studies supported by FFI have generated knowledge about this issue, analysed legal options and generated advice on an appropriate regulation (although no regulations have yet been forthcoming).

- **National policies developed for shrimp trawling:** In 2015, a government-led process facilitated by CoopeSoliDar was initiated to develop a new regulatory framework for sustainable shrimp fisheries; FFI contributed analyses of global trawling policy and socio-economic studies in support of this. A new national policy for the sustainable use of shrimp was proposed in May 2017, to regulate shrimp trawling in much of Costa Rica's inshore waters (between 3-5 miles) through the zoning of fishing activities. This plan sought to balance the needs of local communities, income generation and conservation,

but was challenged by other environmental groups who sought a total ban on shrimp trawling in Costa Rica's waters. In the absence of this total ban, the country's fishery ministry announced its intention in 2019 to develop a new law to renew expired shrimp trawling licences, causing further controversy.

- **Designation of a new kind of MPA for Costa Rica:** Working with the local community in Cabuya, FFI and CoopeSoliDar contributed to the development of a new model for ocean protection in Costa Rica, where governance of the site is shared between the community and the government under a co-management agreement. This small-scale fishing community identified important zones for both conservation and traditional fisheries. As a result, the Cabo Blanco Area of Marine Management, encompassing the waters used by Cabuya community, was established in 2017. This is the first coastal MPA in the country to involve local people in decision-making. The community's fishing areas are incorporated into the site's zoning plan. In 2018, the fishing association of Cabuya was registered as a legal entity and, as a result of work by CoopeSoliDar with the Costa Rican Ministry of Environment, this is now Costa Rica's first genuinely co-managed inshore MPA.
- **Decision to hand over:** With significant capacity built in Costa Rica, the decision was made to hand this work over to local partners and for FFI to phase out in 2020. A consolidated exit strategy was developed to ensure that lessons from a diverse range of successes and challenges could be captured and shared, and to ensure that pipeline initiatives had a clear trajectory and partners would be able to implement them without future FFI support.

PROGRESS IN 2020

- **National policies on shrimp trawling:** In October 2020 the Costa Rican President vetoed a proposed new law which would have revived shrimp trawling, signalling the country's long-term move away from this destructive fishing practice. While FFI has not been directly involved in this work since 2016, the studies we commissioned prior to the new laws are regularly cited in the debate. Our long-standing contention still stands that the volatility around this issue could have been avoided if there had been substantial, timely social support for those affected by the ban (as proposed through our previous intervention on this issue).
- **Co-management supported within Costa Rica's newest MPA:** Although many field-based activities were delayed due to Covid-19 restrictions, collection of fishery-related data at the Cabo Blanco Area of Marine Management was completed to support the ongoing sustainable use of the MPA by the Cabuya community. Given Costa Rica's generally stringent approach to MPA management (most MPAs are zero access/zero use reserves), this new kind of "co-managed" MPA needs new solutions to enable ongoing fishery use, particularly regarding licence provision. This year, work supported a proposed national legal framework for small-scale fisher recognition; formal adoption of this framework is anticipated in 2021.
- **Sharing learning:** A series of partner-focused workshops reviewing eight years of diverse project history were completed virtually throughout 2020, and a 'lessons learned' document is in production. In particular, the role of policymakers and corporate decision-makers in relation to fisheries market systems and their role in securing a healthy ocean have been considered, and this will also help to inform FFI's future work on fisheries (see p. 16).



Fish net repair, Costa Rica. Credit: Coope Solidar R.L. 2013

Data collection and traceability trials in Tárcoles

Currently, many low-impact coastal fishers have no access to licences due to lack of evidence of their fishing patterns, and are thus classed as ‘illegal fishers’; only 10% of Costa Rica’s 15,000 artisanal fishers have licences. This creates a major barrier to building community-led marine protection initiatives and disincentivises sustainable fishing practices.

As a linked initiative to our national policy and MPA work, FFI and CoopeSoliDar have worked with a consortium of government bodies, seafood trade experts and fisheries economists to explore better data collection and market access for small-scale fisheries. This initiative aims to help to drive compliance within MPAs and support fishing associations to become more responsible stewards of biodiversity.

ACHIEVEMENTS IN PREVIOUS YEARS

An innovative electronic catch monitoring and traceability system, initially developed to generate information on the effects of banning bottom trawling, was implemented in 2015 to better quantify artisanal catch in the Tárcoles Marine Area of Responsible Fishing. Results from the system were fed into national decisions and policies, and both the authorities and the local community recognised its potential to generate useful information and improve fishers catch monitoring. It can also improve the marketing of their fisheries products (and thus business potential), and track trends in their marine resources to enable more responsive management. This system could help to resolve issues around artisanal fisher licensing, creating a clear process by which these fishers can obtain a licence.

PROGRESS IN 2020

The pilot of small-scale fishery traceability at Tárcoles is a relatively untested intervention. In order to ensure this is able to continue, FFI’s exit grant in 2020 supported infrastructural changes to the Tárcoles community’s fish processing centre to enable the use of digital catch monitoring equipment to be optimised. While the traceability approach has seen small market gains for the community, the equally complex job of ensuring these fishers are seen as legitimate by the state has continued to complicate progress (as in Cabuya, see previous project update).

Securing recognition of small-scale fishers and overturning their inhibited access to markets is a vital part of a lower impact, more equitable seafood sector, as well as delivering effective MPAs in highly fishery-dependent countries. Innovative partnerships between NGOs, fishing communities and major market actors are a key part of driving this change and we intend to capture the learning from this project to contribute to global progress on this issue.

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

Focal Sites:

Tárcoles Marine Area of Responsible Fishing

Area of Impact:

27,320 hectares



Fishing boats, Costa Rica. Credit: Kate West/FFI

EASTERN CARIBBEAN: Mobilising partnerships for effective Marine Protected Area governance

BACKGROUND

The Eastern Caribbean islands and surrounding waters support intricate networks of coral reefs, seagrass beds and mangrove forests, and contain regionally significant biodiversity. These are hugely threatened by the rising tide of island development and the difficulty of restricting damaging and illegal fishing. Despite strong political interest in MPAs, funding for their effective management is often limited. Building on its globally recognised invasive species eradication work in several countries in the region, FFI has identified opportunities to deliver more effective MPAs in this region. Our focus is on improving governance and management, and thus the effectiveness of protection, within existing MPAs in the Lesser Antilles. FFI's first engagement was to catalyse the establishment of the North East Marine Management Area in Antigua in 2009, in collaboration with the national fisheries department and FFI's Antiguan NGO partner, the Environmental Awareness Group.

Subsequently, FFI has worked to support the development of marine protection around two islands in Anguilla and around the remote, uninhabited island of Redonda (part of Antigua). This island is a recognised biodiversity hotspot with a number of highly threatened endemic species. Following the successful eradication of invasive species from the island (led by FFI) the vegetation of this site has dramatically recovered and the threats to terrestrial species have reduced. However, the need for an integrated designation has been identified as a priority for its future protection.



Focal Sites:

Anguilla (Prickly Pear Marine Park
& Sombrero Island Marine Park)

Antigua (Redonda
Ecosystem Reserve)

Barbados

Barbuda

Montserrat

Saint Lucia

Area Of Impact:

28,509 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

ACHIEVEMENTS IN PREVIOUS YEARS

- **MPA management supported:** FFI supported management planning for, and reef monitoring in, the North East Marine Management Area after its designation. This MPA is now threatened by plans for tourism infrastructure which will damage marine habitats within the MPA and the lack of government willingness to tackle illegal development on the island means we have gradually phased out direct support for its management.
- **Wider MPA governance:** A review of MPA governance in the Lesser Antilles, an 'options paper' for supporting MPAs in Antigua and Barbuda and a review of opportunities for large-scale financing for improved marine protection have all been used to inform and develop further MPA work in the region.
- **Biodiversity monitored:** In 2018, FFI led in-water and drop-camera monitoring around Redonda, which revealed a relatively pristine and extensive area (180km²) of coral reef in the north of the proposed reserve, significantly adding to understanding of the site's biological importance.
- **MPA development and designation (Anguilla):** In 2018, FFI began working with two existing Marine Parks in Anguilla (around the remote Prickly Pear and Sombrero Islands) to put in place effective management for what had previously been largely 'paper parks'. In 2019, a process began to transition these sites into functional, effective MPAs through the development of a cross-organisational team (including FFI, the Anguilla National Trust and the Anguillan government), which started to demarcate and zone these sites.
- **MPA development and designation (Antigua):** Following FFI's work with the Environmental Awareness Group and the Department of Environment to develop both terrestrial and marine

reserve designation for Redonda, the Redonda Ecosystem Reserve was secured in principle in 2019. The size of the reserve increased from the initial proposal and now covers 240 km², and is home to at least 30 globally threatened species.

PROGRESS IN 2020

- **MPA management and compliance (Anguilla):** Administrative processes are well underway for the two focal Anguillan MPAs (Prickly Pear and Sombrero), active protection of these sites stepped up in 2020. Rules and zonation are now in place and a new patrol vessel was purchased and deployed. Both sites are showing evidence of compliance with regulations and reduced human impacts (e.g. waste). Proactive steps to improve habitats (e.g. through the provision of artificial reefs) and prevent the spread of invasive species (e.g. through lionfish eradication) has built a basis for wider marine biodiversity recovery. The pandemic and poor weather has meant reduced focus on the more remote Sombrero site, making this a priority for action in 2021. In addition, this work has catalysed further marine protection at two additional MPAs.
- **MPA management (Antigua):** Management of the Redonda Ecosystem Reserve has required innovative thinking and cross-sector collaboration as a result of its remoteness. In 2020, FFI and the Environmental Awareness Group spearheaded the development of three separate bodies to oversee how access, activities and monitoring are regulated for the site. As there is not significant fishing pressure in this area, site-specific rules and zonation have not yet been designed for the marine portion of the reserve, although further consultation with Antiguan fishers is expected in 2021. Assessments of the Reserve's unique coral reef and fish diversity was [published this year](#) (with FFI staff as co-authors).



Rewilded Island of Redonda. Credit: Adam Long/BMC



SCOTLAND: Improving advocacy for effective marine protection

BACKGROUND

The seas around Scotland are both biologically important and highly contested. The length of Scotland's intricate coastline creates a wealth of varied habitats and associated species, including a range of marine species of European importance. Inshore waters, including vulnerable habitats, continue to be heavily fished, and are regularly damaged through the use of heavy towed gear (bottom trawls or dredgers). The polarised debate around marine management in Scotland created the opportunity to support new actors to promote the cause of marine conservation to government and other sectors.

Building on existing partnerships in Scotland, FFI and the Community of Arran Seabed Trust (COAST) (see p. 50) launched a joint initiative that supports communities who want to actively protect key areas of coastline and creates a stronger collective voice in the policy arena. The aim is to create an independent and self-sustained network of community groups offering each other peer-to-peer support and learning that can collectively advocate for sustainable management and appropriate protection of Scotland's vulnerable inshore resources.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Community capacity built:** FFI provided direct support and training to a series of individual communities to help them meet their own aspirations for marine management and to address their self-identified needs. This ranged from

Focal Sites:

Loch Sunart to Sound of Jura
Nature Conservation MPA

South Arran Nature
Conservation MPA

Wester Ross Nature
Conservation MPA

Area Of Impact:

79,302 hectares

Arcadia Investment:

Total Arcadia Marine
Investment 2011: **US \$86,386**

Leveraged funding:
US \$1,138,633

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

ongoing management and governance support to direct technical support. FFI also helped to link communities together into a wider network (see below) through a biannual workshop, direct exchange visits, and the development of a website with key resources available to all members.

- **Marine management improved:** As a result of the work by community groups supported by FFI, two MPAs were established (including in Fair Isle, see below), regulations were put in place for vulnerable sites (such as a ban on scallop dredging in Wester Ross and South Arran MPAs), and communities worked with the government to monitor their local marine habitats. Individual network community groups campaigned against destructive industrial development, challenged the growth of fish farms in environmentally sensitive locations, collected information on marine litter and contaminants, and promoted effective enforcement of MPA designations. In addition, FFI worked directly with specific government agencies to support them in engaging communities.
- **Hope Spot designation achieved:** In 2019, an area of sea off Argyll, on the West coast of Scotland was designated as the [UK's first Hope Spot](#) (important marine areas championed by local people), resulting in significant publicity and a boost to local support for marine conservation.
- **Collective community voice for marine conservation:** The [Coastal Communities Network](#) was established in 2017 and has since gained political influence, through joint advocacy platforms, joint positions to government and through media engagement on a number of key issues, including inshore fishing, salmon farming and kelp dredging. Regular cross-group communication occurs via email and social media platforms, allowing members to share experiences, solve mutual problems and agree collective positions on common issues. Sub-groups or Network Initiatives have been formed to engage around areas of mutual interest, and a community

support fund provides small grants to communities in support of specific marine management and/or monitoring activities.

PROGRESS IN 2020

- **Marine management improved:** Community-led actions for improved marine management (such as ranger-led volunteer boat surveys, updating of Marine Reserve Codes of Practice, production of a survey and conservation action plan for the isle of Carna and surrounding waters and general fundraising training and skills development) were supported through the dedicated community support fund.
- **Community-led monitoring established:** The joint Coastal Communities Network, FFI and NatureScot (formerly Scottish Natural Heritage) community-led monitoring project published the [Community-led Marine Biodiversity Monitoring Handbook](#) and a (Covid-19 safe) [virtual training tool](#) this year, which was featured as part of [Glasgow Science Festival's online programme](#). Work is underway to provide equipment and training to community groups, so that marine monitoring data being collected are robust enough to be included in national level databases.
- **Collective community voice for marine conservation:** The network has grown in scale and now has 17 community group members as well as an additional 30 partners. Increasingly, members of the group are invited to participate in marine management processes nationally in Scotland. Individual community groups have also joined a new inshore fisheries reform coalition, #Our Seas, and some have chosen to sit on the steering group to direct the coalition's action, thus demonstrating their enhanced capacity to engage in such initiatives. The Coastal Communities Network (via FFI) was nominated for a Nature of Scotland Award and a [short film](#) was prepared in support of this.



Kelp forest, Scotland.
Credit: George Stoyler/Flickr

Supporting Scotland's first Demonstration and Research Marine Protected Area, Fair Isle

Scottish legislation includes a provision for third parties to propose sites as MPAs that do not necessarily meet the strict requirements of the national network. These sites are known as Demonstration and Research MPAs, where progressive marine management approaches can be tested.

FFI provided direct support to the Fair Isle Marine Environment and Tourism Initiative (FIMETI), one of the members of the Coastal Communities Network (above). FIMETI represents the whole population of Fair Isle and had been campaigning for an MPA for their waters for over 20 years. FFI helped FIMETI develop their proposal to meet the criteria for a Demonstration and Research (DR) MPA, and led the process to achieve support from other stakeholders, including government and fishers. The Fair Isle MPA was designated in 2016 and aims to improve marine management practices within a 14,500 hectare area around the island to safeguard the seabird populations that are critical to the island's tourism-based economy. This MPA is the first of its kind in Scotland, and the first site to devolve MPA management responsibilities to a non-fishing community group through a formal co-management agreement.

FFI supported the community to establish the Fair Isle Marine Research Organisation (FIMRO) in 2018, but MPA implementation activities were stalled following a fire which destroyed the Fair Isle Bird Observatory (the main source of income for the island) in March 2019. In 2020, a new partnership approach was developed between FFI, NatureScot (previously Scottish Natural Heritage), and FIMRO and to develop an MPA Project Coordinator role for the Fair Isle Demonstration and Research MPA to develop a fully funded co-management plan for the site. It is hoped that Fair Isle will provide a ground-breaking model for community led and managed MPAs in Scotland, which can be replicated at other sites and a case study to share lessons learnt is in development.

STRENGTHENING PARTNERS

SECURING MARINE SITES

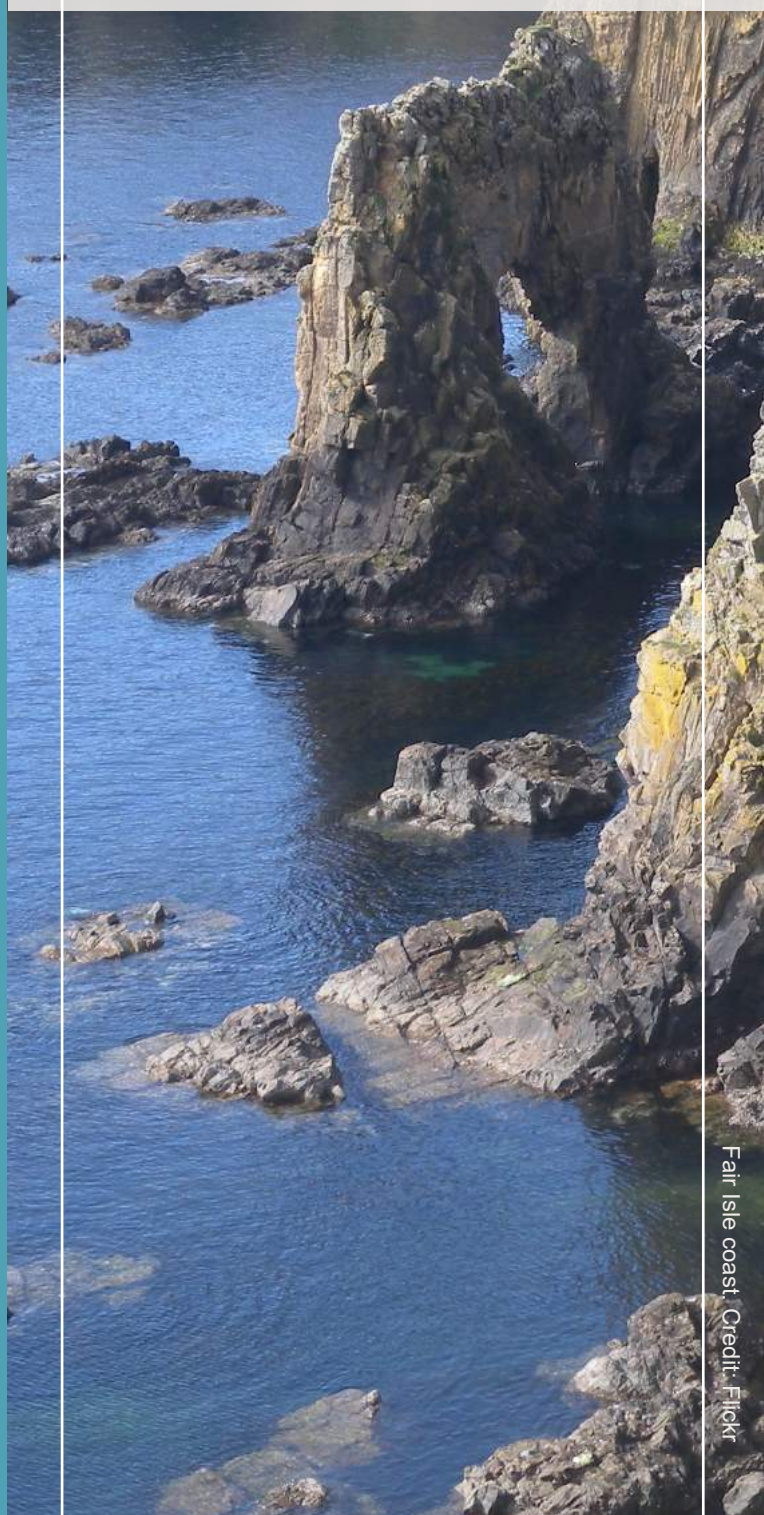
POLICY & PRACTICE

Focal Sites:

Fair Isle MPA

Area of Impact:

14,500 hectares



Fair Isle coast. Credit: Flickr



Plastic litter on beach. Credit: Dustin Woodhouse

GLOBAL: Improving policy and practice to reduce plastic pollution

BACKGROUND

In 2009, FFI identified the risk posed to biodiversity from microplastics, tiny pieces of plastic (microbeads, microfibres and pellets) known to concentrate persistent organic pollutants on their surfaces, which are directly ingested by marine life, including organisms at the base of the food chain. FFI's work on microplastics subsequently provided the basis for an expanding programme of work to address marine plastic pollution, and we have developed significant internal learning and expertise on this issue over the last ten years.



STRENGTHENING PARTNERS

POLICY & PRACTICE

ACHIEVEMENTS IN PREVIOUS YEARS

- **UK microbead ban in cosmetic products:** In January 2018, a UK Government ban on microbeads in cosmetics and personal care products came into force, following FFI's presentation at an enquiry by Parliament's Environmental Audit Committee. This ban was the result of six years of work from FFI to highlight the issue of microbeads in cosmetic and personal care products through publication of the Good Scrub Guide (2015) and a high-profile advocacy campaign (2016) led by a coalition of four NGOs: FFI, Greenpeace UK, Marine Conservation Society and the Environmental Investigation Agency. This world-leading ban covers all plastic ingredients and avoids potential loopholes seen in legislation elsewhere, and FFI continues to promote compliance with the ban through ongoing product reviews.
- **Broad dissemination of learning:** Reports (available on our website) to document learning from our work in micro plastics include [guidance on microbeads](#) and briefings on [microfibres](#) and [pellet loss](#). Membership of the Commonwealth Clean Oceans Alliance enables us to advise member states on how to tackle plastic pollution, and we provide expert advice to the European Chemicals Agency (ECHA) to support development of forthcoming legislation on microplastics, which could remove microplastics from products beyond toiletries. In 2019, we published a high-profile report entitled [No Time to Waste](#) (in partnership with Tearfund), which highlighted the consequences of plastic pollution to both biodiversity and humans. We have also highlighted the risks of some alternative solutions (such as biodegradable plastics and bioplastics), contributed to multiple consultations and high-level meetings, and supported decision makers to make evidence-based, rather than reactive, decisions.
- **Tackling plastic pellet pollution:** By 2017, FFI had secured a commitment from 58 UK-based plastic companies and 29 multi-national companies to adopt existing voluntary good practice to prevent pellet spills; however, we recognised that tracking compliance is a significant limitation of current systems. FFI has supported practical trials for a supply chain approach to pellet management

through a Scottish Government working group and engaging with the UK Government, OSPAR (the Convention for the Protection of the Marine Environment of the North-East Atlantic) and individual UK retailers. This would put in place mechanisms to externally assess compliance with a set of standards in pellet handling, which could be used by any business handling pellets and certified across the whole supply chain. Recommendations for a supply chain approach to pellet loss have since been included in the EU Plastic Strategy, the G7's Plastic Charter and in a management standard developed by the British Retail Consortium. FFI also established a Europe wide NGO coalition to help promote a supply chain approach to industry and EU decision makers. A global management standard for pellets is now under development, and work with investors and shareholder activists, along with maintained media profile of the issue, has resulted in significant shifts in international pellet producers' responses to pellet loss.

PROGRESS IN 2020

- **Standard development:** Development of a technical standard for pellets was initiated this year, in collaboration with the British Standards Institute (BSI) and partly funded by the Investors Forum (a network of large investment companies) and the Scottish Government. A pellet certification scheme is also being developed through a multi-stakeholder group convened by the Scottish Government, of which FFI remains an active member.
- **New microplastic issues explored:** This year, we undertook detailed research and consultations to better understand microfibre loss from garments, and to build solid relationships in the sector, given the extent of microfibre loss during clothing production (as well as from domestic washing). We also conducted desk research and consultation to explore marine source of polystyrene, which is considered a particularly damaging form of marine plastic pollution. This resulted in a publicly available [report](#) (short summary available [here](#)) with key recommendations for reducing pollution from foamed polystyrene in marine settings, and we are currently exploring further options for additional work in this area.



Plastic pellets.
Credit: Belgian Plastics

GLOBAL: Supporting marine champions through the Conservation Leadership Programme

BACKGROUND

Marine issues are often under-represented on the conservation agenda in countries with the highest marine biodiversity. Mobilising an effective cadre of new and dynamic marine conservationists and local marine conservation champions will help to drive forward marine protection in countries where it is most needed. FFI is a founding member of the Conservation Leadership Programme (CLP), which champions and provides training, mentoring and career development opportunities to young conservation leaders. Under this framework, Arcadia funding has been used to support young marine conservationists through the Future Conservationist Award scheme. From 2020, CLP grant giving has been secured through the receipt of a separate generous grant from Arcadia.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Capacity of early-career conservationists built:** Since 2016, eight teams of young leaders have received mentoring and funding to undertake and manage their own projects to conserve marine species and habitats, and to develop these into larger programmes. Experience from 30 years of the CLP shows that individuals who have received this investment in their early career development often go on to become successful conservationists, catalysing wider action and becoming significant players in the conservation community within their home countries.
- **Marine conservation improved:** In 2018, a CLP project to enhance community conservation of a threatened population of horseshoe crabs in Odisha, India led to increased local support for, and engagement in, horseshoe crab conservation. In Alor, Indonesia, work to identify and address the drivers of thresher shark decline led to increased conservation awareness and promising discussions with regional government, leading to the development of a new regulation that aims to stop thresher shark fisheries while simultaneously providing alternative livelihood solutions by allocating budget for shark fishers. In Mexico, the work of a previous recipient led to the addition of a species of black coral onto the Mexican Protected Species List.

PROGRESS IN 2020

- **Marine conservation improved:** The funding provided in 2018 continued to support two projects in 2020. In Honduras, the shark project has been extended and the CLP alumnus received a fellowship under the Blue Pioneers programme. In Peru, a study of the vulnerable smooth hammerhead shark (where many juvenile hammerheads are caught by inshore fisheries) garnered the support of high-level government officials to improve regulations to protect critical areas for this species.



STRENGTHENING PARTNERS



Students from CLP programme in a team-building exercise. Credit: CLP

GLOBAL: Reducing the negative impacts of extractive industries on the ocean

BACKGROUND

To meet the world's increasing demand for energy and resources, offshore fossil fuel exploitation is growing, posing a serious threat to marine wildlife and ecosystem health. Through engagement with corporate design, engineering, and construction teams, FFI has the opportunity to integrate marine biodiversity considerations into the operations of companies working in the oil and gas sector, ensuring a more sustainable approach to working in sensitive marine habitats. FFI challenges and supports companies to better assess biodiversity risk, and to adopt best practice guidance in avoidance and mitigation of impacts. These approaches have been applied to operations in offshore coral reef and deep-water habitats in at least 11 countries.

ACHIEVEMENTS IN PREVIOUS YEARS

- **Good Practice Guidance:** In 2016, FFI developed [publicly available guidance](#) and recommendations for oil and gas companies on how to identify and mitigate the impacts of their operations on marine biodiversity and ecosystem services. The guidance was promoted at key international meetings and with international financial institutions. As a result of work by FFI, lender standards on the risks from oil and gas development affecting turtle nesting sites were changed; now, companies seeking investment in developments within turtle ranges anywhere in the world have to consider mitigating any potential impacts on these species. The guidance has since been adapted for use in West Africa and tailored to reduce region-specific impacts.
- **Direct mitigation:** FFI has put in place mitigation plans for specific companies to address the biodiversity impacts of their operations, including sea turtles at risk from planned oil and gas activities in Ghana and cetaceans impacted by seismic testing.

PROGRESS IN 2020

- **Good Practice Guidance:** Recommendations for impact mitigation by East African States in the Western Indian Ocean will be based on the [Good Practice Guidance](#) produced by FFI. Technical support for effective transboundary cooperation will be provided in line with the guidance.



Deep sea coral. Credit: NOAA



Deep sea vents. Credit: NOAA



POLICY & PRACTICE

Legacy Projects

These are projects where we track ongoing progress, but are no longer actively engaged, except in cases where support is specifically requested.



KENYA: Community Conserved Areas on the South Coast

The south Kenya coast, on the Tanzania border, is an area of outstanding natural beauty and biodiversity. Between 2009 and 2015, FFI worked with the East African Wildlife Society to develop, inform and test a process for establishing Beach Management Units and their associated Community Management Areas (previously termed Community Conserved Areas) in seven communities in the Shimoni-Vanga area south of Mombasa. FFI had previously undertaken similar work with communities north of Mombasa at a site called Kuruwitu, and the intention was to test and replicate this approach in a new location.

Through this project, governance arrangements were established and by-laws for fishing practices were introduced that led to the establishment of no-take zones and community patrols. Extensive capacity building helped to ensure effective operation of management committees and transparent selection of representatives. Knowledge of sustainable fishery practices and how to reduce over-exploitation was increased. Management plans were prepared and approved for three Community Management Areas.

Subsequent ecological surveys have emphasised the importance of these areas. Results show that they have higher coral cover and diversity than areas open to fishing. Fishers report a perceived increase in fish populations in some Community Management Areas, particularly near the boundaries of no-take zones, which was corroborated by monitoring in one of the no-take zones that showed notably high levels of fish biomass. Communities have benefited from enhanced rights and influence over resources and are supportive of the development of these co-managed areas. A number of resources have been disseminated to share lessons from the project, including a [case study](#), a film and a briefing paper for government.



Focal Sites:

Majoreni
Vanga
Kibuyuni
Shimoni
Wasini
Mkwiro
Jimbo

Area Of Impact:

9,040 hectares

STRENGTHENING PARTNERS

SECURING MARINE SITES

POLICY & PRACTICE

The project continued after FFI withdrew in 2015. The seven areas with which the project had worked were brought together as a Joint Community Managed Area that integrated the individual Community Management Area plans drawn up through the previous work. Updates from the East African Wildlife Society, and also from an independent MSc research thesis, indicate that implementation of management plans has been variable but that some of the fishing grounds in the Community Managed Areas are still being actively managed.

In 2019, FFI supported work at Kisite Marine Park, a no-take area seaward of the existing Joint Community Managed Area, to help understand its socio-economic

impact on local communities. This resulted in the development of a plan with the Kenya Wildlife Service, which will review the governance and support needs of local Beach Management Units. The knowledge gained from this project is also informing the evolution of our work in north Kenya (see p. 43). In 2020, due to the impacts of Covid-19, the work has focused on enhancing the resilience of the coastal communities, for example through supporting the development of alternative livelihood options, facilitating establishment of saving schemes, building capacity (e.g. computer literacy) and improving access to markets, to ensure that local livelihoods and conservation management of the sites are resilient to any future shocks.



Weighing octopus catch, Kenya. Credit: Gurveena Ghataure/FFI

Sustainability rating for the fisheries sector

Between 2012 and 2017, FFI worked with three other organisations (the North Sea Foundation, Synnervate, and Gaia Values) to test an innovative approach to using investors' influence on the fishing industry to achieve improvements in fisheries sustainability. This resulted in the Sustainable Seafood Finance tool, which provides financiers with the information to evaluate sustainability performance of, and catalyse improvements in, the fishing companies in which they invest.

Having identified the 50 largest seafood companies and their financiers, we engaged with financial institutions (particularly those based in Asia, such as UBS Hong Kong and Aviva Investors) to improve their understanding of the operation of the seafood sector and the risks of financing unsustainable seafood production. Initially the Sustainable Seafood Finance tool focused on improving transparency in the sector. Feedback suggested that the tool was useful for financial institutions to assess risk exposure in terms of their seafood portfolio; however, there was a lack of appetite from these users for development of a toolkit to support performance improvement.

Since the end of the project, there has been an increasing recognition by financial institutions of the need to understand emerging risks around fisheries. An increasing array of projects now seek to build on the approach piloted by the Sustainable Seafood Finance tool in attempting to guide the influence of banks, stock exchanges and corporate shareholders in demanding fishery reform, from the Seafood Tracker Initiative to the Principles of Responsible Investment in Wild-Capture Fisheries. In 2020, FFI's own emerging fisheries programme (p. 16) has begun to re-engage with key actors from the project in order to identify relevant opportunities to catalyse investor influence to reduce destructive fishing.



Fish catch. Credit: Mwangi Kirubi/TNC



Fishing vessel. Central America. Credit: Bianca Roberts/FFI



POLICY & PRACTICE



Coral, Raja Ampat. Credit: Gurveena Ghataure/FFI

CONCLUSION

The substantial and continued support provided by Arcadia since 2011 toward FFI's Marine Initiative has underpinned all of the significant achievements that the programme has made to date, as detailed in this report.

We are tremendously grateful to the Donor Board and Advisors of Arcadia for this opportunity to carry out this vital long-term conservation work.

Thank you.

Credit: Juan Pablo Moreiras/FFI

Annex 1:

Historical Projects

These are projects where FFI is no longer actively engaged and it is no longer appropriate to expect ongoing updates. Projects are ordered by the date Arcadia support finished with the most recent projects first.

Documenting the impacts of no-take zones, Firth of Clyde

Commercial fisheries caused significant declines in native marine biodiversity and habitats in Scotland which led to the collapse of key white fish fisheries, and a reliance on destructive fishing practices to target species lower in the food chain. This is particularly evident in the Firth of Clyde, where the Community of Arran Seabed Trust (COAST) has worked for over a decade to campaign for the establishment of a no-take zone at Lamlash Bay. From 2011 to 2014 FFI supported the University of York to study and monitor the Lamlash Bay no-take zone –the first and only fully protected marine reserve in Scotland, and one of the few marine reserves in the UK proposed by local communities. The research sought to establish the rate, trajectory and recovery of commercially important marine species following the cessation of all forms of fishing.

This research provided clear evidence of ecosystem recovery, with greater species diversity and abundance, including juveniles of commercially important species such as scallop, and greater habitat complexity observed inside the no-take zone than in the surrounding area. These results added to growing evidence for the benefits of closing areas to fishing, and has been widely published (five peer-reviewed papers) and disseminated in the broadcast media. The study directly informed the successful campaign by COAST to establish a new South Arran Marine Protected Area in 2014, informed their arguments for more effective management of this site in 2016, and has provided the basis for ongoing ecological monitoring within the no-take zone. FFI continues to provide strategic support and advise COAST as required (p. 49), however, COAST now manages Lamlash Bay entirely independently.

Ecuador: Galera San Francisco Marine Reserve

Galera San Francisco Marine Reserve, on the Pacific coast of Ecuador, was designated in 2009 recognising that it is an area of international biodiversity importance, with a species inventory larger than the Galápagos Marine Reserve. FFI became involved in 2010 and worked with NGOs and communities around the reserve to revise the management plan. This was approved in 2014 and included provisions for no-take zones (the first in mainland Ecuador), and enabled local management of fisheries by establishing preferential access rights for artisanal fishers. A management committee was established, bringing together representatives of 10 local organisations and six government bodies. This committee also established responsible fishing practices and resolved conflicts around access and resource management. Incidences of trawler infringement in the reserve have since reduced, partly as a result of improved information exchange between the maritime authorities, environment agencies, and communities.

A team of Marine Reserve community rangers undertake patrols and has powers to seize illegal fishing gear. Local NGOs continue to monitor the marine biodiversity and fisheries catches (particular octopus and sea cucumbers) with community support.

Focal sites: Galera San Francisco Marine Reserve

Area of conservation impact: 54,600 hectares

Ecuador: Trawling policy reform

In 2011, Ecuador made the decision to ban all but one bottom trawl shrimp fishery from its waters. Learning from similar work in Costa Rica (see p. 55), FFI worked with the government to establish the likely socio-economic and biodiversity impacts of the proposed ban. This work brought together fisheries and MPA authorities, engaged government representatives in monitoring, and allowed experience sharing between Costa Rica and Ecuador.

The work was informed by existing data from two Ecuadorian MPAs, where shrimp trawling was already banned and that had demonstrated increased abundance of at least two commercially important species (starry grouper and yellow snapper) after bottom trawling had ceased, suggesting some initial ecosystem recovery. Artisanal shrimp fishers interviewed in both Ecuador and Costa Rica reported improved shrimp catches (although this information was largely anecdotal), and by 2016, local fishers in Ecuador reported few negative impacts of the ban. It is not clear how far the artisanal shrimp fishery might in future need regulation itself, should it expand to fill the space left by the industrial fleet.

Focal sites: Machalilla National Park; Reserva de Producción de Fauna Marina Costera Puntilla de Santa Elena

Area of conservation impact: 127,290 hectares

Philippines: Developing models of local indigenous marine management

The Philippines lies within the Coral Triangle, considered the epicentre of marine biodiversity, and contains 9% of the world's coral reefs. Many of the indigenous peoples maintain customary laws, beliefs and practices relating to the use of natural resources, including demarcations of ancestral waters for fishing. Between 2011 and 2015, FFI helped two indigenous communities (General Nakar and Aramaywan) to establish Indigenous Community MPAs in their ancestral waters. Co-management agreements were signed between these tribes and the local government. Management plans were developed that included no-take zones and enforcement strategies. Baseline information on threats and illegal activities were collected, and levels were agreed for both visitor fees and fines from infringements. This project was one of the first in the Philippines to create a mechanism by which indigenous people's groups could engage in marine resource management. The model was considered applicable to other areas of

Palawan and Quezon Provinces where municipal and ancestral waters overlap. The Center for Conservation Innovation, an independent NGO that evolved in 2015 from FFI Philippines, took on oversight of this initiative.

Focal sites: General Nakar Ancestral Waters; Aramaywan Ancestral Waters

Area of conservation impact: 27,724 hectares

Liberia: Community Management of Mangrove Ecosystems in Lake Piso

Liberia's mangroves have been extensively degraded, in turn affecting coastal fisheries, nearshore water quality and shoreline stability. Lake Piso Multiple Use Reserve is a Ramsar Site, with significant but degraded mangrove areas. In 2012, FFI and local partners worked with 34 local communities to map the mangroves in the reserve and to develop a better understanding of the threats they face and their importance for local livelihoods (mangrove wood being traditionally used for both construction and fish smoking). A management plan for the reserve was developed (a first in Liberia), and local communities led its implementation and management, including resolving any infractions.

By 2014, it appeared that mangrove harvesting had declined (based on anecdotal reports). Reports suggested that the height of the canopy and mangrove area coverage had increased, and 14 of the communities were respecting a self-imposed moratorium on mangrove destruction within the Reserve. The locally-led action network for mangrove conservation established by this project is now being supported through a largescale Global Environment Facility project led by Conservation International.

Focal sites: Sustainable Mangrove Use Zone within Lake Piso Multiple Use Reserve

Area of conservation impact: 6,361 hectares

Indonesia: Impact investing for marine conservation in Aceh

Impact investment is a form of socially responsible investment made into a company or organisation with the intention of generating measurable social or environmental benefits alongside a financial return. In 2014, FFI initiated a pilot impact investment project to incentivise more sustainable fisheries businesses in Simeulue Island, Aceh, thus encouraging a shift towards practices that would minimise impacts on

biodiversity. This work complemented the work on MPAs and Locally Managed Marine Areas (LMMAs) in the same area (see p. 18).

This experimental project developed a good understanding of the local fisheries sector and markets in Simeulue, and identified how impact investment could offset the impacts of LMMAs on local businesses, but it did not yield any investable prospects at the time. However, the project raised awareness of sustainable fishing practices, increased fishers' business skills, informed our wider programme of work in Aceh (see p. 18) and fed into learning about conservation finance and enterprise approaches globally.

Central America: Building capacity for marine conservation

In 2012, FFI developed a regional alliance with locally based organisations in Honduras, Costa Rica and Nicaragua, which focused on building capacity for MPA establishment and management, sustainable fisheries, community engagement in decision making and sustainable resource use. This work resulted in the current initiatives in Honduras (p. 35), Costa Rica (p. 55) and Nicaragua (p. 38). Governments in the three countries have been supportive of greater community engagement in marine management. However, this work has demonstrated the considerable time required to establish formal collaboration between communities and government.

Belize: Conserving the Mesoamerican Barrier Reef at Turneffe Atoll

Turneffe Atoll, the largest and most biologically diverse coral atoll in the Western Hemisphere, was previously unprotected and highly threatened. In 2012, FFI worked with Blue Marine Foundation, alongside several other donors and NGOs, to ensure it was designated as a Marine Reserve by the Belizean Government. A local NGO (Turneffe Atoll Sustainability Association) was formed to co-manage the MPA, and FFI provided this NGO and the Belizean government with technical assistance between 2013 and 2014. By the end of 2014 the MPA was sufficiently well managed and funded and FFI's support was no longer necessary.

Focal sites: Turneffe Atoll Marine Reserve

Area of conservation impact: 131,690 hectares

Support to the Blue Marine Foundation

The Blue Marine Foundation (BLUE) was formed by the team behind the film *The End of the Line* and aims to channel significant private donor and corporate funding into marine conservation. In particular, it aims to secure large-scale or high profile MPAs to achieve both biodiversity benefits and increased public awareness of the need for marine conservation.

Over the years, FFI's support has involved financial assistance that helped to underpin the organisation's early development (through Halcyon Land & Sea - see separate report), in-kind support (mentoring on organisational development, governance, fundraising and recruitment) and the secondment of a marine specialist to BLUE to build in-house technical skills and underpin the strategic development of its programme of work. We also worked with them to develop a joint project in Belize (see above). FFI continues to support BLUE through membership on its board.

BLUE is now a thriving marine NGO with a 24-strong team in place and is increasingly recognised as an effective organisation that achieves results. BLUE has stated that support from FFI (including funding from Halcyon Land & Sea) was vital to lay the foundations for the growth of the organisation.

Indonesia: Catalysing partnerships for marine conservation in Bali

Bali has some of the highest coral diversity in the world, abundant fish populations and rich mangroves and seagrasses, all of which are under significant pressure from tourism, coastal development, intense trade in marine ornamental species, and destructive fishing practices. Between 2012 and 2013, FFI undertook an assessment of conservation needs in northern Bali, and developed partnerships with two local NGOs. FFI provided these NGOs with support and training and help with the development of their strategic plans and long-term financial strategy. Following this, a review indicated that further support from FFI was not required.

PREVIOUS SCOPING PROJECTS

Cuba: Supporting marine conservation efforts

Cuba's waters support rich and, in many places, largely pristine marine and coastal ecosystems. In 2015, growing liberalisation and changes in Cuban-U.S. relationships posed a risk that the tourism and fisheries sectors could open up, potentially increasing damage to marine and coastal resources. FFI undertook an initial scoping exercise to identify potential partners and projects in Cuba, but the uncertain political, social and economic situation precluded further project development.

Croatia: Exploring opportunities

FFI explored opportunities for marine projects and partnerships in Croatia in 2013. Despite interest from environmental agencies, the significant political restructuring and legislative changes associated with accession to the European Union at that time meant that further project development was not feasible.

Indonesia: Ridge-to-reef conservation on Halmahera

Weda Bay in Halmahera supports both rich marine biodiversity and local community livelihoods. Although a priority site for MPA development, the Indonesian Government lacked funding to address this. In 2015, FFI took up the opportunity to help develop this MPA, using experience gathered through the project in Aceh. However, limited partnerships with local groups and an emerging threat from mining created substantial uncertainty about how effective any intervention could be in this context, and the decision was made not to proceed with this project.



Coral reef and fish, Indonesia. Credit: Matt Glue/FFI

Annex 2: Summary of Publications and Communications

OPEN ACCESS PUBLICATIONS

The following is a list of open-access publications that were either directly published by FFI/its partners on the marine programme or were published by others about marine conservation work funded by Arcadia. This list includes both peer-reviewed and grey literature (publications are marked (*) if they are peer-reviewed).

This list only includes new (published in 2020) or previously unreported publications.

- Camacho, R., Steele, S., Challenger, S., & Archibald, M. (2020). [Status of coral reefs in Antigua & Barbuda: using data to inform management](#). PeerJ, 8, e9236.*
- Cowie, W., Al Dhaheri, S., Al Hashmi, A., Solis–Rivera, V., Baigun, C., Chang, K., Cooney, R., Kamaka’ala, S., Lindeman, K., Louwa, C., Roe, D., Walker–Painemilla, K., Al Baharna, R., Al Ameri, M., Al Hameli, S., Al Jaber, K., Alzahlawi, N., Binkulaib, R., Al Kharusi, Y. (2020). Case studies - Koh Rong Archipelago & Aceh province, Indonesia. [IUCN Guidelines for gathering of fishers’ knowledge for policy development and applied use](#). IUCN, Gland, Switzerland; and Environment Agency – Abu Dhabi, United Arab Emirates.
- Fauna & Flora International (2020). [Assessing the influence of four years of Marine Protected Area status in the Koh Rong Marine National Park](#). FFI: Cambodia.
- Fauna & Flora International (2020). [Breaking down ocean polystyrene: An initial investigation into marine uses of foamed polystyrene](#). FFI: Cambridge.
- Glue, M., Teoh, M. & Duffy, H. (2020). [Community-led management lays the foundation for coral reef recovery in Cambodian marine protected areas](#). *Oryx*, 54(4), 599-602.*
- Howard, P., Parker, G., Jenner, N. & Holland, T. (2020). [An assessment of the risks and impacts of seabed mining on marine ecosystems](#). FFI: Cambridge.
- Ortiz-Alvarez, C., Pajuelo, M., Grados, D., Abrego, M.E., Barragán-Rocha, A.R., Barrantes, M., Sánchez, A.C., Fonseca, L.G., Gadea, V.E., Mangel, J.C., Rguez-Baron, J.M., Santidrian-Tomillo, P., Sarti, L., Santana-Hernández, H., Shillinger, G., Prado, M., Wallace, B., Williard, A.S., Zavala-Norzagaray, A.A., Alfaro-Shigueto J. (2020). [Rapid Assessments of Leatherback Small-Scale Fishery Bycatch in Interesting Areas in the Eastern Pacific Ocean](#). *Front. Mar. Sci.*, 6, 813.*
- Teoh, M., Kim, S., Glue, M. & Chea, P. (2020). [Editorial - Marine protected areas in Cambodia: a call for collaborative action](#). *Cambodian Journal of Natural History*, 1, 1-6.*
- Vong, R Teoh, M & West, K (2018) [An action plan for marine turtle conservation in the Kingdom of Cambodia](#) *Oryx*, 52(2), 212.*

Forthcoming

- Steadman, D. (2021, in press). Towards ecological and social impact through collaborative governance of a seascape of Marine Protected Areas in Honduras. *Oryx*.*

OTHER COMMUNICATION OUTPUTS IN 2020

FFI WEBSITE NEWS ARTICLES AND BLOGS RELATING TO OUR MARINE PROGRAMME

- Tim Knight. (2020, February 17). [Plastic pollution poses new threat to a turtle paradise](#)
- Annkathrin Sharp. (2020, February 26). [Can we stop offshoring our plastic problem?](#)
- Nathan Williams. (2020, March 12). [Sir David Attenborough urges halt to deep sea mining plans in wake of alarming new scientific report](#)
- Pippa Howard. (2020, March 12). [Out of our depth? Why deep seabed mining is not the answer to the climate crisis](#)
- Nathan Williams. (2020, April 4). [Ten years to save world's most threatened sea turtle population](#)
- Nathan Williams. (2020, April 17). [Endangered Mediterranean monk seals aided by unique intervention](#)
- Dan Steadman. (2020, June 1). [Are supertrawlers bad for marine biodiversity?](#)
- Hazel Akester. (2020, June 3). [Stepping up action on plastic pellets](#)
- Sophie Benbow. (2020, June 8). [Deep concern – Safeguarding our oceans in the context of Covid-19](#)
- Sarah Pocock. (2020, June 10). [Meet the Guardians of the Sea protecting Cape Verde's marine life](#)
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Juvenile fish in Indonesia. Credit: Radinal/FI