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Irish Wildlife Trust submission to the public consultation on 'Expanding Ireland's Marine Protected Area Network'

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Due to the underexplored nature of our ocean and the unprecedented pressures it is under from overexploitation, pollution and climate change, the science on what needs to be done to reverse biodiversity loss and maintain a stable climate is changing at a fast rate. We must be ready to act on the latest scientific advice, which at the moment dictates the setting aside of at least 30% of our ocean as marine protected areas (MPAs) by 2030 that exclude industrial fishing and harmful infrastructure projects. As time goes on and human activities degrade our ocean further, the extent of the ocean that must be protected is likely to increase. Therefore, 30% MPA coverage by 2030 is a milestone, the bare minimum of what we must protect. We urge the Irish government to be ambitious in achieving this milestone, or exceed it, to become a global leader in marine protection for the benefit of coastal communities, climate and biodiversity.

Summary of our views on the MPA report

We welcome the report as a significant achievement towards the establishment of an MPA network in Ireland. We note the many positive recommendations contained within the report but caution that the implementation of these will take many years. We urge the government to promptly provide a timeline with significant milestones to 2030, and recommend that at least 10% of the Irish marine region be protected by 2025.

Recommendations of particular significance, which should be acted upon swiftly, are the

- Establishment of a national coordinating body to coordinate the planning, implementation and management of MPAs across government;
- Development of new primary MPA legislation;
- Early and sustained stakeholder engagement throughout the MPA designation and management processes;
- Application of a Systematic Conservation Planning approach.

There are a few things we would have wished to see highlighted more clearly in the report, and these include

- A clear recommendation that all new MPAs must be in line with IUCN guidelines (i.e. industrial and harmful human activities are excluded from ALL MPAs).
- More emphasis on the need for a 'whole-site' approach rather than the 'feature-based' approach which has been used with limited success in existing Special Areas of Conservation (SACs) and Special protection Areas (SPAs).
- More emphasis on the need for no-take marine reserves, especially in the offshore regions, for ocean recovery.
- More emphasis on the urgency with which the government must now act. Some of the recommendations in the report will take many years to implement, so for 30% MPA coverage to be achievable by 2030 we will need to begin without delay.



Because the implementation of the report's recommendations may take several years, we recommend the following actions to be taken as a matter of urgency:

- Produce management plans for existing SACs and SPAs, and identify vulnerable areas that should become no-take zones, e.g. seagrass and maërl beds.
 Management plans must include a restriction on bottom trawling and dredging and intensive aquaculture in biodiversity and carbon rich inshore SACs and SPAs.
- Begin active restoration projects with community engagement, especially for the native oyster and seagrass meadows.
- Conduct sensitivity mapping so that locations of potential future MPAs can be considered ahead of the designation of Strategic Marine Activity Zones.
- Develop communication platforms so stakeholders can begin to participate in the MPA process more effectively, e.g. through facilitated regional stakeholder fora with balanced representation that meet on a regular basis.
- Develop funding pathways for a just transition for those sectors negatively impacted by the MPA network, e.g. through the new European Maritime Fisheries and Aquaculture Fund.
- Designate new SACs for reefs and SPAs for seabirds asap, so that the CFP Article 11 process can begin without delay. We also urge the Minister to be strategic when planning the designation of new SACs in order to use the Habitats Directive to its fullest potential. For example, new offshore SACs could be designated for both reef and the bottlenose dolphin in order to protect the benthic and pelagic zones. This would allow much higher ambition when it comes to the introduction of conservation measures. A ban on all industrial fishing will protect the whole site and safeguard vulnerable pelagic species from bycatch, effectively becoming no-take zones.

The International Union for the Conservation of Nature (IUCN) has defined industrial fishing as boats over 12 metres long with a capacity of >50 kg catch/voyage, requiring substantial sums for their construction, maintenance, and operation and mostly sold commercially, and all fishing using trawling gears that are dragged or towed across the seafloor or through the water column, and fishing using purse seines and large longlines.



Status of Ireland's marine environment and the case for MPAs Recommendation 1: The report recognises the degraded state of Ireland's marine environment and rightly cautions against the sliding baseline syndrome. Given the dire state of Irish seas and the urgent measures that need to be taken to protect our ocean, the second key message of section 1.1.5 should have been the following:

"Many species, habitats and ecosystems are in decline and continue to be threatened. It is difficult to assess the overall condition of the marine environment in Ireland at this point in time and more data is urgently needed."

Recent environmental assessments of Ireland's seas are worrying. In 2008, the EU introduced the Marine Strategy Framework Directive (MSFD) to protect the marine environment across Europe more effectively. The directive is now in its second cycle.

The directive's main goal when it was first introduced was to achieve Good Environmental Status (GES) in EU marine waters by 2020. This has not been achieved. Instead, loss of many species and habitats has intensified¹. The key to achieving GES under the MSFD is the Programme of Measures, which should include the designation of a well-managed ecologically coherent network of Marine Protected Areas (MPAs). While other countries have already designated much of their marine territory as MPAs, Ireland currently nominally protects 2.13% of its Exclusive Economic Zone (EEZ). By contrast, nearly every square meter of the Irish EEZ is fished (except the deep sea where bottom trawling below 800m is banned, see figure 1) and over 50% of the Celtic Sea is subject to bottom trawling each year².



Figure 1: Fishing effort of vessels >15m in length using towed gears (demersal and pelagic) in the period 2015-2018.

¹ REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL on the implementation of the Marine Strategy Framework Directive (Directive 2008/56/EC)

https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1593613439738&uri=CELEX:52020DC0259

² ICES (2021) EU request on how management scenarios to reduce mobile bottom fishing disturbance on seafloor habitats affect fisheries landing and value



Other EU directives aimed at enhancing environmental health are the Habitats and Birds Directives. These important directives call for the designation of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs), which together form a European network of protected sites (known as the Natura 2000 network). The main aim of these directives is to reach Favourable Conservation Status of habitats and species for which the SACs and SPAs were designated. This has not been achieved to date. All of Ireland's 2.13% protected area coverage is in the form of these SACs and SPAs.

In the most recent Habitats Directive Article 17 report, it was shown that most marine habitats in Ireland's SACs are deteriorating³. The causes for the deterioration are manifold and include poor water quality, fishing and aquaculture. None of these pressures are being tackled in the current system because the Habitats Directive has not been fully implemented in Ireland, evident by the lack of crucial conservation measures. As a result, the European Commission has referred Ireland to the Court of Justice of the EU⁴.

Significant biodiversity declines

Declines of certain habitats and species in the marine environment despite the above legislation have been particularly worrying. Examples are listed below.

Eelgrass: Ireland's existing SACs contain 70% of all mapped eelgrass beds. Extensive loss of this keystone species has occurred over the past decade, leading to an overall 'bad' conservation status of the European priority habitat 'Large shallow inlet and bay'⁵. Eelgrass is an important ecosystem engineer and many commercial fish and shellfish species (e.g. cod) rely on eelgrass during certain stages of their life cycle⁶. Exact reasons for eelgrass decline are unknown, but poor water quality from land-based sources may be the main culprit. Seagrasses need clear water to photosynthesise and any increase in sedimentation from river run-off will reduce their ability to do so⁷. Causes for increased sedimentation in rivers are mainly changes in hydrological flow as a result of physical morphological changes, agriculture, and poor forestry practices, so it is possible that this has downstream impacts in estuaries⁸. In addition, there are still 35 towns and villages in Ireland that discharge raw sewage directly into the rivers or sea⁹.

Oysters: Historical records show that oyster reefs once extended almost continuously from Wicklow Head to Carnsore Point, with 17,000 barrels (between 10 and 12 million oysters) landed in Arklow in 1868 alone¹⁰. Today, native oyster beds can only be found in a few bays on the west coast with east coast oysters now functionally extinct due to overfishing.

Seabirds: Iconic Irish seabirds such as the Kittiwake, Puffin and Razor Bill have all been placed on the Red List of conservation concern, along with several waders¹¹.

⁶ Lilley, R. and Unsworth, R., 2014. Atlantic Cod (Gadus morhua) benefits from the availability of seagrass (*Zostera marina*) nursery habitat. Global Ecology and Conservation, 2, pp.367-377.

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³ https://www.npws.ie/publications/article-17-reports/article-17-reports-2019

⁴ https://ec.europa.eu/commission/presscorner/detail/en/IP_20_1235

⁵ https://www.npws.ie/sites/default/files/publications/pdf/NPWS_2019_Vol2_Habitats_Article17.pdf

⁷ Choice, Z. D., Frazer, T. K., & Jacoby, C. A. (2014). Light requirements of seagrasses determined from historical records of light attenuation along the Gulf coast of peninsular Florida. Marine Pollution Bulletin, 81(1), 94–102. https://doi.org/10.1016/j.marpolbul.2014.02.015 ⁸ EPA Ireland (2020)

 ⁹ https://www.irishtimes.com/news/environment/raw-sewage-flowing-into-rivers-and-sea-in-35-places-across-ireland-1.4406687
 ¹⁰ A. E. J. Went, 1963, Dublin Historical Record

¹¹ BirdWatch Ireland and Royal Society for the Protection of Birds (2021) Birds of Conservation Concern in Ireland 4: 2020–2026 https://birdwatchireland.ie/app/uploads/2021/04/BOCCI-2020-2026.pdf



Whales and dolphins: The Irish Whale and Dolphin group has reported that the beginning of 2021 had the highest yet recorded Common Dolphin strandings¹².

Sharks: Two thirds of Ireland's shark species are either threatened or near-threatened with extinction¹³. The angel shark is now near extirpation in Irish waters, with only two remaining hotspots in Tralee Bay and Clew Bay¹⁴. The main anthropogenic impacts on threatened species are over-exploitation by commercial fisheries and habitat destruction and disturbance¹⁵.

Other marine fish: The latest MSFD assessment showed the environmental status of 99 commercial fish and shellfish populations (60%) is currently unknown, while for 44 other populations (22%), Good Environmental Status has not been achieved¹⁶. This means Ireland has failed to end overfishing by the legal deadline of 2020 as required under the Common Fisheries Policy.

The report highlights very well the issue of shifting baselines and that over the centuries the marine environment has lost significant biomass due to ongoing overexploitation. Therefore, it is strange that the report's key message states that 'much of Ireland's marine environment is in comparatively good condition' when the condition can arguably not be properly assessed in the absence of comprehensive data from the past 100-200 years or so. If this conclusion is based on the MSFD assessments, we would strongly argue for it to be rewritten as suggested in Recommendation 1, as the MSFD assessments are based on poor methodology. Please see our submission on the latest MSFD assessment here for more information. The danger is that many people will not read the full report, only the key messages, and therefore the way these key messages are phrased is important.

Relevance of biodiversity decline to climate change

Recommendation 2: The report highlights the need to protect carbon-rich habitats to help mitigate climate change. The IWT strongly support this notion and recommend that carbon storage potential be included as a criterion for MPA site selection and management.

The key to an ecosystem's stability is biodiversity¹⁷. Healthy and diverse ecosystems are therefore more stable and resilient when faced with climate change stressors such as rising temperatures, increased storm surges or reduced oxygen¹⁸. Ireland's marine environment, however, is currently in a degraded state compared to historical conditions, which means it is also less resilient. Some human activities, such as bottom trawling, cause seafloor habitats to become homogenised, i.e. less diverse¹⁹. Allowing habitats and species to recover inside

Assessment (Article 8), Determination of Good Environmental Status (Article 9) and Environmental Targets (Article 10)

¹² https://iwdg.ie/winter-peak-in-common-dolphin-strandings-the-highest-yet-recorded-by-the-iwdg/

¹³ Clarke, M., Farrell, E.D., Roche, W., Murray, T.E., Foster, S. and Marnell, F. (2016) Ireland Red List No. 11: Cartilaginous fish [sharks, skates, rays and chimaeras]. National Parks and Wildlife Service, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs. Dublin, Ireland.

¹⁴ Shephard, S., Wögerbauer, C., Green, P., Ellis, J. and Roche, W., 2019. Angling records track the near extirpation of angel shark *Squatina squatina* from two Irish hotspots. Endangered Species Research, 38, pp.153-158.

¹⁵ https://www.npws.ie/news/red-list-no11-cartilaginous-fish-sharks-skates-rays-and-chimaeras-published

¹⁶ Government of Ireland, Marine Strategy Framework Directive 2008/56/EC Article 17 update to Ireland's Marine Strategy Part 1:

 $http://www.housing.old.gov.ie/sites/default/files/publications/files/2020_june_article_17_update_to_irelands_marine_strategy_part_1_articles_8_9_10_final.pdf$

¹⁷ https://www.nature.com/scitable/knowledge/library/biodiversity-and-ecosystem-stability-17059965/

¹⁸ Jennifer K. O'Leary, Fiorenza Micheli, Laura Airoldi, Charles Boch, Giulio De Leo, Robin Elahi, Francesco Ferretti, Nicholas A. J. Graham, Steven Y. Litvin, Natalie H. Low, Sarah Lummis, Kerry J. Nickols, Joanne Wong, The Resilience of Marine Ecosystems to Climatic Disturbances, BioScience, Volume 67, Issue 3, March 2017, Pages 208–220, https://doi.org/10.1093/biosci/biw161

¹⁹ Antonio Pusceddu, Silvia Bianchelli, Jacobo Martín, Pere Puig, Albert Palanques, Pere Masqué, Roberto Danovaro Proceedings of the National Academy of Sciences of the United States of America vol. 111 issue 24(2014) pp: 8861-6 Published by National Academy of Sciences



marine protected areas by banning such activities will give them a better chance to withstand the combined effects of rising temperatures, reduced oxygen and ocean acidification.

Besides rebuilding marine habitats and species for their own intrinsic values, marine ecosystems also offer many services to humankind. In the context of climate change, it is important to note that marine sediments and some coastal and near-shore habitats are extremely important carbon stores. Crucially, some marine ecosystems can store carbon up to millennial time scales, while the carbon stored by terrestrial systems is usually only sequestered up to decades²⁰.

Important species or habitats for climate mitigation and adaptation Recommendation 3: We recommend the following species / habitats be afforded the

highest possible protection under new MPA legislation to ensure conservation and restoration of these keystone habitats for maximum climate and biodiversity benefits. Many of these species have undergone large declines in the last century, as detailed in the previous section, which warrants urgent action. The restriction of bottom trawling and dredging from these areas is the first urgent step that needs to be taken.

Oysters (and other bivalve reefs): The native oyster *Ostrea edulis* can form dense beds, or reefs, on seabed sediments. They are ecosystem engineers, because dense aggregations of oysters transform species-poor sedimentary environments into three-dimensional habitats which many other species find shelter in. This three-dimensionality also means that oysters can reduce storm surge and thereby protect the coast from erosion²¹.



Figure 2: Visualisation of the ecosystem services delivered by epibenthic bivalve reefs such as oysters or mussels. Image taken from Ysebaert et. al (2019)²¹.

Many other inshore species also provide shoreline protection and should be prioritised for protection and/or restoration for climate adaptation and biodiversity protection. Examples

²⁰ Röhr, M. E., Holmer, M., Baum, J. K., Björk, M., Boyer, K., Chin, D., et al. (2018). Blue carbon storage capacity of temperate eelgrass (Zostera marina) meadows. Global Biogeochemical Cycles, 32, 1457–1475. https://doi.org/10.1029/2018GB005941

²¹ Ysebaert T., Walles B., Haner J., Hancock B. (2019) Habitat Modification and Coastal Protection by Ecosystem-Engineering Reef-Building Bivalves. In: Smaal A., Ferreira J., Grant J., Petersen J., Strand Ø. (eds) Goods and Services of Marine Bivalves. Springer, Cham. https://doi.org/10.1007/978-3-319-96776-9_13



are kelp forests, mussel beds, sponge and coral reefs, and saltmarsh. The best way to restore these ecosystems is by restricting bottom trawling and dredging, improving water quality and allowing our bays and estuaries to rewild, however direct restoration of bivalve reefs (oysters and mussels) is also needed. Some recent studies have also shown that restoration of one habitat facilitates restoration of another. For example, by introducing oysters or mussels to an area, the subsequent improved water quality and shelter allows seagrass to return to nearby sediments while reduced wave action reduces erosion on saltmarsh, thereby allowing it to expand (see

https://www.youtube.com/watch?v=ApfY0dWTL6E). Similarly, shading provided by kelp forest canopies reduces algal growth, thereby facilitating larval settlement of oysters underneath the kelp²².

Eelgrass: Although seagrasses account for less than 0.2% of the world's oceans, they sequester approximately 10% of the organic carbon buried in ocean sediment annually (27.4Tg of carbon per year)²³. Although there are large regional variations, studies have shown that one square meter of *Zostera marina* (one of the Irish resident eelgrass species) can sequester up to 39 g of organic carbon per year which is subsequently stored in the seabed sediment.²⁴ In the Eastern Atlantic region, one hectare of *Z. marina* (along with the top 100 cm of sediment) was projected to contain approximately 55 tonnes of carbon²⁵. There are approximately 62 km² of seagrass meadows around the coast of Ireland, which are estimated to store 0.6 Mt of carbon²⁶.

Protecting the remaining seagrass beds should be the top priority from a carbon, biodiversity and fisheries point of view. In the UK, seagrass has declined by over 90%, but projects such as Project Seagrass are already underway with the aim to restore large areas of seagrass and capture an estimated 400kg of CO₂ per hectare per year²⁷. We will need similar efforts in Ireland asap. We recommend all known seagrass beds should become no-take zones with strict enforcement in order to be proactive in avoiding any further damage. We will also need to increase survey efforts in order to map as yet unknown seagrass beds.

maërl: maërl beds are very fragile yet biodiversity rich habitats, which is recognised by their special status under the Habitats Directive. The carbon captured by maërl beds in Ireland is estimated to be around 1,143,120 t carbon. Along with seagrasses, maërl beds are generally considered more fragile than other benthic habitats and are given special consideration when assessing impact of bottom trawling, dredging or aquaculture inside SACs. Unfortunately, accidental damage or insufficient buffers between maërl beds and damaging activities has resulted in damage in the past, even inside SACs. In Blacksod Bay SAC, maërl beds were damaged by scallop dredging along with the total destruction of a *Serpula vermicularis* reef. In Roaringwater Bay SAC, mussel longlines have been positioned directly

²⁶ Cott, G. M., Beca-Carretero, P. and Stengel, D. (2021). Blue Carbon and Marine Carbon Sequestration

in Irish Waters and Coastal Habitats. Marine Institute, Ireland.

²⁷ https://www.projectseagrass.org/

 ²² Shelamoff, V., Layton, C., Tatsumi, M., Cameron, M. J., Wright, J. T., & Johnson, C. R. (2019). Ecosystem engineering by a canopy-forming kelp facilitates the recruitment of native oysters. Restoration Ecology, 27(6), 1442–1451. https://doi.org/10.1111/rec.13019
 ²³ Fourqurean JW, Duarte CM, Kennedy H, Marbà N, Holmer M, Mateo MA, et al. Seagrass ecosystems

as a globally significant carbon stock. Nat Geosci. 2012; 5:505±509.

²⁴ Postlethwaite VR, McGowan AE, Kohfeld KE, Robinson CLK, Pellatt MG (2018) Low blue carbon storage in eelgrass (Zostera marina) meadows on the Pacific Coast of Canada. PLoS ONE 13(6): e0198348. https://doi.org/10.1371/journal.pone.0198348

²⁵ Röhr, M. E., Holmer, M., Baum, J. K., Björk, M., Boyer, K., Chin, D., et al. (2018). Blue carbon storage capacity of temperate eelgrass (Zostera marina) meadows. Global Biogeochemical Cycles, 32, 1457–1475. https://doi.org/10.1029/2018GB005941



above maërl beds, causing smothering.²⁸ Reportedly, a buffer of 30m between the maërl and the mussel longlines has now been introduced. This kind of reactive management is not desirable, however. maërl are long-lived and slow-growing species (growth rate of less than 1mm per year, with individuals surviving for several hundreds of years). Any damage to these habitats is unacceptable and habitats will take hundreds of years to recover. We recommend all known maërl beds should become no-take zones with strict enforcement in order to be proactive in avoiding any such damage in the future.

Kelp (and other macroalgae): There are significant data gaps in the occurrence and carbon sequestration potential of macroalgae.²⁶ While they are thought to sequester large amounts of carbon, there are currently no estimates for the potential amount. There is no doubt, however, about the importance of macroalgae, especially dense kelp forests, for climate change adaptation through the buffer they provide from the surge effects of waves. Macroalgae, and kelp forests in particular, are also important nurseries for commercially important fish and shellfish species and offer habitat to countless other organisms.²⁹

Saltmarsh: Ireland's saltmarshes are thought to be extremely efficient carbon sinks. Globally, more than half of the historical range of saltmarsh has been lost. In Ireland, saltmarsh habitat covers approximately 100 km². Cott et. al (2021) state that the carbon density values of North Bull Island saltmarsh are comparable to carbon densities of low-lying blanket bogs, with a total carbon stock of 106,574 ± 729 Mg C. They estimate the total carbon stored in Irish saltmarshes to be 8.8Mt of carbon.²⁶

Cold-water coral reefs: There are extensive coral reefs in Ireland's offshore waters that are not yet protected. They are thought to be significant carbon stores²⁶. While the deep-sea trawling ban (no trawling below 800 metres, and no trawling below 400 m if vulnerable ecosystems are present) offers some protection from direct impacts, fishing with bottom trawls near coral reefs can still impact the reef through creation of sediment plumes. This is the case on the continental shelf, where trawling may impact reefs along the continental slope, as found in the Whittard Canyon³⁰. It is important to allow appropriate buffers around these vulnerable areas to ensure these long-lived habitats are not damaged.

https://www.npws.ie/sites/default/files/publications/pdf/IWM17.pdf

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 ²⁸ Scally, L., Pfeiffer, N. and Hewitt, E. (2020) The monitoring and assessment of six EU Habitats Directive Annex I Marine Habitats. Irish Wildlife Manuals, No. 118. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.
 ²⁹ Kelly, E. (ed.) (2005) The role of kelp in the marine environment. Irish Wildlife Manuals, No. 17. National Parks and Wildlife Service, Department of Environment, Heritage and Local Government, Dublin, Ireland

³⁰ Wilson, A. M., Kiriakoulakis, K., Raine, R., Gerritsen, H. D., Blackbird, S., Allcock, A. L., & White, M. (2015). Anthropogenic influence on sediment transport in the Whittard Canyon, NE Atlantic. Marine Pollution Bulletin, 101(1), 320–329. https://doi.org/10.1016/j.marpolbul.2015.10.067

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Table 1: Estimates of extent, carbon stocks, carbon sequestration rates and avoided emissions in Ireland's blue carbon ecosystems (BCEs); saltmarsh and seagrasses and potential blue carbon (pBCES). Data for seagrasses are conservative estimates. Estimates for maërl and phytoplankton have a high degree of uncertainty. Table taken from Cott et. al (2021)²⁶.

	Habitat	Extent	Carbon Standing Stock	Carbon sequestration rates	Avoided Emissions if Conserved
		km²	Mt C	Mt C year-1	Mt CO ₂
BCE	Saltmarsh	100*	8.8ª	0.02 ^d	32.3
BCE	Seagrass	>62+	0.6 ^b	0.01 ^e	2.2
BCE	Coastal reed swamp	-	-	-	-
pBCE	Macroalgae	NA	NA	-	-
pBCE	Maërl	57‡	1.1°	-	4
pBCE	Cold-water corals	-	-	-	-
pBCE	Phytoplankton	880,000	-	7.1 ^f	-
pBCE	Bivalve Reefs	-	-	-	-

Ocean sediments: Much of the seafloor in the Irish marine territory consists of sandy or muddy sediment. According to a recent study, surface sediments of the UK Exclusive Economic Zone (EEZ) were found to contain around 530 Mt of organic carbon and 2,500 Mt of inorganic carbon³¹. Interestingly, fjords were found to hold the most amount of organic carbon within their sediment – around 1.84–2.03 kg per m². There are three fjords in the Republic of Ireland, namely Lough Swilly, Killary Harbour and Carlingford Lough. Carlingford Lough was part of the UK study and it is estimated to hold 2,185 \pm 292 tonnes Organic Carbon per km² – significantly higher than other inshore sediments (total OC stored in Carlingford Lough is 1.6 Mt). The study authors conclude that well-defined OC accumulation hotspots (e.g. fjords, estuaries and coastal muds) should be managed and protected from disturbance. Unfortunately, Killary Harbour is not a protected area despite being home to a *Serpula vermicularis* reef (a highly fragile reef-forming worm). Other inshore areas are also not afforded proper protections despite a protected area status. In Ireland, bottom trawling and dredging is only banned in 3 of our 90 Special Areas of Conservation with marine components (Hook Head and Saltee Islands SACs, Lough Hyne SAC).

While the devastating effects of bottom contact gear on seabed biodiversity have been known for some time, recent research has found that bottom trawling emits as much carbon as the entire aviation industry by churning up seabed sediments that would otherwise lie undisturbed for millennia³².

Fish and other sea life: According to one study in 2020, industrial fishing has resulted in a massive extraction of 'blue carbon' by removing organisms from the ocean. The study suggests that historical catches and fuel consumption have resulted in a minimum of 0.73 billion metric tons of CO₂ (GtCO₂) being released to the atmosphere since 1950³³. Half of

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³¹ Smeaton C, Hunt CA, Turrell WR and Austin WEN (2021) Marine Sedimentary Carbon Stocks of the United Kingdom's Exclusive Economic Zone. Front. Earth Sci. 9:593324. doi: 10.3389/feart.2021.593324

³² Sala, E., Mayorga, J., Bradley, D. et al. Protecting the global ocean for biodiversity, food and climate. Nature 592, 397–402 (2021). https://doi.org/10.1038/s41586-021-03371-z

³³ Mariani et al. Let more big fish sink: Fisheries prevent blue carbon sequestration—half in unprofitable areas. Science Advances 28 Oct 2020: Vol. 6, no. 44, eabb4848 DOI: 10.1126/sciadv.abb4848



the fisheries examined were found to be unprofitable and the study concluded that "limiting blue carbon extraction by fisheries, particularly on unprofitable areas, would reduce CO_2 emissions by burning less fuel and reactivating a natural carbon pump through the rebuilding of fish stocks and the increase of carcasses deadfall."





A 2010 study found that humans had reduced the abundance of large vertebrates in the ocean. It found that rebuilding whale populations to historic levels would store 8.7×106 tons Carbon, "equivalent to 110,000 hectares of forest or an area the size of the Rocky Mountain National Park"³⁴. Whales and other marine organisms do not just store carbon, they are essential links in biogeochemical cycles, transferring nutrients from the seafloor to the surface when feeding and excreting, and back to the seafloor when they die and sink.

Important species / habitats to rebuild ocean life

The report gives a thorough overview of some of the gaps in the Natura 2000 network, including the habitats and species currently not afforded legal protections under the Habitats and Birds Directives. We fully support the recommendation that we need to designate marine protected areas that actually protect the wide variety of life in our seas and must go beyond the Annexes of the Habitats and Birds Directives to do so.

Recommendation 4: We recommend that all OSPAR habitats and species be afforded legal protections in Ireland. We recommend that a large proportion of each habitat type is afforded protection, but propose the protection of 100% of some vulnerable habitats or species in a network of no-take zones (e.g. seagrass and maërl beds).

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³⁴ Pershing et al.. The Impact of Whaling on the Ocean Carbon Cycle: Why Bigger Was Better. 2010. PLOS ONE https://doi.org/10.1371/journal.pone.0012444



A non-exhaustive list of habitats and species we would like to see protected Threatened elasmobranchs, eels, salmon, our two species of seahorse, native oysters, coral gardens and seagrass beds, maërl beds, muddy sediments with seapens or other epifauna, kelp and other habitat-forming macroalgae, saltmarsh, all cetaceans, forage fish species (sandeels, herring, sprat), seabirds not yet listed in the Birds Directive along with their foraging habitats. A list of 48 threatened species which the Irish Wildlife Trust has been proposing for legal protection for some time can be found <u>here</u>.

Recommendation 5: A full list of priority marine features, along with maps of their distribution, should be created asap and afforded interim protections under the National Marine Planning Framework (NMPF). We support recommendation 3.15 that sensitivity mapping should be conducted.

To facilitate local authorities with licencing decisions, an interactive mapping tool should be made available that shows locations of vulnerable marine features. In <u>Scotland</u>, eleven priority marine features³⁵ (PMFs) were identified and mapped along with their main pressures (bottom trawling and dredging). A similar map is needed for Ireland to inform the NMPF and general MPA and fisheries management at a much greater level of detail than the Marine Atlas currently provides.³⁶ It would also be useful to include all designated sites on admiralty charts.

Current issues with regards to management of SACs and SPAs In order to fully understand the level of governance transformation needed to make marine protected areas work in Ireland, it is helpful to first take a closer look at the way SACs and SPAs are currently (mis)managed.

Too many cooks

It is currently up to each department separately to ensure marine biodiversity is not harmed by the activities they licence. It is uncertain who is in charge of bringing habitats to a Favourable Conservation Status and introducing and enforcing conservation measures. A clear hierarchy is needed, with one department or agency responsible. While this agency should ideally be the National Parks and Wildlife Service (NPWS), the agency lacks the resources and enforcement powers needed for these tasks.

Recommendation 6: We fully support the report's recommendation that an MPA Coordinating Body should be established and urge the government to implement this asap. The coordinating body will need to have oversight of all marine activities taking place inside SACs/SPAs and new MPAs and employ specialists capable of judging whether certain activities are compatible with conservation objectives of a site. The coordinating body should be able to make objective recommendations as to whether or not an activity may be licenced inside or near a MPA and have enforcement powers.

Shrugging off the impacts of fisheries and aquaculture activities

A common theme in the Appropriate Assessments and risk assessments for fisheries and aquaculture in SACs and SPAs is lacunae and the reaching of conclusions without proper

³⁵ Blue mussel beds, Cold water coral reefs, Fan mussel aggregations, Flame shell beds, Horse mussel beds, maërl beds, maërl or coarse shell gravel with burrowing sea cucumbers, Native oysters, Northern sea fan and sponge communities, Seagrass beds, and Serpulid aggregations.
³⁶ Scotland's interactive map can be viewed <u>here</u>. By choosing the layer 'Healthy and Biologically Diverse' > 'PMF Consultation July 2018' > 'PMF Consultation - Reviewed Priority Marine Features and management status' one can see priority marine features under management vs. those at risk from fishing.



scientific evidence. Sometimes, even with plenty of evidence of impacts, the activity in question is allowed to continue because the impact is not thought to be significant enough. This points to some serious misinterpretation of the Habitats Directive requirements by the Irish authorities, as previous decisions that were made based on the recommendations given in appropriate assessments have resulted in the deterioration of SAC status.

Recommendation 7: Hire an experienced environmental lawyer to tour the country and hold workshops explaining the requirements of the Habitats Directive to stakeholders and decision-makers at county council and national level.

There is also a dire need for a greater number of experienced marine ecologists in the Department of Agriculture, Food and the Marine and the Department of Housing, Local Government and Heritage.

15% Disturbance Threshold

All Appropriate Assessments and risk assessments are based on a 15% disturbance threshold policy which is derived from conservation objective guidance documents drawn up by the NPWS. The policy from the NPWS was loosely based on an EU guidelines document (which is not legally binding) on applying thresholds to describe the conservation status of habitats. It is our view that the Irish authorities have misinterpreted this guidance to permit activities in SACs in breach of their legal obligations under the Habitats Directive. This 15% threshold is often used to justify the continuance of a damaging activity, if said activity overlaps with less than 15% of the habitat. This has directly led to the deterioration of some habitats within SACs (e.g. Roaringwater Bay³⁷).

Recommendation 8: Remove the 15% disturbance threshold immediately and avoid using any blanket threshold values in the future. Risk must be assessed on a site-by-site basis and the significance of an impact cannot be judged based on a blanket value. Local parameters differ and therefore site surveys are necessary to judge whether conservation objectives will be compromised by an activity.

Examples given in the report as "good examples" to show fisheries and conservation already successfully co-exist in Ireland

Recommendation 9: The report makes reference to some case-studies of SACs in Ireland where conservation goals allegedly co-exist with fisheries or aquaculture activities. We disagree with the notion that these case studies are good examples of co-existence and recommend not using these as references in the future.

Dundalk Bay: The Fisheries Natura Plan for cockle dredging does not take into account the inadequate status of the SAC. The estuary did not reach Favourable Conservation Status in the 2019 Article 17 assessment because of changes in the sediment grain size classes³⁸. The exact cause of this change is unknown, but dredge fishing has been linked to changes in sediment composition in the past. The report states that "the fishery has been productive and the site is not impacted". It is, in our view, unfitting to assume the dredge fishery has no impact on the SAC when the reason for the site's deterioration is unknown.

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³⁷ Classen, R (2020). Marine Protected Areas – Restoring Ireland's Ocean Wildlife II. Report on Ireland's Failure to Protect Marine Natura 2000 Sites. Irish Wildlife Trust

³⁸ Scally, L., Pfeiffer, N. and Hewitt, E. (2020) The monitoring and assessment of six EU Habitats Directive Annex I Marine Habitats. Irish Wildlife Manuals, No. 118. National Parks and Wildlife Service, Department of Culture, Heritage and the Gaeltacht, Ireland.



Blacksod Bay: A fishery mitigation plan was drawn up for the SAC to exclude scallop fishing from a vulnerable *Serpula vermicularis* reef. Subsequent surveys showed that the reef has been completely destroyed by benthic dredgers²⁴. While we do not know when the reef was destroyed and why this was possible in spite of the mitigation plan, this is undoubtedly one of the worst examples the report authors could have chosen to represent good co-existence. The site represents a complete failure of the Irish authorities to protect this SAC and should not be celebrated as a good example.

Roaringwater Bay: A Fishery Natura Plan was drawn up to exclude scallop dredging from maërl and seagrass beds within Roaringwater Bay SAC. While the plan and the Appropriate Assessment detail the possible impacts of scallop dredging and bottom trawling on reef and sedimentary habitats, the Plan does not propose these fisheries to be excluded from these areas. The Appropriate Assessment states "the scallop fishery overlaps with 15% of the Laminaria reef. All of this 15% is expected to come in contact with scallop gear each year. The frequency of fishing events is beyond the capacity of the reef to recover and the reef is, therefore, expected to exist in a modified state."³⁹ The mitigation plan also lists impact of gill netting to grey seal and impact of trammel netting to otter as "likelihood of population depletion possible", yet provides no mitigation options for this impact. Furthermore, mussel aquaculture was found to cause fouling on maërl beds within Roaringwater Bay. These facts do not signify good levels of co-existence in our opinion.

The first measure by which we should test the success of a marine protected area is by the health of the environment within it. Most of the co-existence examples listed in the report fail this test, evidenced by the failure of the sites to reach Favourable Conservation Status. The impacts of harmful fishery and aquaculture activities continue to be downplayed and obvious deterioration of a site is often ignored by the Department of Agriculture, Food and the Marine.

While co-existence is undoubtedly possible between low-impact, well-managed fisheries and MPAs, the Department of Agriculture, Food and the Marine has thus far not been able to produce any such examples in Ireland. Listing these case-studies implies that this is the standard of MPA that Ireland should be aiming for, when in fact these sites have done nothing for our inshore marine ecosystems. Examples of where co-existence is possible can be drawn from other countries, e.g. Lyme Bay in the UK. This example and the available video on YouTube has been received very well by some Irish inshore fishermen who are eager to learn more.

On a separate note, the key to co-management is the mixture of stakeholders involved. In all the Irish examples, the Marine Institute, BIM, SFPA and fishermen / aquaculture representatives have been involved in the drafting of management plans, but not NGOs. The result has been the deterioration of marine life. In Lyme Bay, the Blue Marine Foundation, an environmental NGO, was a key player in managing the bay - and with great success. Environmental representatives deserve a seat at the table just as much as fishermen and other stakeholders do to ensure MPA success for biodiversity and people alike. We therefore feel that the case studies chosen in the report represent a failure on all levels of Irish authorities to protect our precious marine habitats and should not be presented otherwise.

³⁹ Article 6 Assessment of Aquaculture and Fisheries in Roaringwater Bay, Marine Institute, 2013

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Other considerations

When can a site be included in the MPA network

Recommendation 10: An SAC, SPA, or new marine protected area should only be considered as part of the MPA network (and therefore be counted towards spatial targets) if specific criteria are followed. Any site to be considered part of the network should

- Follow the Systematic Conservation Planning Approach,
- have high stakeholder involvement,
- be fully implemented with active management and ambitious conservation and restoration measures in place,
- require full vessel tracking of all vessels active in the site, regardless of size,
- prohibit all industrial fishing as per IUCN definition⁴⁰ and harmful infrastructure,
- have a clear and fairly applied enforcement system,
- follow the precautionary approach.

Even if these criteria are fulfilled, some SACs and SPAs may be suitable for re-designation under new MPA legislation in order to legally protect certain habitats and species, such as elasmobranchs, which are currently not protected under existing legislation. Tralee bay would be one such example that would benefit from legal protections for sharks, rays and skates.

Feature-based protection

In the past, protecting only certain features within an MPA has failed to bring about comprehensive management of the whole area and has led to deterioration of Ireland's marine environment. Yet, the report fails to make a recommendation for a so-called 'whole-site approach' to marine conservation. Marine protected areas may be initially chosen based on the presence of certain features, but the objectives of the site must go beyond the protection and recovery of the listed features and instead provide conservation objectives for the whole ecosystem, with management implications inside and outside of the MPA. This way, we can protect whole structures and functions of marine ecosystems, including those that we may not yet fully understand or ones that we do not yet know exist. The feature-based approach has been used in the EU for many years, with limited success. Ireland now has the chance to learn from the mistakes of others (as well as our own failures in bringing SACs to a favourable conservation status) and use a different approach. Solandt et. al argue that the whole-site approach should be applied in UK MPAs to allow the recovery of whole suites of adjacent habitats rather than management being wedded to individual features alone⁴¹.

Recommendation 11: MPA management should follow the 'whole-site approach' for more ambitious management that allows for ocean recovery.

Timeline of action needed

The report does not provide a timeline with respect to its recommendations and therefore the crucial question of 'when' remains unanswered. If the government is to scale up ocean protection to at least 30% by 2030 in line with the EU Biodiversity Strategy, new legislation

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⁴⁰ (>12 m long x 6 m wide) motorised vessels, with a capacity of >50 kg catch/voyage, requiring substantial sums for their construction, maintenance, and operation and mostly sold commercially, and that all fishing using trawling gears that are dragged or towed across the seafloor or through the water column, and fishing using purse seines and large longlines, is defined as industrial fishing ⁴¹ Solandt JL, Mullier T, Elliot S, Sheehan E (2019) Managing marine protected areas in Europe: moving from 'feature-based' to 'whole-site' management of sites. Marine Protected Areas – Science, Policy and Management, Chapter 9



is needed that lays out the processes involved. The report, however, does not convey the urgency with which the government must now act. Designating and, crucially, managing MPAs in areas beyond 12 nautical miles from the coast requires the state to negotiate fisheries access of EU vessels under the Common Fisheries Policy Article 11, a process which can take many years. In addition, stakeholder consultations surrounding MPA management are crucial for the success of any MPA network and may take some time. MPA legislation must therefore be prioritised by the government and signed off in the first half of 2022 at the latest, in order to still be able to achieve a network of MPAs that is coherent, representative, connected and resilient and covers at least 30% of Ireland's marine region by 2030.

No-take zones

Globally, 94% of all MPAs are multi-use sites that allow some level of extractive activity. The most benefits to sealife, however, can be observed in so-called no-take-zones or marine reserves which allow no extractive activities^{42,43}, because any form of biomass extraction through fishing can have an effect on ecosystem functioning. Fishing for the largest animal species available has resulted in changes of age structure, population size, abundance of predator and prey and ultimately in changes of whole food webs and ecosystems⁴⁴.

No-take protection leads to changes in population structure in ways that promote replenishment. As the animals within the reserve grow larger over time, they also produce more eggs, are more successful at reproduction and produce fitter young⁴⁵. Target species with low mobility such as scallops and lobsters profit substantially from no-take zones in the UK. Dive surveys done in Lamlash Bay, a community led marine reserve, showed significant increases in catch per unit effort (109%), weight per unit effort (189%) and carapace length (10-15 mm) of the European lobster *Hommarus gammarus*. Furthermore, catches of berried lobsters were twice as high within the reserve compared to outside with an increased mean potential reproductive output of 22%⁴⁶.

In a direct comparison of multi-use MPAs and no-take marine reserves, Lester and Halpern (2008)⁴⁷ found that no-take reserves had higher biomass, organism density, species richness and organism size in relation to partially protected areas. A meta-analysis of different studies found that the biomass of the whole fish assemblage is 343% greater within marine reserves compared to partially-protected MPAs⁴⁸. A different study investigated the recovery of cod in an MPA where only hook-and-line fishing was allowed. While the annual survival of the species increased after MPA designation, they estimate that a full closure of the fishery would further increase survival of smaller individuals by 100% and that of larger individuals by 44%.

Few studies have directly compared partially protected MPAs to no-take-zones and any such comparison is always difficult due to a lack of comparable 'before' data. The studies that

⁴⁸ Sala E & Giakoumi S (2017) No-take marine reserves are the most effective protected areas in the ocean. ICES J. Mar. Sci.: 1–3

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⁴² Lester SE & Halpern BS (2008) Biological responses in marine no-take reserves versus partially protected areas. Mar. Ecol. Prog. Ser. 367: 49–56

 ⁴³ Sala E & Giakoumi S (2017) No-take marine reserves are the most effective protected areas in the ocean. ICES J. Mar. Sci.: 1–3
 ⁴⁴ Costello MJ & Ballantine B (2015) Biodiversity conservation should focus on no-take Marine Reserves 94 % of Marine Protected Areas allow fishing. Trends Ecol. Evol. 30: 507–509

⁴⁵ Roberts C (2012) Marine Ecology : Reserves Do Have a Key Role in Fisheries. Curr. Biol. 22

⁴⁶ Howarth LM, Dubois P, Gratton P, Judge M, Christie B, Waggitt JJ, Hawkins JP, Roberts CM & Stewart BD (2016) Trade-offs in marine protection : multispecies interactions within a community-led temperate marine reserve

⁴⁷ Lester SE & Halpern BS (2008) Biological responses in marine no-take reserves versus partially protected areas. Mar. Ecol. Prog. Ser. 367: 49–56



have compared the two MPA models however all come to the same conclusion which suggests that no-take marine reserves really do provide the best means of protection for biodiversity and are hence a good tool to help achieve sustainable fisheries management as well as Good Environmental Status under the MSFD⁴⁹.

The authors of the report did not include a recommendation for a certain proportion of no-take zones. No-take zones offer higher protections to biodiversity compared to other types of MPAs. An appropriate mix of no-take zones and multi-use MPAs is essential in an MPA network to ensure the best possible outcome for both nature and people.

Recommendation 12: All MPAs located in the offshore regions should be no-take zones. We recommend well-placed no-take zones for the inshore, where they protect vulnerable habitats e.g. reefs, seagrass or maërl habitat. No-take zones in the inshore regions work best with community buy-in and could be coupled with restoration zones.

Restoration

We will likely see a legally binding restoration target in the EU in 2022. This ensures that Member States go beyond mere spatial protection and towards ensuring proper restoration and recovery of the natural world can take place. It is important that Ireland looks ahead and is prepared to include such targets in the MPA network design. It is also essential that we have no-take areas as reference sites where changes to biodiversity can be monitored.

Recommendation 13: Be proactive in including a target for restoration in the new MPA legislation. Seagrass beds and oyster reefs are two examples of habitat that need to be actively restored as soon as possible.

Proposed MPA definition

The report proposes a definition of a marine protected area that may be enshrined in Irish law for the first time.

The proposed definition is as follows:

"A geographically defined area of marine character or influence which is protected through legal means for the purpose of conservation and restoration of species, habitats or ecosystems along with their ecological processes, their associated ecosystem services and cultural values, and managed with the intention of achieving stated objectives over the long term."

This definition includes a small but significant caveat, namely the addition of "over the long term". There is no need to give any indication of time frames in the definition. The most widely used definition for an MPA, given by the IUCN, does not include a timeframe either. The definition given by them is "any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment". It is important that MPAs can deliver objectives also in the short and medium term.

Another interesting addition to the definition is the word "specified" in front of "species, habitats or ecosystems". The previous approach of conservation has gone down the route of feature protection, which means sites were designated for specific habitats or species. This

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⁴⁹ Fenberg P, Caselle J, Claudet J, Clemence M, Gaine s S, García-Charton J, Gonçalves E, Grorud-Colvert K, Guidetti P, Jenkins S, Jones PJ., Lester S, McAllen R, Moland E, Planes S & Sørensen T. (2012) The science of European marine reserves: status, efficacy and needs. Mar. Policy 36: 1012–1021



approach has been demonstrated to be inadequate, and instead whole sites along with all their ecosystem components should be protected for their various roles in the functioning of the ocean ecosystem, including functions that we might not yet be aware of. The MPA definition here does not allow the protection of the unknown, those species and habitats that are not yet mapped or even discovered.

It is now clear that a different approach from the feature-based approach is necessary to restore the marine environment – the so-called 'whole site approach'. While the MPA site may be selected based on the presence of certain priority features, it is important that the site is not managed for only those features in isolation. As an example, the Lower River Shannon SAC is designated for bottlenose dolphins. While the dolphins are undoubtedly well protected, the dolphin's food source, sprat, continues to be fished on an industrial scale within the SAC. Another example is the designation of sites for reef habitat. While fisheries risk assessments take into account the risk of structural damage to reef habitat from fishing gear, the removal of key ecosystem components, e.g. lobsters, continues unmanaged. In the future, the whole ecosystem should be managed in a holistic manner and this includes lobsters, crabs, the wide variety of reef fish, sharks and the many invertebrates and plant species that rely on a balanced ecosystem for survival.

Recommendation 14: Delete "over the long term"

Recommendation 15: While the word "specified" may remain in the definition, Irish MPA legislation should include the use of the whole-site approach for MPA management.

Thoughts on fishing effort displacement

The report makes a good argument in relation to fishing effort displacement. When we close off fishing grounds to protect biodiversity "without a concomitant reduction in total effort", fishing effort would simply move outside of protected areas, increasing pressures elsewhere.

There are several considerations to be made. MPAs are not a panacea that will solve all the environmental problems at sea on their own. We would argue that a reduction in total fishing effort is necessary and overdue to end overfishing and to remain within the environmental limits of our planet. Interestingly, recent advice from the International Council for the Exploration of the Sea (ICES) to the European Commission states that large areas of the sea could become trawl free at relatively low reductions in effort to the bottom trawling fleet.⁵⁰ This is due to such large areas of the seabed currently being targeted by bottom trawlers only occasionally, whereas some highly productive areas are targeted more heavily. The analysis focused on freeing up the maximum amount of seabed while keeping impact on value of landings at a minimum - in other words, the closure of the least trawled areas is recommended in order to keep core fishing grounds open. ICES analysis shows that when trawling effort is reduced by a mere 4%, a whopping 30% of lightly trawled seabed would become trawl free. If we were to reduce bottom trawling effort by 26%, 70% of lightly trawled seabed would become trawl free. However, when we consider the climate mitigation potential of protecting carbon-rich habitats in our seas we may find that core fishing grounds can overlap with carbon rich muds. This is the case especially for the nephrops fishery. In these cases we recommend the closure of the fishery regardless of the impact on landings. The potential for carbon sequestration and biodiversity restoration should take

⁵⁰ ICES (2021) EU request on how management scenarios to reduce mobile bottom fishing disturbance on seafloor habitats affect fisheries landing and value



precedence. Looking ahead we recommend that inefficient and destructive gear types such as bottom trawls should be phased out as a method of fishing altogether in order to allow natural carbon sinks and benthic biodiversity to recover.

Furthermore, we need to ensure the connectivity of the MPA network, which can only be achieved if species can move from one MPA to another without having to cover large distances of ecological wastelands. The proper management of 100% of our ocean area with fully documented fisheries, is therefore essential.

A recent report by the New Economics Foundation showed that the benefits of banning bottom trawling from Europe's marine protected areas would outweigh the costs within four years⁵¹. We will need more analyses of socio-economic, carbon and biodiversity impacts of a bottom trawling ban to truly appreciate the impact on communities, our seas and the global climate.

Recommendation 16: MPAs must be carefully selected based on scientific reasoning, such as presence of vulnerable ecosystems or carbon rich sediments. There will likely be MPA candidates for both highly trawled and least trawled areas. To counteract fishing pressure shifting to other areas, the level of fishing pressure must be reduced overall. This is particularly relevant to offshore areas where large trawlers operate and where the closure of fishing grounds would have less impact on fisherpeople compared to inshore areas.

Recommendation 17: A cross-departmental effort must be made to end overfishing as soon as possible, for climate and biodiversity benefits as well as future food security. In addition, destructive fishing gear such as bottom trawls and dredges should be phased out by 2030 and be replaced by less impactful gear types as outlined in the Blue Manifesto.⁵²

Funding

The European Maritime and Fisheries Fund has in our opinion not been used to its fullest potential to date. Projects under the new round of funding should be used to set up pilot projects where fishermen are compensated for lost fishing grounds and research is undertaken to identify pressures and management solutions on a bay-by-bay basis. The EU LIFE grants have also been underutilised in Ireland, and especially for marine projects. A thorough investigation into the causes of seagrass decline and swift action is needed to stop any further degradation.

Bottom-up approaches to management

We support the recommendation in the report that legislation should allow for bottom-up designation and management of marine protected areas. While top-down support is necessary to ensure proper enforcement and funding streams, a certain degree of local autonomy is important to foster a sense of ownership and responsibility to protect and restore their marine space. Two examples of bottom-up efforts to manage the local inshore area already exist in Ireland, which we fully support.

1. Waterford Estuary

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⁵¹ New Economics Foundation (2021) Valuing the impact of a potential ban on bottom-contact fishing in EU marine protected areas

⁵² The Irish Wildlife Trust fully supports the Blue Manifesto - The Roadmap to a Healthy Ocean in 2030 developed by Seas At Risk. For more information see https://seas-at-risk.org/blue-manifesto/



Environmental NGO Coastwatch have produced a draft best practice management plan for coastal MPAs designed to reduce fishing and other pressures and allow for restoration of coastal MPA ecosystems. They carried out extensive stakeholder engagement and have received support for the plan from low-impact fishermen. The plan's template could be used to improve the management of MPAs around Ireland's coast.

2. Ballyness Bay

The Cloughaneely Angling Association (CAA) has been involved in the management of their local rivers for a long time. CAA would like to propose a similar management structure with a management plan extending into Ballyness Bay. The group have kindly provided the details of the catchment management as follows:

"In 2018, the Cloughaneely Angling Association produced a Catchment Management Plan as a care plan for the environment in the catchment area. This plan provided a detailed scientific analysis of the status of the catchment, highlighted key issues, and set out proposals on how best to address these. In order to oversee the implementation of the plan, CAA established a Catchment Management Plan Working Group with representatives from Udaras, IFI, NPWS, Donegal County Council, LAWPRO, the Irish Hill Farmers Association, MOWI and the local tidy towns association. On foot of the Management Plan, a Strategic Plan was drawn up and associated Operational Plans prepared. Projects were designed and implemented to provide real time quality data as a basis for decision making. These included a study of the hill loughs in the catchment and a water quality analysis project currently ongoing. Members of the CMP Working Group participate, in accordance with their remit, in delivering these projects. The various plans referred to, and project reports, may be read on CAA's website: www.cloughaneelyanglingassociation.com



Annex 1: Notes from the Irish Wildlife Trust's townhall meetings on the MPA report

The IWT held a series of townhall meetings to bring the MPA report to the attention of the public. A few of the main themes are laid out below.

Need for more government engagement and better communication

Many of the participants commented that the MPA report was simply too long and the information overwhelming. It was generally agreed that there is a need for a short and digestible summary and infographics along with more general engagement from the government in the form of meetings or explainer videos.

Concerns over expanding industries

Participants in both Kerry and Donegal voiced concerns over losing their local area to industry, feeling "bullied" and as though their area is being "redlined" for industrial development, especially wind and aquaculture expansion. People fear that their local beauty spots, or "family jewels" may become mangled with Pacific oyster trestles and windfarms, even inside existing Special Areas of Conservation. They fear a reduction in tourism in their local area as a result.

"The risk is that the Dept of the Marine "grandfathers" all existing locations which are earmarked for aquaculture development, evading a genuine consultation process. The fact that fisheries and aquaculture were not included in the NMPF Bill is indicative of the intention."

"Rural communities cannot afford to fight multinationals through the courts to protect their community and way of life."

Deterioration of marine life

In Galway, we heard about the deterioration that has taken place in Galway Bay and other locations along the Galway coast. One source of concern was an increase in freshwater inflow from land-based agricultural drainage into Galway Bay which may threaten the native oyster reef. One participant called for a 'one-stop shop' to protect the area as the current system allowed for too much evasion of responsibilities.

In Kerry, concern was raised regarding the state of sharks. One participant called the Tralee and Brandon bays the "Serengeti of sharks and rays" which depend on a local spider crab moulting site for food.

"We're on the last legs with these species [sharks and rays] and they're within our 12 nautical miles"... we "must hurry up" with MPA designations if they're to stand a chance.

Data gaps - an obstacle to designation?

While many participants agreed that there is a lack of data, it was also pointed out that enough data exists to make a solid start on MPA designations. Certainly a lack of data is not a reason for delay while deterioration of vulnerable ecosystems continues. Another participant pointed out that lots of data has been collected by private industry, which isn't accessible to the public.



"It doesn't pay to get over focused on data, we have sufficient data to make a solid start on designating MPA's and additional areas. The data are spread among a number of organisations but substantial data collection has been undertaken in recent years since BioMar, more would be welcome but we have sufficient to make a solid start."

Biocultural diversity

In Donegal and Kerry, we heard from several inspirational speakers about the importance of biocultural diversity and the need to integrate local heritage into MPA design. We heard about the importance of co-management and how protected areas could become a "classroom for the nation" where schools can visit and learn about marine biodiversity.

Is Dublin Biosphere a good example for an MPA?

The Dublin Bay Biosphere is a good example for an MPA in terms of public engagement, resources and a conservation strategy, but some parts of the Biosphere lack legal protection and there are no clear lines of responsibility. Some parts of the Biosphere have multiple layers of designation, but even in those parts unregulated shellfish exploitation continues.

Conclusion of townhalls

The townhalls have been very focused on inshore waters, because that's where most stakeholders operate. While most new MPAs will likely be larger offshore sites (which are needed to bring the total MPA coverage up to 30%) these meetings have shown how much work is ahead of the government to make even existing inshore MPAs (SACs and SPAs) work. The townhalls showed us many of the known difficulties also highlighted in the MPA report: that marine protected area designations are an emotional process and people want to voice their concerns and want to be a part of the process.



Figure 4: Word cloud showing townhall participant's response to the question "What is your interest in MPAs?"

Annex 2: Non-exhaustive list of potential MPAs, either new sites or expansions to existing SACs

- 1. Tralee Bay for sharks
- 2. Ballyness Bay, community-led MPA
- 3. Raven's point, Co. Wexford for seals
- 4. Roaringwater Bay expansion for cetaceans
- 5. Bantry Bay, seagrasses and kelp forests, highly productive bay
- 6. Galway Bay expansion
- 7. Dublin Bay expansion and good candidate for a research and restoration MPA, especially for the native oyster
- 8. Generally expand the SAC boundaries of some bays, estuaries and fjords. These highly diverse and carbon rich areas deserve much higher protections from industrial fishing and aquaculture.



Annex 3: Our responses to the remaining survey questions (i.e. any outstanding points that haven't been answered above)

What would a good and effective MPA look like?

An effective network of MPAs consists of sites that are well positioned, representative, connected, monitored, enforced and well researched with measurable benefits for biodiversity.

MPAs require robust legislation, properly resourced and empowered local stakeholder groups with balanced representation, and strong governance structures from national to regional level that are accountable to the law.

Every site should have a management plan with ambitious conservation objectives that are underpinned by local laws and monitored by local stakeholder groups in conjunction with the responsible conservation agency (currently NPWS). The management should follow the whole-site approach rather than individual features in order to allow wide-scale recovery.

The process of designation and management should be transparent and in line with requirements under the Aarhus Convention.

Based on this information and further details presented in the report, do you agree or disagree with the inclusion of OECMs as a potential part of Ireland's MPA network?

The International Union for the Conservation of Nature (IUCN) defines "other area based conservation measures" (OECMs) as "a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values."

The IUCN guidelines for what areas constitute OECMs are very strict⁵³. For example, an OECM must demonstrably deliver effective nature conservation and have management in place that achieves positive and sustained long-term biodiversity conservation outcomes, and relevant authorities and stakeholders should be identified and involved in management. Furthermore, environmentally-damaging industrial activities and infrastructure developments should not occur in OECMs⁵³. This includes industrial fishing, oil and gas extraction and environmentally-damaging infrastructure, such as pipelines. These activities should also not occur outside of OECMs where they might impact on an OECM.

The idea of an OECM under these guidelines sounds very appealing (and protections within an OECM would be higher than they currently are within our SACs). However, Ireland has not been following IUCN protected area guidelines for SACs or SPAs, which means we have no reason to believe that IUCN guidelines will be followed for OECMs. Under these circumstances, we do not believe that OECMs should form part of the future MPA network as it would allow the Irish state too much liberty in designating sites that have little to no biodiversity benefits and counting these towards our spatial MPA targets.

⁵³ https://portals.iucn.org/library/sites/library/files/documents/PATRS-003-En.pdf

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The MPA network should be reserved for such sites that have biodiversity conservation as their primary objective and that deliver the desirable outcomes. We will, however, welcome any future OECMs that may contribute to biodiversity conservation outside of the MPA network.

Do you agree or disagree with the recommended principles?

We fully agree

Informed by the expert group report, what do you think are the most significant challenges to implementation of an expanded MPA network in Ireland?

- Lack of political will. The expansion of the MPA network will need cross-departmental and cross-party support. We have not seen this support to-date, especially from the Department of the Marine. For the MPA network to be in any way meaningful, the new MPAs must be better managed than existing SACs and SPAs. The main obstacle to management of existing sites has been the Department of the Marine, and therefore the same actors will be an obstacle to management of new MPAs.
- 2. Lack of resources. We have seen throughout the country during our <u>townhall</u> <u>MPA events</u> that people are willing to put the work in, but the network needs to be adequately resourced with staff on the ground and regional stakeholder groups.

Do you agree or disagree with the systematic, structured approach recommended by the expert group?

We fully agree.

Do you agree or disagree with the general guidelines for successful stakeholder participation set out in the MPA report and provided in the green text above?

We fully agree.