BLUE MARINE FOUNDATION

JERSEY
CASE STUDIES

BLUEPrint for Marine Protected Areas:
A guide to establishing and managing MPAs

Measuring a lobster's carapace length. Photo by Matt Sharp.

Jersey is an island in the English Channel, with an extraordinary marine estate. The northwest coast has the greatest diversity of seaweed in the British Isles. On the southwest, some of the richest and most diverse clam beds in Northern Europe can be found and the rocky intertidal and outlying shallow reefs offer habitats found nowhere else in the region.

Blue Marine is working to protect at least 30 per cent of Jersey's waters. Since 2017 Blue Marine has supported research on the Island to measure the impact of existing MPAs on biodiversity, fisheries and blue carbon. These MPAs currently cover six and a half per cent of Jersey's waters and are closed to all mobile fishing gear. The use of a whole site approach for MPAs in Jersey draws on methods applied in Lyme Bay, one of the UK's only MPAs where management is based on protecting the whole site rather than just specific features. This research has included a four-year PhD, multiple MSc and BSc projects, monitoring of local fisheries with fishermen and blue carbon habitat assessments.

This project is also taking lessons learned from Lyme Bay and its fisheries and conservation model, working to support local, low impact (static gear) fisheries on the Island. Blue Marine is working with fishermen, Government and other stakeholders to conduct research and improve management of local fisheries. Initiatives have been developed to promote and increase awareness around low-impact forms of fishing, seasonality and buying local, all of which are crucial to allow consumers to make sustainable choices.

The more people learn about the ocean, the more passionate they feel about protecting it. As part of our aim to 'Connect people with the sea', Blue Marine established 'Snorkel Portelet', a Jersey snorkel trail aiming to connect the community to the ocean and increase awareness of why we need to protect our marine environment. Snorkel Portelet provides an opportunity to spark an interest and appreciation of our oceans across all generations. Children, as the future generation of ocean stewards, are the key to the future of our seas.

The more people learn about the ocean, the more passionate they feel about protecting it

Les Ecrehous. Photo by James Bowden.

INFORMATION: RESEARCH AND MONITORING

Blue Carbon

The role of the marine environment in relation to the global climate crisis, particularly carbon storage, is an increasingly studied topic. The Government of Jersey have set out a roadmap to become carbon neutral by 2030. Small islands like Jersey are terrestrially limited when it comes to using nature-based solutions for tackling climate change and achieving carbon neutrality. In fact, just five per cent of Jersey's territorial area is terrestrial. As such, protecting and restoring blue carbon habitats is a key mechanism in helping Jersey achieve its carbon neutrality goal. In 2020 the Government of Jersey initiated a blue carbon assessment of its marine environment, in partnership with the University of Exeter, the University of Plymouth and Blue Marine.

This assessment has been split up into two phases. Phase one being a desk-based survey and phase two being a ground truthing study. For phase one, data was derived from a range of different data sources, including regional studies, oceanographic surveys and admiralty charts to provide point data on biological, oceanographic and geological parameters. These parameters were then used to assign spatial extents of JNCC biotope classifications which were further assessed using field data, to group the biotopes into broader scale habitat types. Carbon values from the published literature were then used to estimate the carbon storage capacity of Jersey's various marine habitats.

Phase two used core and grab samples to assess changes in carbon density with depth. This data was used alongside the spatial extent of habitats from phase one to determine the stock of organic carbon in the top 10cm of sediment across Jersey's waters. Assumptions were made on the distributions and quantity of carbon found in samples being consistent across each habitat type.

Seagrass meadow – an essential blue carbon resource. Photo by Matt Jarvis

Results from phase one estimates that Jersey's seabed permanently sequesters over 10,000 tonnes of carbon every year, while its territorial waters are estimated to store over 12 million tonnes of carbon within hard shells of animals, over 80,000 tonnes of carbon within seaweeds and 15,000 tonnes of carbon stored in marine animals. Phase two results are yet to be published. This data is feeding into the Government of Jersey's Marine Spatial Planning process, which will provide the relevant framework to manage marine activity to support blue carbon ecosystems, through mechanisms such as developing networks of MPAs.

Deploying the Van Veen grab

Seagrass collected from a grab sample

Seagrass

Seagrasses are one of the three globally recognised blue carbon habitats and are specifically detailed in Jersey's Carbon Neutral Roadmap. Occupying less than 0.2 per cent of the world's oceans, they are estimated to sequester approximately 20 per cent of ocean carbon. Understanding their role within the marine environment is crucial both in terms of assessing their ability to contribute to a carbon neutrality process and ensuring they are managed effectively.

Separating infaunal species from sediment

In 2021, an MSc project examined Jersey's seagrass beds of differing ages with respect to carbon storage and biodiversity influence. Satellite imagery dating back to 1997 allowed for seagrass beds to be grouped by age and enabled an estimation of bed expansion or contraction.

The project used grabs of the seabed and Baited Remote Underwater Videos (BRUVs) to examine the seagrass beds. A Van Veen Grab collected samples of sediment and seagrass for analysis of blue carbon and infaunal (sediment living) species. Carbon estimates from both above and below the sediment surface were estimated, and infaunal species were identified under a microscope. BRUV surveys were used to measure abundance and diversity of mobile species by deploying the cameras within different ages of beds. Results from assessment of the BRUV footage showed that old seagrass beds store twice as much carbon within their sediment than young beds, as well as supporting greater species diversity of infauna and mobile fauna.

SEAGRASS SEQUESTER APPROXIMATELY

20%

OF OCEAN CARBON

This study was the first to examine the differences in blue carbon and biodiversity between seagrass beds of differing age. It directly highlighted the importance of well-established seagrass beds, where management through effective protection using a whole site, ecosystem-based approach, promotes productive fisheries, healthy blue carbon ecosystems and improved biodiversity. Further research into seagrass beds will play an important role in achieving Jersey's climate and biodiversity commitments.

Monitoring the effectiveness of Jersey's MPAs: PhD study

Marine Protected Areas (MPAs) are a powerful tool for protecting and restoring the marine environment. Jersey's existing MPAs exclude all forms of mobile gear (also known as No Mobile Gear Zones) and cover six and a half percent of its territorial waters. Blue Marine is working to expand these MPAs to cover 30 percent of Jersey's waters by 2025, combined with effective fisheries management both inside and outside the MPAs.

A four-year PhD study led by the University of Plymouth, supported by Blue Marine and facilitated by the Government of Jersey Marine Resources showed Jersey's MPAs have a statistically significant greater number of mobile species compared to unprotected areas. A range of methods were used for this intensive study. A novel mixed method approach was used to determine the value of marine habitats for commercial fisheries and assess the sustainability of current management. Interviews were carried out to obtain quantitative and qualitative data on the socio-economic impacts of MPAs. Lastly, grab samples, towed videos, BRUVs and potting surveys were conducted to investigate

BRUV set up. Photo by James Bowden

Jersey's MPAs have a statistically significant greater number of mobile species compared to unprotected areas.

biodiversity changes, habitat recovery and population changes within Jersey's MPAs.

Results showed that indicator species such as wrasse and juvenile bream were detected more frequently inside the MPAs. IUCN threatened shark and ray species were also detected in higher numbers within the MPAs but in too low numbers overall to statistically assess. Mixed sediment habitats such as fine and coarse sediments and maerl-dominated sediments (such as those fished with bottom-towed fishing gears) were found to support greater numbers of mobile and infaunal species within Jersey's MPAs. This was especially prominent for infaunal species in one of the older MPAs, highlighting the importance of considering MPA age when assessing ecological recovery. Structure-forming organisms, such as sandmason worms, maerl and seagrass were found to have declined in coverage in unprotected areas, but were observed to be stable within the MPAs. These species are incredibly important for promoting habitat complexity and biodiversity through creating structure and stability. Certain structure-forming organisms, such as seagrass, can act as a foraging, nursery, and spawning habitat for some species, including those of commercial importance.

This study provides an important evidence base for further MPA designation and will directly feed into existing management strategies as well as Jersey's upcoming Marine Spatial Plan. The study has resulted in multiple publications, strengthening the argument for a whole-site, ecosystem-based approach to fisheries management and marine protection.

PEOPLE: EDUCATION

Jersey: Creating a snorkel trail to raise awareness – Snorkel Portelet

In 2022, Blue Marine established 'Snorkel Portelet', a Jersey snorkel trail aiming to connect the community to the ocean and increase awareness of why we need to protect our marine environment. This was part of the wider project aim to secure a series of MPAs, in the form of a Jersey Marine Park. Through connecting people to the ocean, initiatives such as a snorkel trail can play a vital role in helping MPAs to not only deliver for climate and nature, but to also deliver for people. Children, as the future generation of ocean stewards, are the key to the future of our seas. Snorkel Portelet provides an opportunity to spark an interest and appreciation of our oceans across all generations. Snorkel Portelet is made up of three components: the trail itself, an education package and a citizen science portal.

Snorkel Portelet highlights four areas of interest which act as self-guided snorkel trails. Information about the location, species, habitats and safety will be available on information boards in the bay as well as online. A promotional film was created, which will be supported by a more information-based film to be released at a later date.

Working with Bouley Bay Dive Centre, Blue Marine has developed an educational outreach programme, tailored for ages nine to eleven, that provides underwater experiences to more than 180 children. The programme is delivered in three parts across one week. First, pupils have a lesson in school to learn about Jersey's marine environment and what can be done to protect it. Next, they attend a pool session with Bouley Bay Dive Centre to familiarise themselves with snorkel equipment as well as safe and responsible snorkelling practices. Finally, at the end of the week, pupils are taken on a sea snorkelling session with Bouley Bay Dive Centre at the Portelet Bay snorkel trail.

Citizen science allows a wider group of people to better understand the marine environment and contribute to the science, helping us understand the impacts of the global biodiversity and climate crisis. A citizen science portal is in development by the Société Jersiaise Marine Biology section and Blue Marine. This portal will allow visitors to the bay to report the species they see, allowing us to track how these change over time, particularly following the designation of Portelet Bay as a No-Take Zone in 2022.

Les Landes Y6 post-snorkelling

ECONOMICS AND FINANCING: REVENUE FOR SUSTAINABLY MANAGED FISHERIES

Jersey: 'Jersey Hand Dived' labelling scheme

In 2021, Blue Marine launched 'Jersey Hand Dived', a label promoting scallops caught locally through hand-diving. The label aims to inform consumers on their choices when purchasing local scallops and boost awareness on the two very different methods used to collect them.

The work started with engagement with local divers, gauging their thoughts on such a label, and asking for their ideas on how it could work best for them. In development of the logo, divers were asked for feedback, which often brought up important points (typically species-specific information such as ensuring the size and shape were correct) and enabled buy-in. Several divers and a fish monger then featured in a promotional video, designed to highlight the launch of the label. When including anyone in promotional material it is very important to ensure they are completely aware of the context of their inclusion. Everyone included in the video was given a chance to review prior to publishing, and feedback was used to make changes to ensure everyone was happy with the end product.

The label's communication strategy focused on promoting sustainable capture methods rather than criticising unsustainable ones. Following the launch of the label and in subsequent social media posts, the greatest interaction was gained through posts that provided information on the divers. Local communities appear to appreciate an understanding of the people and faces behind the journey from sea to plate, and this should be taken into consideration when running local seafood promotion schemes.

Jersey Hand Dived sticker. Photo by Ocean Culture Life

Jersey: Jersea Informational Campaign- 'Fish of the Month'

In 2021, Blue Marine started supporting a local initiative called Jersea.je, an educational platform, started by local photographer Matt Sharp, for the Jersey community to learn about and celebrate the Island's marine environment and the culture associated with it. Blue Marine helped to supplement Jersea with a 'Fish of the Month' initiative to showcase local seafood and connect islanders to local fishers and fishmongers.

Following the release of a high-profile documentary on over-fishing, much of the community were unsure whether to give up eating seafood altogether. In addition to this, as Jersey imports over 90 per cent of the wetfish islanders eat and exports over 60 per cent of its live crab, the need for promoting local, sustainably caught seafood was identified. The campaign aimed to provide a bespoke guide to seasonal, low-impact seafood that could be sourced on-Island, showcasing local sustainability and thus also reducing food miles.

A clear framework should be utilised to establish which seafood can and can't be promoted under the scheme. This enables the ability to justify choices. There are many factors to take into consideration when finding species to promote for consumption, such as fishing methods, stock health and local or historical context. For Fish of the Month, all of these factors are taken into account, in addition to the Marine Conservation Society's Good Fish Guide, where available, which uses a rigorous rating system based on stock status, management and capture method.

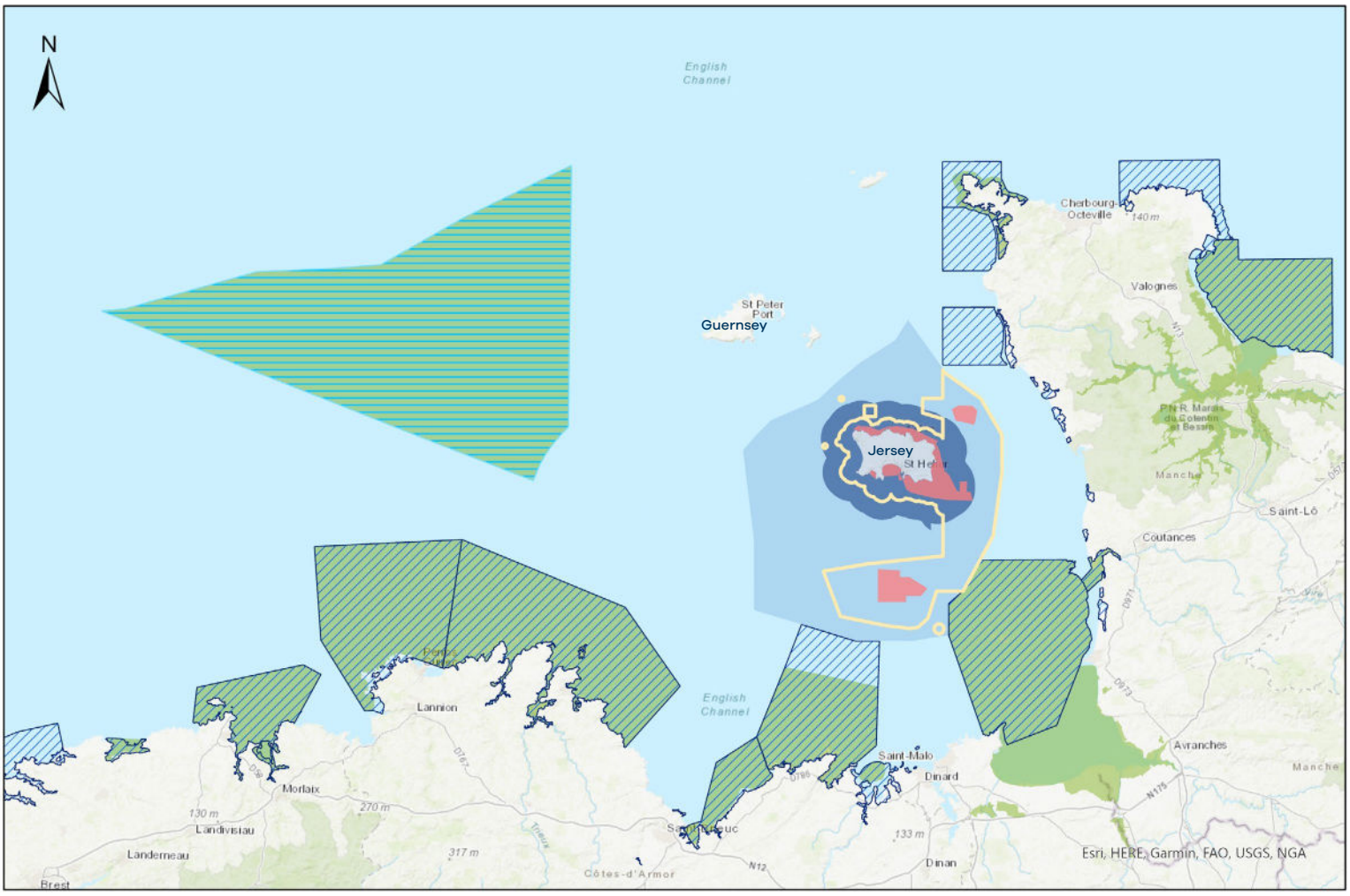
As part of the Fish of the Month campaign, local chefs, well-known within the community, were invited to feature in short seafood preparation and recipe videos. These formed part of the materials used each month to promote a particular fish. It is crucial to ensure that all local fishmongers and fishers are invited to feature in any promotional campaign (where they meet criteria such as low-impact) to maximise engagement and ensure all are provided with an equal opportunity.

Where budget and resource allow, consider creating a package of work for social media campaigns and outsourcing to specialists to maximise impact and effectively utilise team resource.

Jersey imports over 90 per cent of the wetfish islanders eat


Local Chef James Gordon. Photo by Matt Sharp


Local Fisherman. Photo by Matt Sharp



BLUE MARINE FOUNDATION

3rd Floor South Building,
Somerset House, Strand, London,
WC2R 1LA

+44 0207 845 5850
info@bluemarinefoundation.com
www.bluemarinefoundation.com

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