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PROTECT
THE OCEANS



ALL AT SEA:

HOW GOVERNMENT INACTION MAKES A
MOCKERY OF UK MARINE PROTECTION

ACKNOWLEDGEMENTS

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Sustainable fishing in Cornwall

© David Sandison / Greenpeace

Front: a French-flagged, industrial fly-shooter fishing in a Marine Protected Area

© Kristian Buus / Greenpeace



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EXECUTIVE SUMMARY

In 2020, the UK government pledged to protect at least 30% of our seas by 2030 – known as ‘30x30’. In this report, Greenpeace UK analyses the UK’s entire network of Marine Protected Areas (MPAs) to establish whether the government is on track to properly protect 30% of UK waters by 2030.

Our key finding is that over 90% of MPAs are protected in name alone, with no meaningful, site-wide regulation on the most destructive fishing activity.

We examine the gap between the UK government’s marine protection claims and the situation out at sea, revealing just how much their rhetoric fails to match reality. We report the good news too, explaining that, broadly speaking, protection has been designated in the right places – although it’s not being enforced. The existing MPA network covers the majority of the UK’s range of marine seafloor habitats and, if properly managed, could enable ecosystem recovery. We explore how, on paper, the UK has ‘achieved’ 83% of the 2030 target and how it would take just 1% more of the Exclusive Economic Zone (EEZ) to reach the 2030 goal.

These lines on the map are pointless, however, if MPAs are not fully or highly protected. Whilst the public expect MPAs to be closed to the most harmful types of fishing,¹ just 8% actually are – an area the size of less than 0.1% of the EEZ – with an industrial fishing frenzy continuing in most MPAs despite their protected status. We expose that, in real terms, the government is a long way off its 2030 target. Just two MPAs in the entire network are fully protected across their whole site.

We then explore the ways in which the government can achieve 30x30, examining areas where our post-Brexit powers have already given some ecosystems additional protections. We detail how these kinds of protections not only restore ecosystems, but also level up coastal communities, revive the UK fishing industry, improve food security and safeguard crucial ocean functions like carbon sequestration that help mitigate climate change.

"Over 90% of MPAs are protected in name alone, with no meaningful, site-wide regulation on the most destructive fishing activity."



Sea urchin, Inner Hebrides, North Atlantic
© Greenpeace / Gavin Newman

The government has the power to deliver 30x30 and does not shy away from referring to itself as a world leader in marine protection. We conclude this report with a roadmap for how it can earn that status – a plan that begins by using the existing mechanism for licensing variation to immediately restrict all industrial fishing vessels from operating within MPAs.

Key findings

- Over 90% of MPAs are protected in name alone, with no meaningful, site-wide regulation on the most destructive fishing activity.
- Just two MPAs in the entire network are fully protected from all fishing activity (a ‘no-take zone’) across their whole site.
- 32% of the UK’s MPAs have no restrictions on fishing in the majority of the site, meaning 122 so-called ‘protected’ areas are substantially open, year-round, to all types of destructive fishing.



The Margiris supertrawler fishing in the English Channel, off the coast of Brighton © Saf Suleyman / Greenpeace

Supertrawlers are gargantuan fishing vessels, around 100m-150m long, 6m wide and weighing up to 10,000 tonnes. These monster ships are capable of catching thousands of tonnes of fish in a single trip. Also known as 'floating factory ships', they can reportedly process as much as 250 tonnes of fish per day whilst at sea.

"Just two MPAs in the entire network are fully protected across their whole site."

- Over 60% of offshore MPAs are substantially open to all fishing activity year-round.
- Just five of the UK's 76 offshore MPAs are protected against bottom towed gear – a type of fishing gear that can damage the seabed, devastate marine life and release the seabed's stored carbon. Only two of these have site-wide protection.
- Only 8% of UK MPAs – an area of ocean the size of less than 0.1% of the UK's EEZ – are fully closed to all bottom and pelagic towed fishing gear and can sustain ecosystem recovery. No offshore MPAs are fully closed to all towed gear.
- Industrial fishing in UK MPAs is relentless. For example, in 2021 alone, vessels with bottom towed gear spent an estimated 47,833 hours fishing in UK offshore MPAs.
- An estimated 80% of seagrass, kelp forest, reefs and saltmarsh habitats, which are critical for biodiversity, are nominally protected within MPAs, but just 22% are safeguarded from bottom towed gear.
- Looking at the total area covered by the UK's existing MPA network, 83% of the UK's range of marine habitats are well represented within it. An additional area of just 8,061 km² (1.1% of the UK's EEZ) would need to be designated as MPA to bring the full range of UK habitats up to a minimum of 30% protection.
- The lack of effective protection in the MPA network means that, despite extensive designations, the government is an alarmingly long way from realising its goal of 30x30.
- The current byelaws approach, whereby partial protections of MPAs are considered on a site-by-site basis, is too slow and not ambitious enough to address the crisis.
- Greenpeace UK is calling on the government to use its post-Brexit powers to apply variations to fishing licences in order to exclude all destructive industrial fishing vessels from the entire MPA network.
- Applying licence variations to restrict all industrial vessels from operating within MPAs should be prioritised as a swift, simple and effective first step to increase protection of MPAs and get the UK on track towards fully or highly protecting at least 30% of our waters by 2030.
- Greenpeace UK has set out a step-by-step roadmap for the government to reach its 2030 target of 30% ocean protection.

INTRODUCTION

Our blue planet is suffering an unparalleled climate and nature emergency. Scientists agree: to ensure marine ecosystem survival, at least 30% of the global oceans must be fully protected by 2030.² A vast network of MPAs can achieve just that, providing sanctuaries for animals and entire ecosystems to recover. However, it is crucially important that MPAs are not only designated but effectively protected.

Fully and highly protected MPAs either prohibit or restrict extractive activities from taking place within their boundaries, e.g. fishing, mining, oil and gas development. It's not surprising that these kinds of MPAs produce the greatest conservation benefits, whilst those with weaker regulations prove much less effective at conserving and restoring nature.³

A potentially world-leading network of MPAs has been established in the UK's domestic waters. Yet despite the government's commitment to fully or highly protect at least 30% of our seas by 2030 – the so-called '30x30' pledge⁴ – these MPAs are not being properly regulated, with industrial activities continuing throughout most of the network, despite nominal protection.

At a time of ecological crisis, this artifice of protection is shameful – especially when we have so much to lose. Whilst some might consider UK oceans to lack the tropical sights of far-flung ecosystems, our local seas are home to a startling breadth of biodiversity. Seagrass meadows, kelp forests and delicate reefs provide habitats for a wealth of fish and crustaceans. Meanwhile, plaice and other commercially important species live on our seafloors alongside tiny sandeels – a crucial food supply for seabirds like puffins and kittiwakes – and whales, dolphins and enormous bluefin tuna glide through the waters above.

These natural wonders used to thrive in UK waters. Now, only a fraction remain,⁵ with decades of industrial fishing methods, like bottom trawling and dredging, decimating fish populations and disrupting entire ecosystems. Fortunately, there is evidence that with the right marine protection, the ocean has a remarkable

ability to recover its health.^{6,7} But until the UK government acts on its own rhetoric and actually implements world-leading protection, these crucial ecosystems will continue to bear the burden.

Government rhetoric

The UK government presents itself as a global leader in ocean protection.⁸ It has spearheaded the Global Ocean Alliance, bringing together countries from around the world to call for 30x30. Through the much-lauded Blue Belt Programme, it has supported its Overseas Territories in fully protecting nearly 3 million km² of marine habitats surrounding islands such as Tristan da Cunha and Ascension Island.⁹ Furthermore, the UK has signed up to the High Ambition Coalition on Biodiversity Beyond National Jurisdiction, endorsing the creation of 'an ecologically representative, well connected network including highly, and fully protected marine areas'.¹⁰ Meanwhile, at home, nearly two fifths of the UK's domestic waters are designated as MPAs.¹¹

Be that as it may, on numerous occasions Greenpeace UK has highlighted the extent to which industrial fishing continues to take place inside MPAs,¹² despite the government's lofty PR regarding their protection. And whilst the first bottom towed gear regulations in offshore MPAs were announced in 2022 in four sites in



The bottom otter trawler *Hendrika Jacoba* operating in the Dogger Bank MPA, North Sea, June 2020 © Greenpeace

England,¹³ the industrial fishing frenzy continues in dozens of other nominally 'protected' areas.

It's clear that the rules in place to govern these MPAs are not fit for purpose. Prior to Brexit, the UK government blamed EU regulations for this, promising to fix the issue by 'leaving the EU's failed Common Fisheries Policy.'¹⁴ Though the UK always had the power to protect its inshore waters whilst part of the EU, implementing stronger fisheries restrictions did become easier after Brexit. Indeed, during the Fisheries Bill debate in September 2020, and at other points during the passage of the Bill, then Environment Secretary George Eustice implied that after Brexit, the government's intention was to use these new powers to restrict fishing licences and ban supertrawlers in UK waters.¹⁵ These powers were enshrined into law with the Fisheries Act in 2020, which enabled the government to regulate fishing activity of boats from all countries in its offshore waters up to 200 nautical miles from the UK's coast, including inside MPAs. At the time, George Eustice said:

'This is a huge moment for the UK fishing industry. This is the first domestic fisheries legislation in nearly 40 years, and we will now take back control of our waters out to 200 nautical miles or the median line. The Fisheries Act makes clear our intention to continue to operate on the world stage as a leading, responsible, independent coastal state. We will protect our precious marine environment, whilst ensuring a fairer share of fishing opportunities for UK fishermen.'¹⁶

Yet despite promises to 'take back control' and get ocean protection done, industrial fishing continues unabated inside MPAs. In this report, Greenpeace UK reveals new analyses of the entire UK MPA network. We examined the extent to which our marine habitats are now covered by MPA designations and assessed all of the existing regulations and byelaws in place to determine their actual level of protection. In doing so, we have established the chasm between the government's grand claims and the actual level of protection assigned to UK marine habitats today.

With just over seven years until 2030, time is running out to fully protect 30% of our seas and give marine life the best possible chance to recover from the impacts of human activity. The government has access to all the powers it needs to deliver 30x30. This report concludes with a roadmap for how it can actually achieve this.



George Eustice pictured in 2015 pledging to champion low impact fishing in the UK © Janie Airey / Greenpeace

Types of

Marine Protected Area explained

Marine Protected Area (MPA) is the umbrella term for areas of coast and sea that are supposed to be managed and protected from environmentally-damaging activities to conserve marine life, habitats and ecosystems.

The UK has several different types of MPAs that form a network of protected areas in our waters. Offshore MPAs are those located partially or entirely in offshore waters, which are more than 12 miles from land. Inshore MPAs are located in inshore waters, less than 12 miles from land.

Each devolved nation has the power to create MPAs. In England, Wales and Northern Ireland, these areas are called Marine Conservation Zones (MCZs). In Scotland, they are called Marine Protected Areas. There are also European Marine Sites (EMS), designed to protect wildlife and habitats that are of Europe-wide significance. There are two types of EMS: Special Protection Areas to safeguard birds and their essential habitats, and Special Areas of Conservation to protect other wildlife and habitats. Together with their terrestrial counterparts, these form the pan-European 'Natura 2000' network of protected sites, designed to safeguard wildlife most at risk. For simplicity, this report will use the blanket term Marine Protected Area (MPA), when referring to areas of the ocean that have been designated as protected.

PROTECTED ON PAPER: GAP ANALYSIS OF THE EXISTING MPA NETWORK

UK waters are home to a great variety of marine habitats and species, many of which are considered to be of European and international conservation importance.

Over the last 50 years, 386 MPAs have been created around the UK (see [Appendix 1](#)). A significant amount of research has been conducted during that process, with many MPAs subject to scientific assessment of the habitats present and the threats from fishing. In this section, we will assess them as simply 'lines on the map,' rather than taking into account their actual levels of protection.


"An additional area of just 8,061 km² (1.1% of the EEZ) would need to be designated to achieve at least 30% protection for all habitats."

FIGURE 1

Map of the UK's network of Marine Protected Areas (MPAs), highlighting inshore and offshore MPAs within the UK Exclusive Economic Zone (EEZ). The MPAs outside the EEZ off Northwest Scotland are part of the UK continental shelf.

 UK Exclusive Economic Zone

Marine Protected Areas

 Inshore

 Offshore





"Vital habitats like the UK's remaining seagrass meadows and kelp forests tend to be highly covered."

Kelp forest, Treshnish Isles, Scotland
© Will Rose / Greenpeace

The first question we asked was whether this apparently extensive network of MPAs adequately covers the UK's diverse range of habitats (see section: '[UK marine ecosystems: What's at stake?](#)'). The consensus of scientific advice is that an effective MPA network needs to protect at least 30% of the oceans and, within that, a minimum of 30% of each habitat needs to be represented.¹⁷ To determine whether this condition was met, our research used the European Nature Information System (EUNIS) predictive habitat map,¹⁸ which contains the current best understanding of the UK's marine habitats. The Joint Nature Conservation Committee's (JNCC) EUNIS level 3 seabed habitat map categorises the physical aspects of the habitats according to a hierarchical classification scheme. From this, we were able to estimate the total area of major habitats within UK waters and then assess if each is adequately covered by the UK's MPA network.

The JNCC's EUNIS level 3 seabed habitat map does not give a fully precise picture of the distribution of habitats through the UK EEZ. It combines records of direct observations with predictions of where each habitat is likely to occur, given the presence of other relevant environmental factors (e.g. depth, substratum, hydrodynamic condition, etc). Despite this limitation, it is the most accurate information available and has proved very useful for helping to inform management decisions. Further details on EUNIS and the research methodology can be found in [Appendix 2](#).

Different types of MPA protect different habitats and species. Together, MPAs should complement each other to create a network that protects the full range of habitats in UK waters. The good news is that, in terms of coverage, the existing MPA network is on track – it covers 38% of UK waters (an increase from 25% in 2019, thanks largely to a number of designations in Scotland in 2020). Of the broad-scale habitats identified from the EUNIS level 3 seabed habitat map, 83% have at least 30% of their range within MPAs. Likewise, vital habitats like the UK's remaining seagrass meadows and kelp forests tend to be highly covered.

The current network is certainly not perfect, however. 15 EUNIS habitat types have less than 30% of their range protected by MPAs (see [Appendix 3](#)). To remedy these deficits, an additional area of just 8,061 km² (1.1% of the EEZ) would need to be designated to achieve at least 30% protection for all habitats. Depending on the spatial distribution of habitats, this may be achieved by reviewing and tweaking current designations to complement the existing network and habitats represented within it.

THE INDUSTRIAL FISHING FRENZY

‘Our seas have a great variety of marine life and habitats, many of which are rare and of national importance. Marine protected areas (MPAs) help make sure that these are guarded from the increasing pressures of human activity.’ – Marine Management Organisation (MMO)¹⁹

Whilst our gap analysis shows that the ‘lines on the map’ are generally in the right places, it is also clear that these habitats are very poorly ‘guarded from the increasing pressures of human activity’.²⁰ As we have already stated, it is vitally important that designations are not only world-leading on paper, but that effective protections are robustly implemented and monitored, curbing destructive fishing and other damaging human activities so that MPAs can fulfil their intended purpose.^{21, 22}

To understand the true extent to which the UK MPA network is protecting the marine environment, we reviewed the available databases for information on MPA regulations and byelaws, as well as assessments of whether the MPAs were considered to be making progress towards their stated conservation goals. Byelaws relating to static gear were not assessed in this analysis. Bottom trawling restrictions relating to the 2016 Deep Sea Regulations were classed as partial restrictions, rather than closed to all bottom towed fishing gear, because although they prohibit bottom trawling, they do not restrict dredges, or purse seine and surrounding nets.

The results of this research paint a distressing picture. 32% of the UK’s MPAs have no limits on fishing in the majority of the site, meaning 122 so-called ‘protected’ areas are substantially open, year-round, to all types of destructive fishing (see [Appendix 4](#)). Among offshore MPAs, which typically cover the largest areas, this figure rises to more than 60%. The vast majority of MPAs are subject to no meaningful regulation on fishing activity, making a mockery of the word ‘protected’.

Definitions of fishing activity

- **Bottom towed gear:** Fishing gear which is pulled or pushed across the seabed, usually involving heavy metal dredges (often with teeth), metal beams and other weighted nets, ploughing the seabed and risking the release of stored carbon.
- **Towed gear:** Any fishing gear which is towed through the water, either on or off the seabed, such as dredges, benthic trawls, mid-water trawls and purse seines, to overrun the target species or herd them into the net.
- **No-take zones:** Areas where all fishing is prohibited.

In 2022, regulations on bottom towed gear were announced in four of the UK’s 76 offshore MPAs, including the large Dogger Bank MPA in the North Sea. Whilst this was a groundbreaking moment for UK ocean protection, it benefitted only a minuscule proportion of the UK’s MPA network, with only two of the four sites having site-wide bottom trawling bans. Moreover, the partial ‘protection’ granted to these MPAs still allows industrial supertrawlers and fly-shooters to fish in these areas with impunity.



Given the absence of restrictions on fishing activity, it’s not surprising to discover that not a single offshore MPA is publicly reported to be making more than partial progress towards its conservation goals (see [Appendix 5](#)), with evidence of only one having regular site assessments (see [Appendix 6](#)). Monitoring of MPAs is an undervalued and under-resourced component of marine conservation, and it is difficult to get accurate assessments of the quality of protection and degree of restoration being provided by MPAs.²³ Without sufficient monitoring, the government cannot reliably assess progress towards conservation targets and simply cannot claim to be a world-leader in ocean protection. Equally, it cannot be effectively held to account for mismanagement.

FIGURE 2

MPAs within the UK EEZ which have no restrictions on fishing in the majority of the site area.

These maps show MPAs with majority (>50%) rather than site-wide (100%) coverage.

Marine Protected Areas

-  With no restrictions on fishing in the majority of the site area
-  UK Exclusive Economic Zone

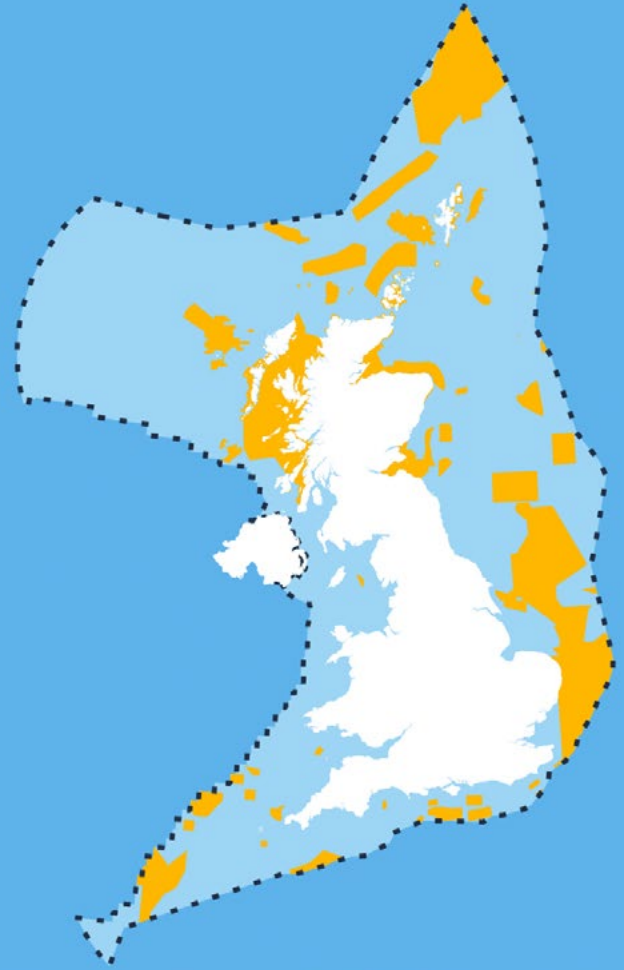


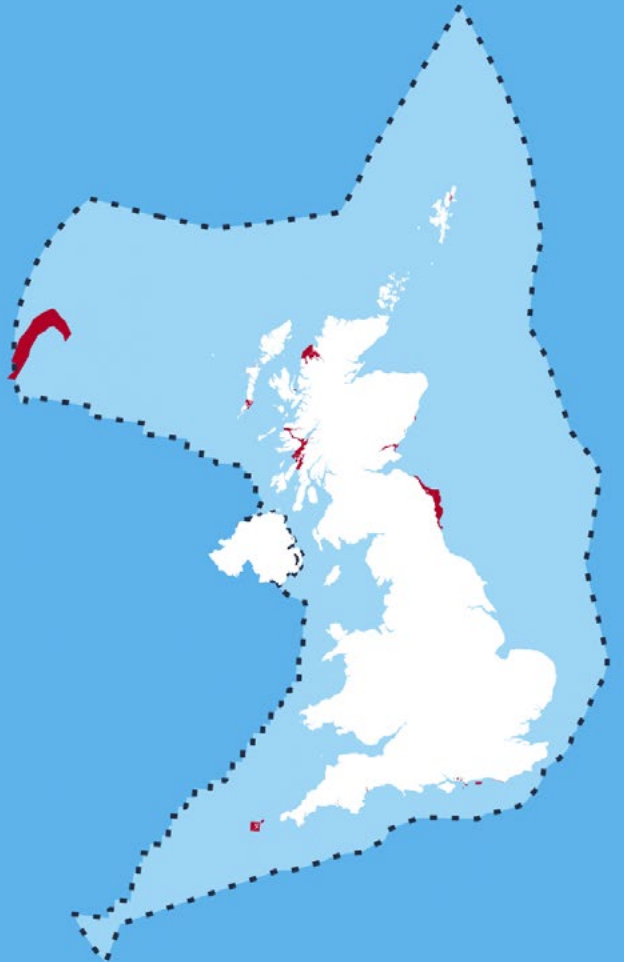


FIGURE 3

MPAs within the UK EEZ which have restrictions on the most damaging types of fishing (all towed gear) in the majority of the site area.

Marine Protected Areas

-  With restrictions on all towed fishing gear in the majority of the site area
-  UK Exclusive Economic Zone



The picture for inshore MPA enforcement is slightly different. There are small outposts of comprehensive fisheries closures amongst these MPAs, although Montrose Basin is one of only two MPAs that are fully protected by a site-wide, permanent 'no-take zone'. Montrose Basin, just 7km² in size, is an enclosed estuary of tidal mudflats that serves as a feeding and roosting ground to a range of bird species.

These inshore MPAs have already produced some success stories. Carbon-storing habitats and animals like sponges, corals, sea squirts and hydroids now thrive on the seabed of the Isle of Arran and Lyme Bay, where dredgers and trawlers once operated. There has also been an increase in scallop and lobster numbers around the islands of Lundy, Skomer and Arran since industrial fishing bans were imposed.²⁴ In many offshore areas, however, habitats are largely destroyed, degraded and, in some cases, ecologically unrecognisable.

Restricting the use of a single fishing type simply will not cut it. Even if mobile gear like bottom trawling is excluded, relatively small vessels operating static gillnets are still capable of causing significant harm to the marine ecosystem through bycatch and littering the

"The government is presiding over a network of protected areas that only exist on paper."

seafloor with discarded gear. A no-take zone which bans all extractive activities is the best way to meet conservation goals; a ban on all towed gear is an absolute minimum.

Just 8% of UK MPAs – an area of ocean less than 0.1% of the EEZ – are fully closed to all towed fishing gear and thus have the minimum protection needed to allow ecosystem recovery. This figure falls to zero in offshore MPAs, where industrial fishing is relentless. For example, in 2021 alone, vessels with bottom towed gear spent an estimated 47,833 hours fishing in UK offshore MPAs (see [Appendix 7](#)). Clearly, the government is presiding over a network of protected areas that only exist on paper and is an alarmingly long way from achieving its 2030 target. How can the government continue to praise its marine protection policies when every day, our MPAs are subject to this level of destruction?

The supertrawler Helen Mary fishing in the Central Fladen MPA, North Sea © Suzanne Plunkett / Greenpeace



Bottom trawlers

The government has repeatedly recognised that bottom trawling is one of the most destructive methods of fishing.^{25, 26} Bottom trawling ploughs through the seabed, destroying habitats, devastating marine life and disturbing the vast quantities of carbon stored there. Yet despite the government acknowledging the incompatibility of bottom trawling with conservation goals, Oceana found that bottom trawling is still taking place in 90% of the UK's offshore MPAs intended to protect vital seabed habitats.²⁷



A bottom trawler in the English Channel
© Kristian Buus / Greenpeace

Fly-shooters

Heavy bottom towed gear is not the only cause of ecological breakdown in our oceans. The high efficiency of fly-shooters has caused significant concern to UK and French fishermen alike, with the director of Low Impact Fishers of Europe Jeremy Percy saying: 'We're being told by our fishermen that it's pointless going to sea when these boats have been through, because there's nothing left.'²⁸ Indeed, one expert found that fly-shooters have a 'killing power' between four to 11 times greater than that of local inshore fishing boats – a power that was documented by Greenpeace in 2021 as part of the Operation Ocean Witness campaign.²⁹

Yet despite their impact, large numbers of fly-shooters have been granted licences to operate – including throughout the UK's so-called protected areas – without any environmental impact assessment. To make matters worse, in January 2022 Defra announced another year without effective catch limits for non-quota species, some of which are targeted by fly-shooters.³⁰ Local fishermen, whose livelihoods have been devastated by fly-shooting over the last two years, appealed against this decision, resulting in the government launching a consultation on fly-shooter management measures which could be introduced in 2023.³¹

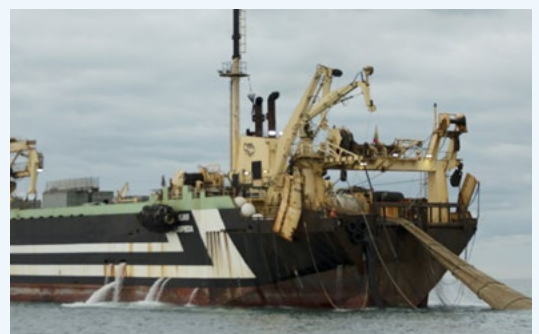


A Dutch fly-shooter in the English Channel
© Andrew McConnell / Greenpeace

"We're being told by our fishermen that it's pointless going to sea when these boats have been through, because there's nothing left." – Jeremy Percy, Low Impact Fishers of Europe

Supertrawlers

Supertrawlers are amongst the largest and highest intensity fishing vessels. They remain at sea for weeks at a time and can catch, process, freeze and store hundreds of tonnes of fish every day. They spend thousands of hours fishing in UK offshore MPAs annually,³² and fish with such intensity that entire marine ecosystems are threatened – not to mention the risk of bycatch.³³



Supertrawler in the English Channel
© Saf Suleyman / Greenpeace



"Across the entire 'protected' site of the South West Deeps (East), there is not one square metre of protection from destructive industrial fishing."

Basking shark
© Greg Skomal / NOAA

Case study: South West Deeps (East) Marine Protected Area

The South West Deeps (East) MPA is located approximately 190km southwest of the Land's End peninsula. The site covers an area of more than 4,600km² – larger than Cornwall itself – and reaches depths of 750m. It was designated to protect the seafloor habitats and features present there: subtidal coarse sediment, subtidal sand, deep-sea bed and Celtic Sea Relict Sandbanks. The carbon sequestration in the seabed makes this MPA one of the UK's most valuable blue carbon sites (see '[UK marine ecosystems: What's at stake?](#)' for a definition). It stores a massive 1.67 million tonnes (Mt) of carbon – equivalent to the combined carbon emissions of over a million return flights from London to Sydney. The area has a great summer plankton bloom, enriching the waters and supporting whales, seabirds, basking sharks, and other species.³⁴ On the seafloor, lifeforms range from sponge and coral beds, to flat fish like sole and plaice, clams, burrowing worms, and giant fan mussels.

However, the natural balance of the habitat and the species that live there is at risk from industrial fishing. Across the entire 'protected' site of the South West Deeps (East), there is not one square metre of protection from destructive industrial fishing. Staggeringly, fishing vessels spent an estimated 18,928 hours – about 788 days – fishing in this MPA over just 18 months (January 2021-July 2022). Despite the seabed supposedly being protected, large bottom trawlers spent 3,370 hours fishing in the MPA in the same period (January 2021-July 2022), dragging heavy fishing gear across the ocean floor in the process (See [Appendix 7](#)). Otter trawling, beam trawling and long lining also take place within the site, alongside netting, midwater trawling and gillnets. The majority of vessels are flagged to EU member states, with just 9% flagged to the UK.

GOVERNMENT INACTION

Steps towards protection are being made through an extremely slow byelaws approach under the Habitats Regulations, led by the government's MMO.

For inshore MPAs, the Association of Inshore Fisheries and Conservation Authorities (IFCA) take responsibility for the byelaws process up to 6nm from shore. Each regional IFCA has the ability to introduce byelaws for the management of fishing activities in their district.

Following a lengthy process of calls for evidence and consultation, local byelaws are introduced on a site-by-site basis and are designed to restrict forms of fishing affecting specific features. This approach not only risks weakening original proposals through over-consultation, it fails to match the urgency of the climate and nature crisis. Indeed, since the first call for evidence documents was published in October 2020, it took 18 months for byelaw restrictions on bottom towed gear to be confirmed in the first four offshore MPAs alone.

This approach dooms the UK government's stated ambition to protect 30% of UK oceans by 2030.³⁵ By failing to go beyond the protection of individual features (e.g. the seabed) in an MPA, other destructive activities can continue.

For example, even if bottom trawling is banned in an MPA to protect the seabed 'feature', destructive pelagic (midwater) fishing vessels like supertrawlers are still free to operate. In fact, there has been no progress towards banning supertrawlers and other high-intensity pelagic fishing from UK MPAs. Given that marine ecosystems are inextricably linked, this approach is inadequate and cannot properly protect habitats or the wider MPA ecosystem.

In 2021, Defra responded to a review on the introduction of Highly Protected Marine Areas (HPMA) in English waters – an independent review that strongly recommended that HPMA's 'prohibit extractive, destructive and depositional uses' to allow the 'protection and recovery of marine ecosystems'.³⁶ The UK government agreed that 'by setting aside some areas of sea with high levels of protection, HPMA's will allow nature to recover to a more natural state, allowing the ecosystem to thrive *in the absence of damaging activities*'³⁷ (emphasis added). This statement seems to recognise that MPAs where damaging activities are not prohibited do not allow nature to recover to the same extent and that further protections are required. But despite this, the government consulted on only five HPMA sites – the bare minimum suggested for implementation by the review – and, at the time of writing, it is not clear whether all five will even be piloted.

Greenpeace confronts a supertrawler fishing inside a protected area © Andrew McConnell / Greenpeace



UK MARINE ECOSYSTEMS: WHAT'S AT STAKE?

Although sometimes perceived as cold, unexciting places, UK oceans can be richly biodiverse, vibrant habitats that sustain cherished species.

Home to seagrass meadows and kelp forests, these habitats are some of the most vital and biodiverse places on the planet. Indeed, our seagrass meadows boast the UK's only seahorse populations, whilst our kelp forests provide food and shelter for juvenile fish which in turn attract larger fish and other predators like grey seals. These habitats can also provide a buffer against storm surges and reduce coastal erosion rates which, as the climate crisis worsens, is becoming ever more important.

Reefs also occur widely around the UK coast, in both inshore and offshore waters. Offshore areas can reach depths of over 5,000 metres and sustain vast, colourful, cold-water coral reefs – some of which are over 8,000 years old. Reefs are essential for biodiversity, as well as playing an important role in carbon sequestration.³⁸

Carbon sequestration is the process by which marine ecosystems capture and store atmospheric carbon dioxide. This stored carbon is known as 'blue carbon'. In the UK, examples of blue carbon habitats include seagrass beds, reefs, kelp forests and saltmarshes, but significant losses of these habitats over the last 100 years have reduced the amount of carbon UK seas can store.³⁹ Destructive fishing has contributed to this loss, with bottom towed fishing gear disrupting seabeds and releasing carbon back into the atmosphere.

The research in this report shows that whilst 80% of the total predicted area of these crucial habitats are nominally protected within MPA designations (bearing in mind that, currently, protected status does not signify meaningful, enforced protection), just 22% is closed to all bottom towed gear. When we look at specific habitats, 19% of the UK's mapped seagrass habitats remain vulnerable to fishing, with 62% of kelp forests and 84% of reefs (see [Appendix 8](#)).



Common Sunstar Starfish, North Sea
© Greenpeace / Gavin Newman



Seal on the Isle of Canna, Scotland
© Will Rose / Greenpeace

As we have seen, site-wide no-take zones offer the best level of protection, rather than piecemeal approaches that allow certain types of fishing to continue in MPAs.⁴⁰ When it comes to assessing the success of an MPA, fish biomass is a powerful measure, providing a strong indication of ecosystem health. A study in 2017 found that the biomass of fish is, on average, 343% greater in no-take MPAs compared to partially protected ones. This figure soars to 670% greater when compared to unprotected areas⁴¹ – compelling evidence of the benefits of comprehensive protection.

Those who support the operation of industrial pelagic fishing vessels like supertrawlers in MPAs argue that they do not damage the protected features of most of the MPAs in which they operate, particularly those established to conserve seabed ecosystems. But this ignores the scientifically demonstrated benefits⁴² of fully protected MPAs. By definition, the components of an ecosystem are interconnected, so it is inconceivable to suggest that a massive disturbance to one aspect, such as removing large volumes of fish from the water column, will not have repercussions on other parts of the habitat. Removing large amounts of marine life affects the entire ecosystem,⁴³ as well as its ability to rebuild and restore, or deal with the impacts of climate change. Further, the risk of accidental bycatch or lost fishing gear by large industrial vessels has a disproportionate impact on ocean health if it occurs within an area designated to protect a particularly vulnerable or rare habitat.

Also at stake are the UK's coastal communities and sustainable fishing fleets. UK fish stocks have plummeted in recent years, with only three of the UK's ten most economically important fish populations currently in a healthy state.⁴⁴ This means fishermen have to work 17 times as hard for the same size catch as the 1880s,⁴⁵ made harder by the fact that, whilst under-10 metre fishing vessels account for 77% of the UK fleet, they hold less than 4% of the fishing quota.⁴⁶

"The biomass of fish is, on average, 343% greater in no-take MPAs compared to partially protected ones. This figure soars to 670% greater when compared to unprotected areas."



Estuary seahorse, South Coast
© Nick Hobgood (CC BY-SA 3.0)

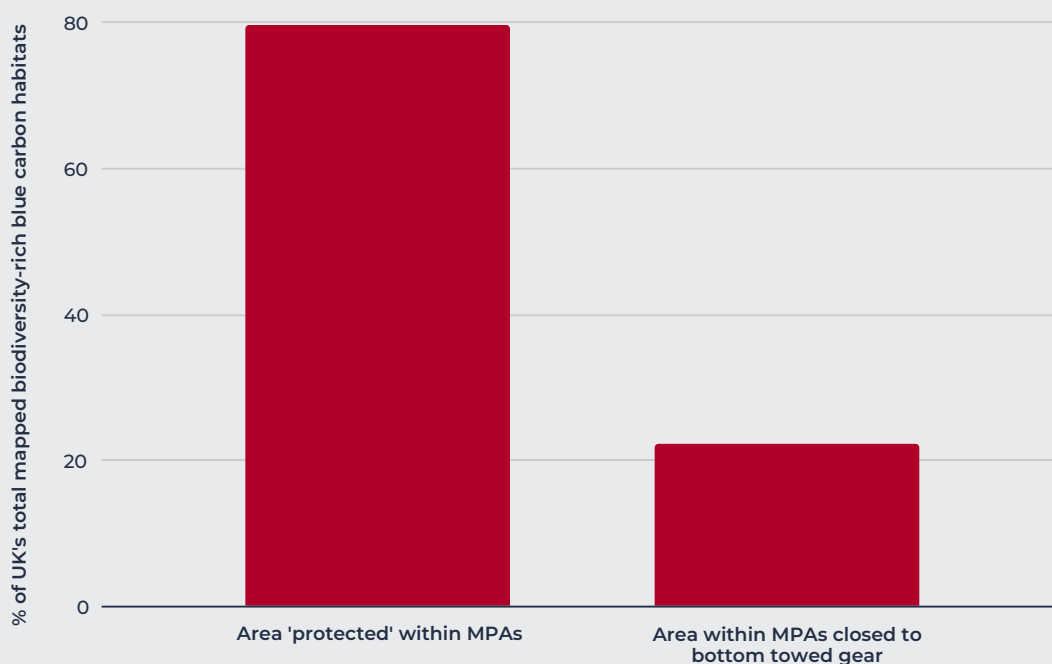


FIGURE 4

Protection of mapped seagrass, kelp forest, reef and saltmarsh habitats in the UK EEZ. Lack of effective regulation in MPAs leaves most of these habitats open to damaging bottom towed gear.

"Comprehensive marine protection is a win-win for the UK, restoring marine ecosystems, reviving the livelihoods of the people who depend on them and protecting blue carbon sequestration."

These communities can potentially gain enormously from fully and highly protected MPAs. Studies show that properly protected MPAs result in larger fish populations and bigger fish, both inside and outside of the protected area.⁴⁷ This is known as the 'spillover effect', boosting catches and profits for fishers whilst contributing to food security and coastal economies.⁴⁸ The benefits to fishers can be significant, with a 2022 study of Europe's MPAs finding that every euro invested in a highly protected MPA generates at least 10 euros in economic output.⁴⁹

A recent scientific review (of over 22,000 publications) concluded that 'marine conservation can significantly enhance carbon sequestration, coastal protection, biodiversity, and the reproductive capacity of marine organisms as well as fishers' catch and income. Most of these benefits are only achieved in fully or highly protected areas and increase with MPA age.⁵⁰ Comprehensive marine protection is a win-win for the UK, restoring marine ecosystems, reviving the livelihoods of the people who depend on them and protecting blue carbon sequestration – a vital ocean function that must be safeguarded in the race to tackle climate change.

Sustainable fishing off the coast of Newhaven
© Andrew McConnell / Greenpeace



Case study: Inner Dowsing, Race Bank and North Ridge

Special Area of Conservation

The Inner Dowsing, Race Bank and North Ridge MPA is located off the south Lincolnshire coast and covers an area of 845km². The site lies across the 12nm territorial sea limit, with much of its area offshore. It was designated to protect a wide range of sandbank types, as well as biogenic reefs formed by Ross worm. These reefs provide habitat for fish and invertebrates, increasing the biodiversity on and around them in a similar way to tropical coral reefs. The site is important for sand eels, upon which many fish, birds and cetaceans depend, and also as a breeding ground for commercially important fish species such as herring.

This MPA was one of the four offshore MPAs given some protection from bottom towed fishing gear in 2022. Unlike the Dogger Bank and South Dorset MPAs, in which there were site-wide bans on bottom trawling, the byelaw for this MPA was only assigned to small parts where key features are present. It covers only specified areas of sandbank and reef. This means that the government has taken the 'feature-based approach' rather than the 'whole-site approach' to management, with bottom towed fishing gear prohibited in just a small fraction of the site rather than the entire MPA. Therefore, the full ecological, environmental and social benefits of this MPA will not come to fruition. A patchwork of varying protections within a site is much more difficult and bureaucratic to enforce, hampering efforts to safeguard this crucial ecosystem. If the 'feature-based' approach to protection is copied elsewhere within the UK's MPA network, the government is much less likely to meet its 30x30 commitment.

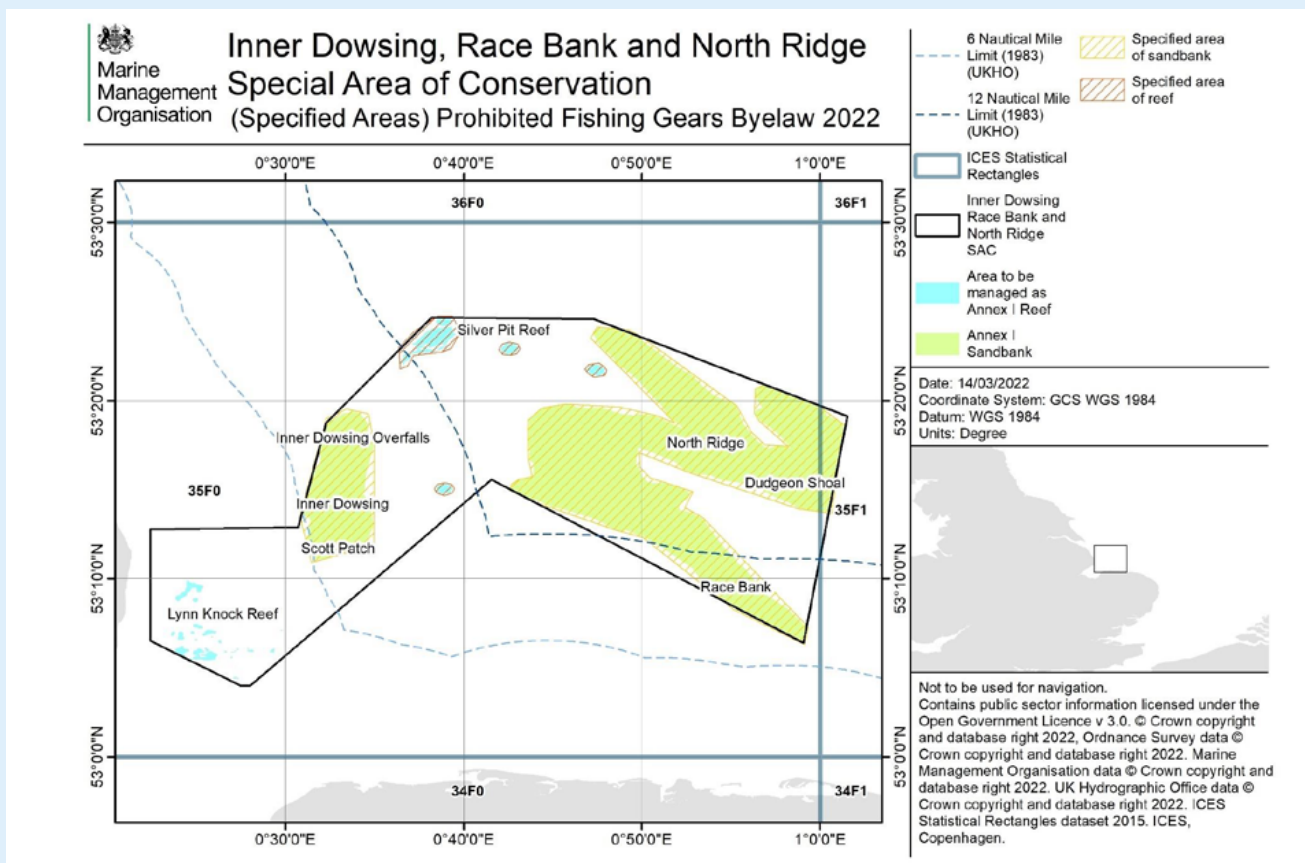


FIGURE 5

Map of Inner Dowsing, Race Bank and North Ridge Special Area of Conservation⁵¹ highlighting the limited areas which the byelaw prohibiting bottom trawling applies to. This 'feature-based approach' to protection means bottom towed fishing gear is only prohibited in the vicinity of the most sensitive parts of an MPA, rather than across the entire site.

CONCLUSION

This investigation demonstrates that the UK's network of MPAs are protected in name alone. In theory, offshore and inshore MPAs cover 38% of UK waters but, in the overwhelming majority of cases, there has been minimal progress towards achieving even their existing, often insufficient, conservation targets. Not surprisingly, these targets are increasingly difficult to achieve given that destructive industrial vessels are still allowed to operate within protected waters.

On a positive note, the UK MPA designations are extensive and well-sited due to a rigorous process of network design and site selections. Yet actual protection has barely begun, with site-specific byelaws and a piecemeal approach to protection hindering the process. Indeed, as things stand, the government is not on track to meet its target to deliver at least 30% full or high protection of UK waters by 2030. This is not only troubling news for marine ecosystems but for the UK public too, a majority of whom want this level of protection in UK MPAs,^{52, 53} not to mention the UK fishing industry, whose much-promised post-Brexit benefits have yet to materialise.⁵⁴

As the climate crisis worsens⁵⁵ and UK oceans suffer the consequences, now is the time to act. Our [roadmap to 30x30](#) sets out exactly what to do next, with a step-by-step plan to reach 30% full or high protection of UK waters by 2030.

This ambitious roadmap will not only benefit marine ecosystems, coastal communities and the public at large, it will increase the government's credibility on the global stage as it calls for other world leaders to support 30x30. Two upcoming global negotiations will significantly determine the fate of the world's oceans: the Convention on Biological Diversity's 15th Conference of Parties in December 2022 and the resumed fifth round of negotiations for a Global Ocean Treaty. The latter were suspended without an agreement in 2022 and now require an emergency final round in early 2023. As such, matching the UK's 'world-leading' rhetoric with domestic action has never been more important.

"Applying licence variations to restrict all industrial vessels from operating within MPAs should be prioritised as the swiftest, simplest and most effective mechanism for increasing protection of MPAs."



Dolphins, English Channel © Kate Davison / Greenpeace

The only way to properly protect the UK's marine environment is through the whole-site approach to management.⁵⁶ With political will, this is something that could be achieved this year. Instead of the piecemeal process of introducing partial-site byelaw restrictions following months of consultation, the government should use its post-Brexit powers to apply variations to fishing licences, excluding all industrial fishing vessels such as supertrawlers, bottom trawlers and fly-shooters from the entire MPA network. That is, after all, what the Fisheries Act 2020 allows for.

Applying licence variations to restrict all industrial vessels from operating within MPAs should be prioritised as the swiftest, simplest and most effective mechanism for increasing protection of MPAs. This would be a major step towards delivering full or high protection for at least 30% of UK waters by 2030 and is complementary to the ongoing byelaws approach. There are many precedents for using fishing vessel licence variation powers with rapid effect – for example, the government's electric pulse trawler ban in January 2021.⁵⁷

The licence variation approach is essential to reach 30x30, but this needs to be followed up with permanent byelaws to secure lasting ocean protection. The process for establishing byelaws to provide site-wide protection across the whole MPA network must begin as soon as possible.

As one of the first steps set out in the roadmap, the government must immediately set all catch limits at or below maximum sustainable yield. We also expect the promised £100m UK Seafood Fund to support the long term future and sustainability of the UK fisheries and seafood sector to be allocated in full by the end of this year, and significantly more funds added to the pot for 2023. That same year, the additional fishing quota gained through Brexit must be distributed on the basis of environmental, social and local economic criteria. By the end of 2024, when the withdrawal agreement 'transition period' is over, the UK should extend exclusive access for fishing opportunities for UK boats to the 12nm zone, in line with what the government has consistently promised UK fishermen. In 2025, all existing fishing quota must be reallocated on environmental, social and local economic criteria.

"To genuinely embody the role of a world-leader in marine protection, the UK government must properly protect 30% of UK waters by 2030."

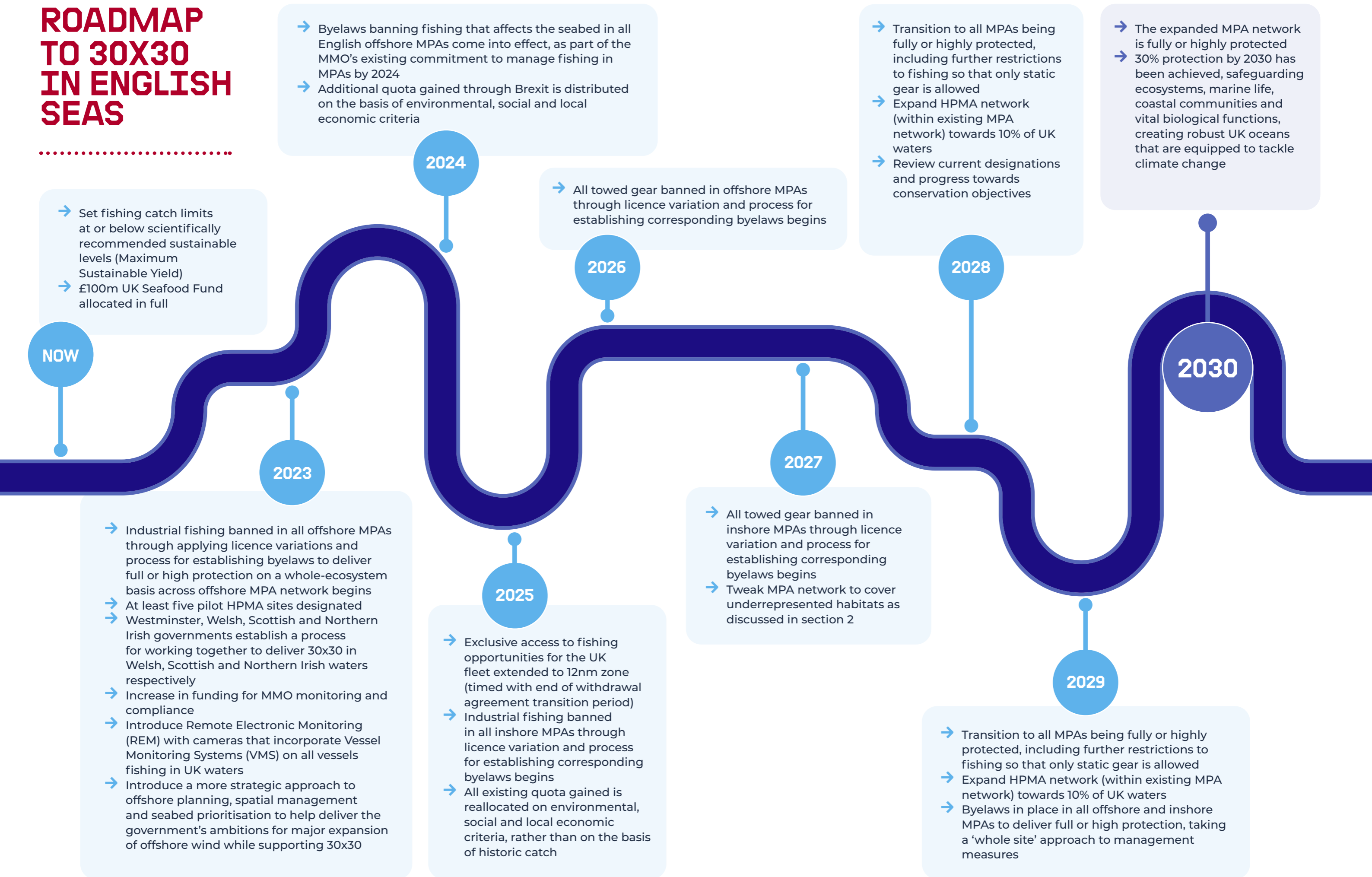
Finally, all sites must be regularly monitored and the data made accessible so that fishing communities and the wider public can see the benefits of truly protected MPAs. The existing MPA network should be reviewed and modified so that designations form a network of ecologically coherent sites and provide the coverage of all habitats necessary to reach the requirements of 30x30. All of these steps depend on the Joint Nature Conservation Committee (JNCC) and the Marine Management Organisation (MMO) being properly funded, with additional funds for monitoring and enforcement allocated immediately.

The time for grand speeches and photo opportunities is over. Protection on paper is simply not enough. If we are to robustly and effectively tackle the climate crisis, the UK government must act urgently to safeguard MPAs from destructive fishing. This is not only a matter of marine ecosystem recovery. It affects coastal communities, the UK fishing industry and generations to come – generations who stand to inherit an island nation that, whilst sovereign, will have oceans devoid of life. Further still, to set a powerful example to members of the Global Oceans Alliance and to genuinely embody the role of a world-leader in marine protection, the UK government must follow the steps set out overleaf and, in doing so, properly protect 30% of UK waters by 2030.

Razorbill on Shiant Isles, Scotland © Will Rose / Greenpeace



ROADMAP TO 30X30 IN ENGLISH SEAS



APPENDICES

APPENDIX 1: Number of MPAs analysed and their total area

The total number of MPAs analysed and the total area they cover differs from headline JNCC figures. Our analysis is based on raw data sourced from the JNCC MPA mapper and Data Hub for all European marine sites and English MPAs, the Department of Agriculture, Environment and Rural Affairs (DAERA) for the Northern Irish MCZs, lle.gov.wales for the Welsh MCZs and NatureScot for all Scottish MPAs. The number of MPAs in this analysis corresponds with the online JNCC MPA Mapper, but does not correspond with the headline JNCC Marine Protected Area Network Statistics (386 MPAs covering 317,220 km² vs. 374 MPAs covering 338,545 km²). This is because in some instances MPAs which are split into different zones are considered in our analysis as separate while the JNCC groups them together, for example Medway Estuary MCZ, and the JNCC statistics summary includes the UK continental shelf in addition to the UK EEZ.

Any shapefiles used in this analysis were clipped to the UK EEZ, sourced from marineregions.org, to ensure that they were directly compatible with each other, as MPAs and the JNCC's broadscale habitat map were created using different datasets and therefore had different fine-scale coastlines. As a result of this analysis using a general EEZ boundary to clip all the files, some MPAs (n=11) that technically fall outside of the EEZ – located to the far west of Scotland and in inshore harbours – were not included in the total area. These were therefore not included in any area calculations and could not be assessed for any fisheries closures, as they fell outside of the EEZ shapefile used in this study.

APPENDIX 2: Research methodologies

EUNIS level 3 gap analysis

EUNIS level 3 habitats:

Using the JNCC 'EUNIS level 3 combined map', all habitats were dissolved to their level 3 broad-scale habitat (e.g. A1.1 High energy littoral rock) (n=89). These were then intersected with the UK EEZ and the shapefiles of the national waters for each country/region to provide one layer for each habitat type in each region (n=170). The EUNIS level 3 habitat map is a predictive habitat map created using models and survey data. This does not mean that each habitat is actually where the map predicts, or that it is the exact same shape and size. The map is a predictive tool, used to help inform management decisions.

Due to the nature of how the habitat map is created, there are some very small, very specific habitats that are created that are likely very similar to another habitat type. These habitats tend to be very small in area and therefore may be 'missed' by MPA protection according to the analysis. However, on looking at what the habitats actually are, sometimes it can become evident that these habitats can really be counted as another similar, or more general, habitat type and therefore likely are represented and protected, it is just a difference of a code generated by a computer model. The outputs of this type of analysis are best assessed on an individual level rather than taken at face value. On a similar note, sometimes when the model output does not fit a certain habitat type, the area is assigned to the next highest common denominator / overarching umbrella habitat. Due to that, there are some very small areas of very general habitats. Again these are best considered on an individual basis as they are likely not key habitats that definitely need protection, and they do not represent the full extent of that full, generalised habitat type, as most of that habitat would be represented by areas that fit into finer scale habitat types (i.e. A3.4 rather than A3). However, it is likely that some missed habitats are important and dissimilar enough to warrant a push for protection, and these can be picked out by looking at what the habitat type is rather than just looking at the code.

Marine Protected Areas (MPAs):

MPA shapefiles were downloaded from JNCC where available and then other relevant authorities where this information was not available. A dissolved layer was created for each MPA type (n=4) to act as a mask which could be used to intersect with each of the habitat layers. Since some MPA designations overlap with each other, a combined mask containing all MPA types was created. All five MPA masks were then clipped by the UK EEZ and the shapefiles of the national waters for each country/region to obtain the areas only covering marine habitats for each MPA type in each region.

Analyses:

Using the Lambert projected coordinate system for Europe (ESRI:102014) the area (km²) was calculated for each EUNIS level 3 habitat, both as a total and by region. The same was done for each of the five MPA masks, calculating the total marine area covered and the total area in each region. Each EUNIS level 3 habitat was then clipped by each of the five masks, returning the area of that habitat covered by each MPA type (or all MPAs combined) in each region. If an MPA designation type did not overlap with the habitat it was returned as NA. These areas were then used to calculate the percentage protection provided for each habitat, the proportional representation of each MPA type towards the total protection afforded to each habitat and the total protection by MPA type.

Detailed data analysis is available on request.

Individual MPA analyses

MPA analyses:

Based off of the MPAs used in the gap analyses, the MPA designation documentation (e.g. JNCC, Natural England, NatureScot, gov.im) was assessed to determine the name, MPA type, the region the MPA was in, whether it was offshore or inshore and the year the MPA was established (n=386). A basic Google-based search was then undertaken to see if there was any publicly available information regarding the conservation ambition and conservation progress for each of these MPAs. Where possible this information was taken from (in order of preference/quality): the relevant country bodies (e.g. JNCC, Natural England, Nature Scot), the OSPAR website, scientific reports, summary reports, location/MPA specific websites and then any other

available sources of information. For a lot of the MPAs there was no available information (see [Appendix 5](#) and [6](#)). A brief search was also undertaken to determine what level of protection from anthropogenic activity was afforded to each MPA. However, after this yielded little to no results, a more structured analysis was undertaken.

There are some brief caveats to consider with this part of the data analysis:

- Any assessment of the management, monitoring or conservation ambition/progress of an MPA was considered with a focus on seabed habitats and how the EUNIS level 3 habitats might be affected. This analysis is not an assessment of the MPA as a whole and it does not consider conservation action taken towards non-benthic features.
- Just because the management or monitoring plans were not returned by performing a basic Google search, this is not to say that this information does not exist. Information on conservation progress, management and/or monitoring may well be available and simply not available to the public, or were not returned using the simple searches used in this brief part of the analysis.
- Most of these MPA assessments were run in 2020, two years before the time of writing in 2022, and the information has not been updated since, aside from the new 2022 MPA designations. There may now be updates as to the progress, monitoring and/or management for the MPAs that were assessed in 2020, where the information was not available before.

Fisheries closures:

Fisheries byelaws from the governing body of each region regarding fisheries management were assessed and those referring to any form of bottom towed gear (e.g. trawling) were retained. Byelaws from inshore and offshore fisheries management organisations were also assessed and any additional fisheries closures detailed on kingfisherrestrictions.org were also included in the analysis. The extracted byelaws were then split into four groups:

1. Partial restrictions on gear (i.e. seasonal or specific gear type restrictions)
 - To be classed as a level 2 or higher the closure had to prohibit all types of mobile gear. If only one type was restricted (e.g. trawling) this was counted as a partial closure
2. No bottom towed gear (i.e. no bottom towed trawling, dredging, seine nets or surrounding nets)
3. No towed gear (i.e. neither pelagic nor bottom towed)
4. No-take zone

Byelaws relating to static gear were not assessed in this analysis. Using the coordinates provided in the byelaw documentation, a shapefile was then created for each closure with a protection level assigned to it. Where management measures overlapped, the most restrictive management measure was kept. The resulting layers were then dissolved to create a mask for each closure level and all closures as a whole. Again using the Lambert projected coordinate system for Europe (ESRI:102014), the area (km²) was calculated for each of the closure levels as a total and by region.

It is important to note that due to level 2 and higher requiring a prohibition on all types of mobile gear (bottom towed or otherwise depending on the level), there may be some areas where the protection level has been underrepresented in this study as they may have higher protection levels by proxy i.e. fishing gears not explicitly mentioned in the legislation may not/cannot be used in that area.

MPA protection from fisheries:

Each individual MPA was then assessed alongside the closures determined by fisheries byelaws. Where an MPA overlapped with a closure, the level of protection afforded by that closure was assigned to the MPA and the percentage area of the MPA protected at each level was recorded. Since some of the closures only overlapped with part of the MPA, a 'Main' level was provided, which is the average level provided to the MPA as a whole, calculated as the maximum level that covers the MPA by at least 50% of the area. Each MPA was also assigned a 'Maximum' level, which is the highest level of protection provided to that MPA, even if it only covers a small part of that MPA. These were then used to create a more structured level of protection for each MPA.

The area of protection at each level of fisheries closure was then calculated for each MPA type and for the MPA network as a whole in each region by intersecting the closures by each of the five masks created during the EUNIS level 3 gap analysis.

Carbon sequestration in biodiverse habitats

Kelp forests, seagrass meadows, reefs, coastal wetlands and marshes are vital for biodiversity and carbon sequestration. The EUNIS level 3 habitats that relate to these were selected and split into the relevant categories. The specific area of each, the area protected, the area in each MPA type and the area in each level of closures (1-4) was extracted from the results of the previous two analyses. This was then used to provide a summary of the area of each group available in UK waters, how much is protected by MPAs, and how much is protected from fishing activity.

APPENDIX 3:

EUNIS level 3 habitats which, under the conditions of this analysis, do not have at least 30% of their total area covered by MPAs

EUNIS level 3 habitat	Proportion of total modelled habitat area needed to reach 30% coverage in MPAs	Total modelled area needed to reach 30% coverage in MPAs (km ²)
High energy littoral rock + Features of littoral rock	27.9	0.0135
Moderate energy littoral rock + Features of littoral rock	16.0	0.0052
Atlantic and Mediterranean moderate energy infralittoral rock + Atlantic and Mediterranean moderate energy circalittoral rock	14.2	11.1504
Atlantic and Mediterranean moderate energy infralittoral rock + Sublittoral sediment	4.2	0.1617
Features of infralittoral rock	29.3	0.0168
Naming error. Subset of Infralittoral rock and other hard substrata	15.5	14.1024
Naming error. Possibly: Infralittoral rock and other hard substrata + Littoral sediment	26.1	4.0237
Naming error. Possibly: Infralittoral rock and other hard substrata + Circalittoral rock and other hard substrata	28.2	0.8521
Atlantic and Mediterranean high energy circalittoral rock + Sublittoral coarse sediment + Features of infralittoral rock	1.7	0.9200
Atlantic and Mediterranean moderate energy circalittoral rock + Sublittoral sediment	0.9	0.4261
Sublittoral sand	2.2	5,645.4948
Sublittoral sand + Sublittoral mixed sediments	30.0	0.6696
Sublittoral mud	4.4	2,824.4874
Features of sublittoral sediments	20.8	0.1927
Coastal habitats	30.0	0.0002

These are modelled habitat distributions which have also been clipped to a project-specific EEZ boundary, so the resulting areas are not expected to be true to life, they are a representation.

APPENDIX 4: UK MPA fisheries closures

Type of protection	Entire MPA network (386)		Offshore MPAs (76)	
	Number of MPAs	Percentage of total network	Number of MPAs	% of total offshore MPAs
Not assessed for closures (MPA does not overlap EEZ)	11	3	2	3
Zero protection from fishing across majority (50%+) of MPA area	122	32	47	62
Zero protection from fishing across 100% of MPA area	91	24	34	45
Minimum of seasonal or gear specific closures in majority (50%+) of MPA area	255	66	27	36
Minimum of site-wide seasonal or gear specific closures	207	54	12	16
Protection from bottom towed gear in majority (50%+) of MPA area	109	28	5	7
Site-wide protection from bottom towed gear	63	16	2	3
Protection from all towed gear in majority (50%+) of MPA area	52	13	1	1
Site-wide protection from all towed gear	29	8	0	0
'No-take zone' in majority (50%+) of MPA area	3	<1%	0	0
Site-wide 'no-take zone'	2	<1%	0	0

APPENDIX 5: OSPAR conservation progress of offshore MPAs

Data accessed from July-October 2020. Data regarding new MPAs and expansions was then assessed in May-June 2022 and added to the analysis. Please refer to [Appendix 2](#) for the methodology.

Conservation progress (OSPAR)	Meaning	TOTAL	Percent
NA	Too new	28	36.84
Unknown	Not enough information (no progress)	30	39.47
Low	No progress	2	2.63
Medium	Partial progress	16	21.05
High	Progress towards goals	0	0.00

APPENDIX 6: Site monitoring effort of offshore MPAs

Data compiled in 2020 via search engine. Data regarding new MPAs and expansions was then assessed in May-June 2022 and added to the analysis. Please refer to [Appendix 2](#) for the methodology.

Site monitoring effort	Meaning	TOTAL	Percent
NA	Too new/Established 2019	22	28.95
None	No assessments or evidence of assessments	53	69.74
Low	No updated assessment since 2015	0	0.00
Medium	Updated assessments since 2015	0	0.00
High	Evidence of regular assessments	1	1.32

APPENDIX 7: Fishing hours research methodology

Global Fishing Watch provide downloads of fishing effort in 0.01 lat/lon square grid cells over time. In July 2022, Greenpeace downloaded data on 2021 fishing effort in UK offshore MPAs in order to calculate total fishing effort in offshore MPAs and in the South West Deeps (East) in particular. Fishing vessels with specific gear types were identified via the EU Fleet Register and FAO Fishing Vessels Finder, then their MMSI numbers were used to build subsets of fishing effort in offshore MPAs for different vessel types.

APPENDIX 8: Extent to which mapped biodiversity-rich blue carbon habitats are covered by the MPA network and regulations on bottom towed gear

	Seagrass	Kelp forests	Reefs	Coastal wetlands /marshes	All
	% of full predicted habitat	% of full predicted habitat	% of full predicted habitat	% of full predicted habitat	% of full predicted habitat
Total area covered by UK MPAs	93.8	76.5	79.5	87.5	79.6
Total area closed to bottom towed gear	80.6	37.8	15.6	24.0	22.2

These are modelled habitat distributions which have been clipped to a project-specific EEZ boundary, so the resulting areas are not expected to be true to life but are a representation.

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