PUBLIC CONSULTATION ON THE MPA ADVISORY GROUP'S REPORT ENTITLED EXPANDING IRELAND'S MARINE PROTECTED AREA NETWORK

2021

A submission by

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Figure 1: An Atlantic Puffin (Fratercula arctica) on Skellig Michael by Mike Lorden.

BirdWatch Ireland submission Re: Public Consultation on the MPA Advisory Group's Report Entitled Expanding Ireland's Marine Protected Area Network

30/07/2021

Marine Environment,
Department of Housing, Local Government & Heritage,
Newtown, Wexford,
Y35 AP90.
Email: marine.env@housing.gov.ie

Dear Sir/Madam,

Please take into consideration the following views expressed by BirdWatch Ireland in relation to the Public Consultation on expert advisory group report entitled "Expanding Ireland's Marine Protected Area Network[1]".

Introduction

BirdWatch Ireland are the largest independent conservation organisation in Ireland. Established in 1968, we currently have over 15,000 members and supporters and a local network of over 30 branches nationwide. As an organisation our conservation team are actively involved in seabird conservation, research, and monitoring. Our policy & advocacy team are also active stakeholders contributing to marine conservation and fisheries policies at a national and EU level. We are proud members of Birdlife International, the Irish Environmental network and the Sustainable Water Network.

Our vision is that Ireland should become a world leader in marine conservation and the sustainable management of our marine environment. To achieve the Irish government should pioneer's ocean protection within the EU by putting in place ambitious legislation and highly protecting at least 10 percent of its Exclusive Economic Zone by 2025, with a clear pathway for realising at least 30 percent by 2030. 30 percent should be seen as a minimum target and if there is good reason to go beyond this target then Ireland should do so.

We call on the government to expand Ireland's network of Marine Protected Areas such that it is coherent, representative, connected and resilient and meets Ireland's commitments under the Marine Strategy Framework Directive, the OSPAR Convention, the UN Convention on Biological Diversity Aichi target 11 and the UN Sustainable Development Goal 14, Life Below Water amongst others.

[1] Marine Protected Area Advisory Group (2020). Expanding Ireland's Marine Protected Area Network: A report by the Marine Protected Area Advisory Group. Report for the Department of Housing, Local Government and Heritage, Ireland.

The Irish Programme for Government (PFG) states that the government support the principles and ambition of the EU Biodiversity Strategy and will develop comprehensive legislation for the identification, designation, and management of Marine Protected Areas (MPAs) in Irish territorial waters. This is supported by Irish citizens over 90% of whom strongly agree that more action needs to be taken to improve the health of the ocean[2].

To achieve this the government should adopt an ambitious framework, timeline and budget to deliver best practice consultation, designation, monitoring and management of an ecologically coherent network of well-managed and well-resourced MPAs which protect and restore marine ecosystems within Irelands EEZ. As soon as possible the government should start engaging stakeholders in the process of developing the list of features we wish to protect. The Irish government should urgently start drafting ambitious legislation for the designation and effective delivery of an ecologically coherent network of well-managed and well-resourced MPAs, which protects and restores the marine environment and enshrines the whole site approach in law.

Ireland should deliver these and other key actions over the coming years putting us in a position to be a vocal champion for marine conservation in Europe during the Irish presidency of the EU in 2026.

Expanding Ireland's Marine Protected Area Network Report

We welcome the publication of the MPA Expert Advisory Group's Report entitled "Expanding Ireland's Marine Protected Area Network". We agree with the overarching objective of the report which is to support the expansion of Ireland's network of Marine Protected Areas (MPAs) such that it is coherent, representative, connected and resilient and meets Ireland's commitments under the Marine Strategy Framework Directive, the OSPAR Convention, the UN Convention on Biological Diversity Aichi target 11 and the UN Sustainable Development Goal 14, Life Below Water amongst others. If many of the recommendations outlined in the report were implemented, they would facilitate the expansion of Ireland's network of MPAs, greatly improving the health and resilience of marine ecosystem and Ireland's coastal communities and broader society which depend on the Ocean. In our submission we will highlight aspects of the report which we agree and disagree with. We also make some additional recommendations which are not within the report.

Context

Ireland may be a small island nation, but we are a large Ocean state. We are naturally blessed with one of the largest marine territories in Europe, covering approximately 490,000km^2 and 7,500km of coastline. This vast maritime area supports a rich diversity of coastal and marine ecosystems including internationally important habitats and species. This natural heritage has throughout our history supported a rich cultural heritage, which has contributed significantly to our national identity. Today approximately 40 per cent of the Irish population lives within 5 kilometres of the coast[3].

As a society we have some appreciation for the way in which the Ocean directly benefits us by providing food and recreational space but there is less awareness about how totally depending we are on the Ocean. Life originated in the earth's primordial ocean and since then the ocean has continued to nurture life by providing essential services and underpinning essential planetary functions. The Ocean supports over 90% of the habitable space on the planet[4] and contributes almost half of the

[2] Marine Institute (2020) Perceptions of the Irish public on priorities for the protection and sustainable use of the ocean https://bit.ly/3laeCOJ
[3] CSO (2016) https://www.cso.ie/en/releasesandpublications/ep/p-cp2tc/cp2pdm/pd/
[4] UNESCO http://www.unesco.org/new/en/natural-sciences/ioc-oceans/focus-areas/rio-20-ocean/blueprint-for-the-future-we-want/marine-biodiversity/facts-and-figures-on-marine-biodiversity/

annual primary production on Earth, forming the basis of the ocean food chain and gifting us every second breath[5]. The ocean is a key driver of global weather patterns and through the cycling and sequestration of carbon the ocean continues to help to stabilise our climate[6]. A healthy ocean is also essential to the wellbeing of human societies and our economies. For example, marine fisheries are crucial to the subsistence and livelihoods of coastal communities around the world[7], underpinning the ocean economy[8].

State of Ireland's Marine Environment

Our treatment of the ocean does not reflect our dependence on it. Marine ecosystems are under unprecedented pressure from overfishing, climate change and pollution[9]. These stressors may have synergetic effects on marine ecosystems and their ability to deliver ecosystem services. There is a serious risk that these stressors will result in tipping points resulting in cascading impacts that could accelerate biodiversity loss and critically impair the functioning of ecosystems.

The recent Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) global assessment on biodiversity and ecosystem services report[10] highlighted that nature is declining globally at rates unprecedented in human history — and the rate of species extinctions is accelerating, with grave impacts on people around the world now likely. The report found that human activities have had a large and widespread impact on the world's oceans. These include direct exploitation, in particular overexploitation, of fish, shellfish and other organisms, land- and sea-based pollution, including from river networks, and land-/sea-use change, including coastal development for infrastructure and aquaculture. Only 3 per cent of the ocean was described as free from human pressure. There has been a 10 percent decrease per decade in the extent of seagrass meadows from 1970-2000 and a 50 percent decrease in live coral cover of reefs lost since 1870s. Over 245,000 km2 of ocean are effectively 'dead zones' due to low oxygen levels caused by fertilizers.

Commercial fisheries have the largest global footprint of any human activity. Industrial fishing has a footprint four times larger than agriculture, in which more than the 70,000 reported industrial fishing vessels cover at least 55% of the oceans[10]. The northeast Atlantic is one of the most intensively fished regions on the planet[10]. Of the monitored commercial fish stocks in the Northeast Atlantic the proportion of overexploited stocks has remained at close to 40% over the last ten years; while in the Mediterranean 83% of stocks are overfished[11]. Climate change is becoming an increasingly dominant threat to the functioning of marine ecosystems with knock on impacts on seabirds and commercial fisheries. Climate change is projected to drive a 3-10 percent decrease in

[5] Field, C. B., Behrenfeld, M. J., Randerson, J. T., and Falkowski, P. G. (1998). Primary production of the biosphere: integrating terrestrial and oceanic components. Science 281, 237–240. doi: 10.1126/science.281.5374.237

[6] Brierley, A. S., and Kingsford, M. J. (2009). Impacts of climate change on marine organisms and ecosystems. Curr. Biol. 19, R602–R614. doi: 10.1016/j.cub.2009. 05.046

[7] Allison, E. H., Kurien, J., & Ota, Y. (2020). The human relationship with our ocean planet. Retrieved from https://ocean panel.org/blue-papers/Human Relat ionsh ipwit hOurO ceanP lanet

[8] Cisneros-Montemayor, A. M., Harper, S., & Tai, T. C. (2018). The market and shadow value of informal fish catch: A framework and application to Panama. Natural Resources Forum, 42, 83–92. https://doi. org/10.1111/1477-8947.12143

[9] European Environmental Agency (2019) Marine messages II Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem-based approach ISBN 978-92-9480-197-5 ISSN 1977-8449 doi:10.2800/71245 https://www.eea.europa.eu/publications/marine-messages-2/

[10] IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. 1148 pages. https://doi.org/10.5281/zenodo.3831673

[11] Scientific, Technical and Economic Committee for Fisheries (STECF) – Monitoring the performance of the Common Fisheries Policy (STECF-Adhoc-21-01). Publications Office of the European Union, Luxembourg, 2021, ISBN xxxxxxxxxxx, doi:xxxxxxxxxxx, PUBSY No.

ocean net primary production by the end of the century and a 3-25 percent decrease in fish biomass by the end of the century in low and high climate warming scenarios, respectively.

Already in Europe a high proportion of marine species and habitats are of unfavourable or unknown conservation status[12]. Only a small fraction of Irelands marine habitats and species are offered protections under the Birds and Habitats Directives. According to the National Parks and Wildlife Service[13] out of the 23 marine habitats protected under Habitats Directive only 5 are in favorable condition, 14 are in unfavorable-Inadequate and 4 are in unfavourable-bad condition. 10 out of the 23 are shown a declining trend in their conservation status.

Seabirds are more threatened globally than any other comparable group of birds with over one quarter of species threatened and 5 percent of species critically endangered[14]. According to the fourth assessment of Birds of Conservation Concern in Ireland 2020-2026, of Irelands 19 breeding seabird species, only 1 species is green listed, 11 are Amber-listed birds of medium conservation concern, 4 are red-listed birds of high conservation concern (Kittiwake, Puffin, Razorbill & Leach's Storm-petrel).[15] Post Brexit, Ireland is the most important EU27 state for these 4 Red listed species. Ireland also has a number of red-listed 'passage' species such as Balearic Shearwater and Sooty Shearwater.

Marine fish species are offered very little protection under Irish law. An assessment of 58 cartilaginous marine fish found that 6 were critically endangered, 5 species were assessed as endangered and 6 as vulnerable[16]. According to the Marine Institute[17], under the Marine Strategy Framework Directive (which mirrors the CFP's 2020 MSY obligation), only 20 percent (18 of 92) of commercial fish stocks analysed in 2019 met the criteria for achieving Good Environmental Status (GES). Across the EU only 26.7% of assessed exploited stocks are deemed to be at Good Environmental Status while the status of status of 89.5% of stocks remains unknown due to data gaps (EEA, 2019).

The health and resilience of marine ecosystems is closely interlinked with the prosperity and wellbeing of the coastal communities that depend directly on the ocean. While the recovery of some commercially important fish stocks has contributed to the improved economic performance of the EU fishing fleet; the ongoing decline in the status of inshore fish and shellfish populations due to overfishing has contributed to the ongoing decline in the number of active vessels and direct employment within the sector or the fact that the Small-Scale Coastal Fisheries (SSCF) in many Member States (MS) continue to make gross and net losses[18]. Clearly a new approach is needed to how we interact with the ocean. The stage is set for MPAs.

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[12] European Environmental Agency (2019) Marine messages II Navigating the course towards clean, healthy and productive seas through implementation of an ecosystem-based approach ISBN 978-92-9480-197-5
ISSN 1977-8449 doi:10.2800/71245 https://www.eea.europa.eu/publications/marine-messages-2/

[13] NPWS (2019). The Status of EU Protected Habitats and Species in Ireland. Volume 2: Habitat Assessments. Unpublished NPWS report. Edited by: Deirdre Lynn and Fionnuala O'Neill

[14] Croxall, J.P., Butchart, S.H.M., Lascelled, B., Stattersfield, A.J., Sullivan, B., Symes, A., Taylor, P. 2012. Seabird conservation status, threats and priority actions: a global assessment. Bird Conservation International, 2012, Vol. 22, 1-34.

[15] Gilbert, G., Stanbury, A., & Lewis, L. (2021). Birds of Conservation Concern in Ireland 4: 2020–2026. Irish Birds, 43, 1-22.

[16] 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.

[17] Irish government (2020) Marine Strategy Framework Directive 2008/56/EC_Article 17 update to Ireland's Marine Strategy Part 1: Assessment (Article 8), Determination of Good Environmental Status (Article 9) and Environmental Targets (Article 10) https://bit.ly/2P5aG09

[18] Scientific, Technical and Economic Committee for Fisheries (STECF) - The 2020 Annual Economic Report on the EU Fishing Fleet (STECF 20-06), EUR 28359 EN, Publications Office of the European Union, Luxembourg, 2020, ISBN 978-92-76-27164-2, doi:10.2760/500525, JRC123089

Marine Protected Areas – State of Play

Around 2.3 per cent of Ireland's maritime area is currently designated and protected as part of the Natura 2000 network. 19 of the Special Protection Areas (SPA) and Special Areas of Conservation (SAC) that make up the Natura 2000 network are also recognized as OSPAR MPAs. Ireland is well behind the EU average and has one of the smallest proportions of protected waters in the EU. Despite international and EU commitments to have 10 percent protected by 2020, there has been little progress in the designate of new Marine Protected Areas (MPAs). Even the marine element of Ireland's Natura 2000 network is incomplete. Further SAC designations are needed for Annex I Reef habitat and a significant body of work is also needed to meet designation requirements for seabirds with most species having little spatial protection of important foraging and wintering sites.

Active protection and conservation management within the marine environment has been historically weak. This is demonstrated by the negative trends in the conservation status of 'protected' marine habitats and species. The Marine Institute have carried out a risk assessment on the effects of fisheries on the qualifying interests of Special Areas of Conservation in Irish coastal waters[19]. The Marine Institute found that destructive forms of commercial fishing such as bottom trawling are ongoing in MPAs. They found that bottom trawling can have significant negative impacts on seafloor habitats, especially for habitats not subject to natural disturbance. They believe that the scale of the negative impacts varies depending on the frequency of disturbance and the sensitivity of different species to disturbance. The study found that fisheries using bottom trawls or dredges in particular poses a risk to habitats such as maerl, sea grass and biogenic or geogenic reef habitats because these habitats are sensitive to physical disturbance. These negative impacts on supposedly protected habitats are likely having knock on impacts on fish communities that may use these sensitive coastal habitats as spawning grounds or nursery grounds. Protecting these areas from trawling and dredging would improve the conservation status of these habitats. This would have knock on benefits at an ecosystem level benefiting the recruitment of commercially exploited fish species.

One of the rulings of the Court of Justice of the European Union (CJEU) in Case C 418/04 Commission v Ireland 'The Birds Case,' found that Ireland had failed to comply with Article 6 (3) and (4) in regard to aquaculture licensing. The failure of the state to protect coastal habitats and important shore bird habitat within the Natura 2000 network is an ongoing issue. At sea the states failure to adequately monitor and control commercial fishing activities continues to contribute to illegal fishing activities both within and outside of protected areas. A recent Commission audit[20] highlighted "*severe and significant weaknesses in the Irish control system*" including "*the lack of effective enforcement and sanctioning of noncompliance*." Separately, the Commission recently indicated their intention to take Ireland to the Court of Justice of the EU[21], unless it addresses its failure to implement a penalty point system for fisheries-related serious infringements. Our understanding is that a further legal action against the state is imminent due to Ireland's failure to properly implement the landing obligation which banned most forms of discarding dead fish at sea as of January 2019.

Ireland has clearly failed to designate a sufficient area or diversity of marine features. What has been designated is poorly protected and routinely vandalised as the result of poor engagement

[19] Marine Institute (2015) Article 6.2 (Habitats Directive) Risk Assessment, The effects of fisheries on Qualifying Interests in Special Areas of Conservation in Irish coastal waters, Marine Institute, Rinville, Oranmore, Co. Galway
[20] Audit reference number: IE-D4-2018-01-A
[21] European Commission (2020) July infringements package: key decisions https://bit.ly/3h8wFiP

with communities, poor enforcement or because of government policy. We therefore agree with the report that there are "some important shortcomings in the current status of the marine environment and in terms of international targets for the total coverage and the level of protection for important species and habitats that are threatened or declining, either despite protection within Natura 2000 or in the absence of current protection." We also agree that "at this point, Ireland's network of protected areas cannot be considered coherent, representative, connected or resilient or to be meeting Ireland's international commitments and legal obligations."

Ireland failings should be seen as an opportunity to demonstrate political leadership moving forward. We also have an opportunity to learn from the failings of other Members States that have already adopted MPA legislation and are more experienced in the designation and management of MPAs. A 2019 study[22] found that the EUs network of MPAs were 'paper parks', noting that "much of the EU's spatially impressive MPA network provides a false sense of security about positive conservation actions being taken." The study found that 59 % of the MPAs analysed were commercially trawled at levels higher than non-protected areas, and that many MPAs did not protect vulnerable species. In 2020, the Commission estimated that less than 1 % of marine areas were strictly protected in the EU[23]. A 2018, study[24] found that the EU's MPA network was still not ecologically coherent or representative with protected areas skewed towards coastal waters with insufficient protection of off-shore and deep sea habitats. Ireland therefore has a genuine opportunity to become a world leader in the fields of marine conservation, marine spatial planning, and sustainable fisheries management by creating a network of MPAs that is ecologically coherent, representative connected and resilient.

The need for broader change

MPAs must be part of a broader transition to ecosystem-based natural resource management, whereby we manage human activities in a sustainable and holistic way that reflects our ultimate dependence on the Ocean. We welcome the reports recognition that the MPA network is primarily being driven by evidence and concerns about biodiversity loss enshrined in a range of international commitments but that "the network should also be recognised as contributing to a wider ecosystem-based management framework with the ultimate aim of achieving Good Environmental Status under the MSFD that combines a range of other objectives, including sustainable fisheries management, resilience to climate change including through enhanced carbon sequestration, and effective Marine Spatial Planning."

MPAs are primarily a tool to protect and restore marine biodiversity both within sites but also within the broader marine environment. In this sense they should be viewed as tools to protect and restore healthy and resilient marine ecosystems as opposed to isolated wildlife refuges adrift in a degraded Ocean. This view is supported by IPBES who have said that "ensuring sustainable food production from the oceans while protecting biodiversity entails policy action to apply sustainable ecosystem approaches to fisheries management; spatial planning (including the implementation and expansion of marine protected areas); and more broadly, policy action to address drivers such as climate change and pollution (well established)"…"Scenarios show that the pathways to sustainable fisheries

[22] Dureuil et al.: "Elevated trawling inside protected areas undermines conservation outcomes in a global fishing hot spot", Science, Vol. 362, Issue 6421, pp. 1403-1407, 2018.
[23] COM(2020) 380 final of 20 May 2020: Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. EU Biodiversity Strategy for 2030. Bringing nature back into our lives.
[24] EEA: "Marine Protected Areas", 2018. https://www.eea.europa.eu/themes/water/europes-seas-and-coasts/assessments/marine-protected-areas

entail conserving, restoring and sustainably using marine ecosystems, rebuilding overfished stocks (including through targeted limits on catches or fishing efforts and moratoria), reducing pollution (including plastics), managing destructive extractive activities, eliminating harmful subsidies and illegal, unreported and unregulated fishing, adapting fisheries management to climate change impacts and reducing the environmental impact of aquaculture (well established)."

Marine protected areas have a proven track record when it comes to delivering positive conservation and socio-economic benefits contributing to improved local quality of life for coastal communities when they are managed effectively. Local fisheries are known to benefit from the spill over of fish populations from within protected areas. MPAs and fisheries spatial closures have been an underutilised tool in Irish fisheries management because mangers have prioritised measures improve the survivability of juvenile fish but have ignored the importance of protecting large female fish. Larger females are far more productive than the same weight's worth of smaller females[25]. This simple principle alone highlights the potential benefits for fisheries of creating refuges where fish can grow to their full maturity and reproductive potential. For example, research form Apo Island in the Philippines demonstrated that in the case of Acanthuridae (surgeonfish) and Carangidae (jacks), two families of reef fish that account for 40–75% of the fishery, yield tripled in a well-protected no-take reserve over 18 years (1983–2001)[26]. Biomass of these families did not change significantly over the same period at a site open to fishing. The benefits of the reserve to local fisheries at the island were higher catch, increased catch rate, and a reduction in fishing effort. The fishery and tourism benefits generated by the reserve have enhanced the living standard of the fishing community. The spin-off benefits of ecotourism and recreational fishing may be significant[27]. MPAs could also play an important role in further improving public perception of Irelands 'green image'. Something that is central to our tourism and food and drinks industries.

We strongly support the reports assertion that the expansion of Ireland's MPA network presents "a great opportunity…to radically improve the framework for managing Ireland's marine environment and to secure its benefits for future generations." We would go further and say that it is essential that the MPA process is part of a deeper reform in how we engage with nature and each other. We do not feel that this need for deep reform is applied consistently throughout the report, and this is evident in the overly pessimistic view of socio-economic trade-offs which we believe are not farmed within the broader context of our climate and biodiversity crisis or the socio-economic and socio-cultural crisis within many fishing communities. We believe that we must challenge existing governance structures and ways of thinking that have contributed to our ongoing biodiversity and climate crisis as well as the associated socio-economic crisis within much of the fishing sector. We must look to move away from top-down structures and reengage with communities at a grass-roots level. This means early and sustained engagement not just around designation but also around monitoring and management. We believe that listening to the science and by listening to each other we can identify a better pathway forward towards our shared objectives of healthy marine ecosystem and prosperous coastal communities. We strongly believe that a healthy and resilient Ocean will ultimately benefit all stakeholders. We fully acknowledge that alongside the notable win-wins there will also be trad-offs for the fishing sector in the short-term. We shouldn't shy away from exploring solutions to challenges that arise. We need to engage and develop solutions rather than avoiding conflict with the status quo. Because it must be recognised that it is the status quo itself which has driven the collapse in fish stocks, wildlife

[25] Barneche et al., 2018 Fish reproductive-energy output increases disproportionately with body size https://science.sciencemag.org/content/360/6389/642

[26] Russ, G. R., Alcala, A. C., Maypa, A. P., Calumpong, H. P., & White, A. T. (2004). Marine reserve benefits local fisheries. Ecological applications, 14(2), 597-606.

[27] Prayaga, P., Rolfe, J., & Stoeckl, N. (2010). The value of recreational fishing in the Great Barrier Reef, Australia: a pooled revealed preference and contingent behaviour model. Marine Policy, 34(2), 244-251.

populations and the small-scale fishing fleet. MPAs must not be seen as a new pressure on fishing communities but a lifeline out of the downward spiral that has left so many fishing communities heavily dependent on a small number of fragile shellfish stocks and volatile markets.

The ongoing decline in the status of inshore fish and shellfish populations has contributed to the ongoing decline in the number of active vessels and direct employment within Ireland's small-scale fleet / inshore sector. Of the 1,991 vessels registered in Ireland over 80% are less than 12m in length. These smaller vessels make up the clear majority of Ireland's fishing sector and are total dependent on the inshore areas. They play an important role in supporting employment in coastal communities. By rebuilding marine ecosystems within our inshore waters, we will therefore benefit the vast majority of fishers and coastal communities. By all means let's carry out socio-economic assessments of the trad-offs and opportunities of MPA designation but let's also carry out a socio-economic assessment of how the state have managed fisheries over the last fifty years. Let's carry out a socio-economic assessment of how we choose to distribute fishing opportunities.

According to the Department of Agriculture Food and Marine themselves "*a reduction in the abundance of large 'fish eating' fish such as cod, hake and whiting, and an increase in species which feed at a lower trophic level (lower down the food chain) such as Nephrops, has resulted in a decline in the mean trophic level of the fish community over time in coastal waters. Trawling effort and fish outtake in coastal waters therefore needs to be managed to restore the prevalence of large fish*" and "*the abundance and growth of juvenile cod, haddock and whiting is positively related to the diversity of demersal species and fauna on the seafloor*[28]*.*" These principles in themselves highlight the need for Ireland to transition to an ecosystem-based approach to fisheries management with Marine Protected Areas being used as an important part out our ecological infrastructure. As we have said previously, the prosperity and wellbeing of the coastal communities and broader society is closely interlinked with the health and resilience of the marine ecosystems on which they depend on. This is a view that is held by the Irish public, two thirds of whom believe that that the health of the ocean and their own health is connected. Let's then not ask if we can afford the inconvenience of MPAs but instead ask if we can either protect and restore marine biodiversity or protect and restore the prosperity of fishing communities without reforming how and where we fish.

Proposed definition for MPAs in Ireland and recommended key principles

In general, MPAs are considered to be geographically defined marine areas where human activities are managed in order to achieve positive conservation outcomes for biodiversity and environmental indicators. The individual sites may be protected and managed to achieve conservation outcomes within a site, within a network of sites or as part of a broader holistic suite of measures designed to achieve sustainable human interactions with the marine environment. In our opinion the primary objective of an MPA should be the delivery of conservation outcomes. It is the primacy of conservation that distinguishes MPAs from other spatial and temporal management zones used within fisheries management. This view is also supported by the Commission who define MPAs as marine areas created with a primary objective of nature conservation[29]. The Commission also state that to be effective MPAs need to have clear objectives with well managed actions based on best available science. The ability of MPAs to deliver broader cultural and socio-economic benefits may

[28] DAFM (2018) Consultation Paper on Minister's Review of Trawling Activity Inside the 6 Nautical Mile Zone

[29] COM(2015) 481 final of 1 October 2015: Report from the Commission to the European Parliament and the Council on the progress in establishing marine protected areas (as required by Article 21 of the Marine Strategy Framework Directive 2008/56/EC).

be recognised and incorporated into a site objectives and management but these should be complementary to sites conservation objectives. Existing EU legislation does not require MPAs to have management plans but the OECD[30] has identified them as a good practice. We believe that management plans are essential to provide the framework for the delivery of the conservation objectives. They also provide greater clarity for all stakeholders on how a site should be managed. We believe that the sites should be selected for designation based on the best available scientific advice and that both conservation objectives and management plans should be required as part of the designation process. This should be clearly outlined in the governing MPA legislation. The conservation objectives and management plans should consider the threats and pressures within the site and any potential changes to commercial or recreational activities should be explored with all stakeholders and communities considering alternatives opportunities and the potential need for financial supports as part of a just transition. Immediate action should be taken to implement management plans, ensuring effective conservation of Irelands existing MPAs within the Natura 2000 network.

A resolution of IUCN General Assembly in 1988 called upon governments to: "Provide for the protection, restoration, wise use, understanding and enjoyment of the marine heritage of the world through the creation of a global, representative system of marine protected areas and through management in accordance with the principles of the World Conservation Strategy of human activities that use or affect the marine environment." This highlights the multiple benefits that MPAs can deliver, while highlighting the need for sites to be part of a representative network that are an integral part of the overarching management of human activities that delivers a sustainable and ecosystem-based approach to marine activities. The MSFD requires Member States to include in their strategy's spatial protection measures, contributing to coherent and representative networks of marine protected areas[31]. Ireland's network of MPAs must be ecologically coherent, representative, connected and resilient. To achieve this an approach should be taken like that adopted by OSPAR in their guidelines for the Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area[32]. OSPAR's approach is designed to be compatible with EU obligations and aims to protect and conserve areas that best represent the range of species, habitats and ecological processes. Guidance on how Irelands existing network should be expanded in line with OSPAR's guidelines and associated criteria can be taken from the process adopted by the JNCC[33].

MPAs should reflect the MSFDs perspective of achieving good environmental status by looking beyond a sites qualifying interests and tacking an ecosystem view of the site which includes the consideration of pressures, habitats, food web interactions and population dynamics. This whole site approach means that MPAs should look to restore natural processes and ecosystem functioning. The MSFD descriptors that help to define Good Environmental Status (GES) under the directive highlight the need for MPAs to protect and restore biodiversity (Descriptor 1), restore healthy populations of commercial fish species (Descriptor 3) and restore the abundance and productivity of marine food webs (Descriptor 4). Other descriptors highlight the need to protect the marine environment from pollution: Eutrophication (Descriptor 5), Contaminants (Descriptor 8 & 9), Marine litter (Descriptor 10) and energy including noise pollution (Descriptor 11). The need to ensure that sea floor integrity (Descriptor 6) and hydrographical conditions (Descriptor 7) are consistent with a healthy and

[30] Marine Protected Areas Economics, Management and Effective Policy Mixes https://www.oecd.org/environment/resources/Marine-Protected-Areas-Policy-Highlights.pdf
[31] MSFD Article 13(4).
[32] OSPAR Commission (2006). Guidance on developing an ecologically coherent network of OSPAR marine protected areas. No. 2006-03. Available at: http://jncc.defra.gov.uk/pdf/0603e_Guidance%20ecol%20coherence%20MPA%20network.pdf
[33] JNCC (2016) Assessing progress towards an ecologically coherent MPA network in Secretary of State Waters in 2016: https://data.jncc.gov.uk/data/8460e7fa-9f76-42d1-a23d-d1322de3c3e6/JNCC NetworkProgressInSoSWaters2016-Methods-Final.pdf

functioning ecosystem also highlight the need for MPAs to be in a heathy and natural condition. Activities that are incompatible with this objective such as destructive commercial fishing activities such as bottom-towed gears should be banned from MPAs.

The extent to which sites and protected and human activities are restricted varies internationally, ranging from highly protected areas such as 'no take zones', where no extractive activities are permitted, to sites where some low impact activities are permitted, to sites where there is no effective protection or 'paper parks.' Sites may also be 'multiple use' and incorporate different zones with different level of protection and management. Research has shown the ability of highly protected MPAs to deliver multiple environmental and socio-economic benefits. It has been found that a substantial increase in ocean protection could have triple benefits, by protecting biodiversity, boosting the yield of fisheries and securing marine carbon stocks that are at risk from human activities[34]. The European Commission's Biodiversity Strategy[35] calls for at least 30 percent protection of the EU's marine environment by 2030, with 10 percent "strictly" protected. This is a minimum standard, and we believe that high-protected areas should make up a significant proportion of Irelands MPA network. These highly protected zones could be surrounded by buffer zones in which low-impact commercial activities can take place subject to environmental assessment. The spatial and temporal management of core-zones and buffer zones should be developed in consultation with stakeholders and communities as part of the designation process. It must be recognised that poorly protected 'paper parks' will fail to deliver the multitude of benefits that we are all so keen to see realised.

The report proposed to define an MPA in Ireland as: "A geographically defined area of marine character or influence which is protected through legal means for the purpose of conservation of specified species, habitats or ecosystems and their associated ecosystem services and cultural values and managed with the intention of achieving stated objectives over the long term."

The reports definition is similar to the definition adopted by the International Union for Conservation of Nature (IUCN), which defines a protected area as "a clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values".

We support many aspects of the reports MPA definition however we object to the inclusion of the 'long term' timeframe. The consideration of conservation objectives should be taken into account when identifying sites, defining their boundaries and management. Some of the stated objectives should be achieved immediately upon designation while other will be progressively achieved over short, medium, and longer timescales. By emphasising a long-term timeframe, we leave the door open for procrastination and paper parks. The MPAs are in themselves the conservation objectives realised not a distant aspiration. The conservation objectives of a site should confer protection upon the site from the outset. Where conservation objectives identify the need to improve the conservation status of species, habitats, or other indicators liked to ecosystem functioning and environmental health then these should be achieved progressively through ongoing management and protection as quickly as possible and in line with Ireland's international obligations and the urgency of action in the face of our biodiversity cand climate crisis.

[34] Sala, E et al., (2021). Protecting the global ocean for biodiversity, food and climate. Nature, 592(7854), 397-402.
[35] EU Biodiversity Strategy 2030 https://ec.europa.eu/environment/strategy/biodiversity-strategy-2030_en

Marine Strategy Framework Directive & Good Environmental Status:

Under the Marine Strategy Framework Directive EU Member States are obliged to achieve Good Environmental Status of EU marine waters by 2020. The Directive defines Good Environmental Status (GES) in Article 3 as: "The environmental status of marine waters where these provide ecologically diverse and dynamic oceans and seas which are clean, healthy and productive"
GES means that the different uses made of the marine resources are conducted at a sustainable level, ensuring their continuity for future generations.
GES means that:
Ecosystems, including their hydro-morphological (i.e. the structure and evolution of the water resources), physical and chemical conditions, are fully functioning and resilient to human-induced environmental change;
The decline of biodiversity caused by human activities is prevented and biodiversity is protected;
Human activities introducing substances and energy into the marine environment do not cause pollution effects. Noise from human activities is compatible with the marine environment and its ecosystems.
To help Member States interpret what GES means in practice, the Directive sets out, in Annex I, eleven qualitative descriptors which describe what the environment will look like when GES has been achieved.

Descriptor 1. Biodiversity is maintained
Descriptor 2. Non-indigenous species do not adversely alter the ecosystem
Descriptor 3. The population of commercial fish species is healthy
Descriptor 4. Elements of food webs ensure long-term abundance and reproduction
Descriptor 5. Eutrophication is minimised
Descriptor 6. The sea floor integrity ensures functioning of the ecosystem
Descriptor 7. Permanent alteration of hydrographical conditions does not adversely affect the ecosystem
Descriptor 8. Concentrations of contaminants give no effects
Descriptor 9. Contaminants in seafood are below safe levels
Descriptor 10. Marine litter does not cause harm
Descriptor 11. Introduction of energy (including underwater noise) does not adversely affect the

We also recommend that the MPA definition should be clear that the 'stated objectives' are specifically the 'conservation objectives' of the sites. These conservation objectives should be legally required as part of the designation process. The conservation objectives should as far as possible look to restore the natural condition of the site, or at least the expected structure and functioning of the ecosystem. The conservation objectives should look to achieve good conservation status for key

habitats and species within the site; they should look to restore the natural population structure of species within the site; the overall network should support the functioning of the overarching eco-region ecosystem. The MPAs should be of sufficient size and there should be sufficient connectivity between sites to ensure that the network is ecologically connected, coherent and resilient.

Sites must be routinely monitored to ensure that management plans are being implemented, to identify negative pressures and illegal activities within sites and to ensure that progress is being made towards the site's and the networks conservation objectives. The MPA legislation should require that regular reports need to be given to the Oireachtas on the findings of these monitoring repots and the overall progress of the MPA network towards its objectives. This protection of MPAs should be integrated into Ireland's broader framework for the monitoring and control of commercial fishing activities. Given the severe and significant weaknesses in the Irish fisheries control system we believe that there needs to be an overhaul of fisheries control. We need an all-government commitment to the roll-out of new cost-effective tools such as Remote Electronic Monitoring (REM) (e.g. CCTV), regardless of the outcome of the EUs review of the Control Regulation. Without a fit for purpose monitoring, control, and enforcement system 'paper parks' will be inevitable. We believe that local coastal communities and fishers should be viewed as the custodians of their local MPAs and they should be actively involved in monitoring and citizen science projects.

We support the reports call for periodic reviews of the MPA network but we disagree that the periodic reviews would should inform "adaptations of designations". This approach creates an incentive to underachieve or actively damage sites. We believe that if anthropogenic threats and pressures are addressed then ecosystems will respond positively. The conservation objective approach identified within the report already considers that a site may not return to a pristine baseline condition, instead conservation should target the maintenance of or restoration to a state that is as close as possible to the expected structure and functioning of the ecosystem given the general physiography and location of the area or as compared to selected reference sites or states.

What should be included in our future MPA network?

As we have previously outlined Ireland's MPA network must be ecologically coherent and representative. We agree with the report's recommendation on the inclusion of "existing legally-protected marine sites (for example, Reserves, Special Areas of Conservation, Special Protected Areas for birds) as part of the future network of MPAs in Ireland." It is common practice internationally that existing designations should be incorporated into the final MPA network. As we have previously outlined the current MPA network is biased in favour of the habitats and species protected by the Birds and Habitats Directives, with a high proportion of designations found in the inshore area. Ireland must complete the current Natura 2000 network by designating additional sites for Annex I Reef habitat, seabird foraging and wintering sites as well as important sites for cetaceans and pinnipeds. We also believe that the distribution of protected sandbanks (sand banks slightly covered by sea water at all times) is inadequate and does not ensure connectivity or resilience of the protected sites. The new network must then look to protect habitats and species that are not contained within the annex list of the Birds and Habitats Directives.

Ireland's network of MPAs must be ecologically coherent, representative, and well-managed. To achieve this an approach should be taken like that adopted by OSPAR in their guidelines for the

Identification and Selection of Marine Protected Areas in the OSPAR Maritime Area[36]. OSPAR's approach is designed to be compatible with EU obligations and aims to protect and conserve areas that best represent the range of species, habitats and ecological processes.

Important principles guiding the OSPAR process are:

Features: Sites should represent the range of species, habitats and ecological processes in the area. The proportion of features included in the MPA network should be determined on a feature-by-feature basis, considering whether features that are in decline, at risk or particularly sensitive are of a higher priority and would benefit from a higher proportion being protected by MPAs.

Representativity: To support the sustainable use, protection and conservation of marine biological diversity and ecosystems, areas which best represent the range of species, habitats and ecological processes.

Connectivity: This may be approximated by ensuring the MPA network is well distributed in space and takes into account the linkages between marine ecosystems.

Resilience: Adequate replication of habitats, species and ecological processes in separate MPAs in each biogeographic area is desirable where possible. The size of the site should be sufficient to maintain the integrity of the feature for which it is being selected.

Management: MPAs should be managed to ensure the protection of the features for which they were selected and to support the functioning of an ecologically coherent network.

Guidance on how Irelands existing network should be expanded in line with OSPAR's guidelines and associated criteria can be taken from the process adopted by JNCC[37]. In particular we believe that the eight criteria used by the JNCC to identify gaps in the UKs MPA network are useful.

In addition, we are supportive of the additional criteria identified by the Sustainable Water Network, namely:

Sensitive benthic habitats with carbon rich habitats prioritised:
For example: Subtidal mud, deep-sea mud, littoral mud, deep water mud.

Blue carbon habitats: For example: Saltmarsh, Seagrass, maerl beds, muddy sediments with seapens, kelp.

Coastal protection habitats: For example: Maerl beds, high moderate and low energy infralittoral and littoral rock, littoral sand and muddy sand, sublittoral biogenic reefs.

Highly mobile species: For example: All elasmobranchs, cetaceans, non-annex seabirds such as black guillemots.

Vulnerable marine ecosystems (VME): For example: Coral and sponge reefs, seapen communities, seamounts, hydrothermal vents, Cold Seeps,

Forage fish species: For example: Sprat, herring, sandeel. These forage fish species play a particularly important roles in marine food webs and ecological processes. This includes important

[36] OSPAR Commission (2006). Guidance on developing an ecologically coherent network of OSPAR marine protected areas. No. 2006-03. Available at: http://jncc.defra.gov.uk/pdf/0603e_Guidance%20ecol%20coherence%20MPA%20network.pdf
[37] JNCC (2016) Assessing progress towards an ecologically coherent MPA network in Secretary of State Waters in 2016: https://data.jncc.gov.uk/data/8460e7fa-9f76-42d1-a23d-d1322de3c3e6/JNCC NetworkProgressInSoSWaters2016-Methods-Final.pdf

ecosystem services such as the cycling, transport and sequestration of Carbon in the marine environment. Their role as keystone species in marine ecosystems means they should be given considerations within the MPA network.

Provision of ecosystem services: A growing emphasis has also been placed on the importance of ecosystem services to society and the greater biosphere. MPAs can be used to protect and enhance the marine environment's ability to maintain and enhance these important services. This is reflected in the report where it is suggested that "areas contributing to maintenance of ecosystem functioning and ecosystem services including carbon sequestration" could be included in the MPA network. Potential habitat types that could be prioritised for inclusion in the MPA network due to their ecosystem services are: Oyster reefs (filter water, coastal defence, nursery habitat for commercial fish sp., food production), saltmarsh (coastal defence), seagrass (carbon storage, water filter, nursery habitat), Kelp forests,

Threatened or declining species and habitats that are currently not afforded protection:
For example: Elasmobranchs (especially Portuguese dogfish; common (blue) skate; flapper skate; porbeagle shark; white skate, angel shark, basking shark, leafscale gulper shark, common stingray, undulate skate, spurdog)

The protection of important fish spawning and juvenile nursery grounds should be prioritised: All fish species and shellfish species are wildlife and in principle they should be afforded the same protection as birds or mammals. Protecting important fish spawning and juvenile nursery grounds would also have spin-off benefits for the management of commercial fisheries. In this way MPAs could play an important role in Irelands transition to an ecosystem-based approach to fisheries management. Fishers should be empowered to bring their own wealth of knowledge to the decision-making table. Ideally fishers would themselves identify sites for protection in consultation with the authorities and other stakeholders. The Marine Institute and the International Council for the Exploration of the Sea (ICES) already have a wealth of knowledge on the location of important spawning and nursery grounds, which could form the foundation for discussions.

Mobile MPAs should also be considered in the future MPA network: These mobile MPA boundaries would vary over spatial and temporal ranges in order to help protect mobile species and aid in adaptive MPA management. For example - mobile MPAs during peak whale migrations in order to protect their feeding grounds and the impacts of anthropogenic pressures such as noise.

Other types of anthropocentric or geological designations: Features that are of national and/or international importance to Ireland's marine cultural heritage, built heritage or geodiversity should be considered for designation or incorporation into the network. However, these features should not come at the expense of the overarching marine conservation objectives and their associated legal obligations i.e. they should come in addition to the 30% target. It would be of concern to us that MPAs could be designated based on 'biocultural diversity value,' at the expense of sites that should be designated with the objective of maintaining of or restoring a state that is as close as possible to the expected structure and functioning of the ecosystem given the general physiography and location of the area or as compared to selected reference sites or states.

The role of Other Effective Area-based Conservation Measures (OECMs)

We believe that Other Effective Area-based Conservation Measures (OECMs) have a role to play in the sustainable implementation of marine spatial planning, ecosystem-based fisheries management,

marine conservation, and climate action. For example, spatial and temporal closures in fisheries management can play an important role in protecting and restoring marine biodiversity. They may also enhance the connectivity and resilience of the MPA network by providing steppingstone and corridor habitats. Similarly, off-shore wind farms may enhance the connectivity of the MPA network for some species by providing areas of lower fishing intensity. However, we do not see these sites as being part of the MPA network but rather a part of our broader infrastructure contributing to shared ecological and socio-economic wellbeing. As we have said the primary objective of an MPA should be the delivery of conservation outcomes and this view is supported by the Commission[38]. Any activities that are not part of the management of the site should be compatible with the site's conservation objectives. OECMs which allow activities which have a negative impact on the habitats or species within the sites should not qualify for inclusion within the MPA network. Many types of OECMs would also not be in line with the whole site approach, and they should not be considered as contributing to Irelands EU targets for protection and strict protection. In this sense we agree with the report that "Other Effective Area-based Conservation Measures (OECMs) can also contribute to overarching conservation goals, but do not necessarily have nature conservation as their primary objective," or in other words OECMs can contribute to the overarching conservation goals to which the MPA network will contribute but they are not MPAs as their primary objective is not marine conservation.

How should we expand our MPA network?

In this section we would like to outline our perspectives in regard to (A) potential implementation steps and priorities in the delivery of an expanded MPA network, and (B) the principles you think are important in the process of engagement with all stakeholders, including the general public.

Stakeholder Engagement

We believe that top-down mechanisms around designation and management have often alienated stakeholders critically undermining local buy in into conservation initiatives with negative consequences for site protection. We agree with the report that "early and sustained stakeholder engagement should be integral to the selection and management processes for MPAs. Engagement should be inclusive and equitable and the process should be designed to ensure that it is transparent, meaningful and facilitating." We also agree with the report that "there is also scope to greatly improve the level of stakeholder engagement and participation in the site selection and management process to promote and support marine stewardship and the overall effectiveness of the network."

As we have said we believe that we must challenge existing governance structures and ways of thinking that have contributed to our ongoing biodiversity and climate crisis as well as the associated socio-economic crisis within much of the fishing sector. We must look to move away from top-down structures and reengage with communities at a grass-roots level. This means early and sustained engagement not just around designation but also around monitoring and management. We believe that listening to the science and by listening to each other we can identify a better pathway forward

[38] COM(2015) 481 final of 1 October 2015: Report from the Commission to the European Parliament and the Council on the progress in establishing marine protected areas (as required by Article 21 of the Marine Strategy Framework Directive 2008/56/EC).

towards our shared objectives of healthy marine ecosystem and prosperous coastal communities. We strongly believe that a healthy and resilient Ocean will ultimately benefit all stakeholders.

We agree with the report that existing inequalities need to be addressed to achieve meaningful community engagement in order to building legitimacy in the MPA selection, management, and monitoring processes. It has been our experience that Producers Organisations for example get priority access to decision makers and managers while small-scale sector representatives and NGOs are usually marginalised. It must be recognised that capacity constraints are a barrier to stakeholder participation for many organisations.

We support the reports recommendation that a national coordinating body should be established with the authority to coordinate planning and implementation, to foster good governance and ensure close collaboration among relevant departments and agencies and synergy with related undertakings such as the National Marine Planning Framework. This group should meet with stakeholder groups such as BirdWatch Ireland. The group should also identify mechanisms to engage communities throughout all steps in the MPA process.

We believe that many of the points outlined in the reports 'General guidelines for successful MPA stakeholder participation processes' are positive. We would highlight that a forum for engaging NGO stakeholders needs to be identified. We agree that certain elements of the process will take time but some will take longer than others. We will suggest ways of prioritising certain types of sites later.

MPA Legislation

Currently there is no legal definition of MPAs in Irish law. Existing environmental legislation fails to provide protection to most marine habitats and species, regardless of their conservation status. The law also currently fails to provide a mechanism for the designation of MPAs outside of the 12 nautical mile zone. We agree with the report that new legislation is needed to establish the necessary framework for governance and management and appropriate resources and funding must be allocated to plan, implement, manage, monitor, and review the MPA network. We also agree that the new legislation should facilitate the creation of transboundary MPAs, recognising that this will require bilateral aspects. This legislation should be designed to deliver the kind of MPA network we have outlined, it should include the requirement for a 'whole site' approach and should prohibit damaging commercial activities within sites. The legislation should be in line with Ireland's legal commitments, under the EU Marine Strategy Framework Directive, the OSPAR Convention, the Convention on Biological Diversity and the UN Sustainable Development Goals.

This legislation needs to be prioritised and fast tracked by the government. The government must ensure a coherent and precautionary approach to MPAs across all relevant legislation. There are significant gaps in the current policy frameworks including the National Marine Planning Framework (NMPF). We believe the NMPF is not in line with our EU and International obligations. Significantly it has failed to ensure that interim protections are in place to ensure that safeguards are in place to protect sensitive habitats and species. The need for interim protection should be addressed within the Maritime Area Planning Bill.

Scientific Data Collection

The role that scientific data plays in the designation, management and monitoring of protected sites cannot be overstated. The decision-making process around the identification of features and sites

and the evaluation of the coherence and representativeness of the MPA network must be informed by the best available scientific advice. Likewise, it is critical that scientific advice underpins the setting of conservation objectives and management plans. The importance of science in the protection of sites is evident within the case law that has evolved around the protection of the Natura 2000 network. For example, the assessment of the potential impacts of plans and projects on sites must be undertaken based on the best available scientific knowledge in the field[39].

Unfortunately, there is a serious lack of data on the conservation status of most marine habitats and species. Even commercially exploited fish species are poorly monitored with the status of status of 89.5% of stocks unknown due to data gaps (EEA, 2019). Significant investment is needed in scientific data collection to enable the expansion and management of Irelands MPA network. The same could be said of the expansion of Irelands network of off-shore renewable energy sites, which cannot be developed sustainably in the absence of scientific data to inform project design and environmental impact assessment. A 2020 survey by the Marine Institute[40] found that there was strong agreement (88%) that marine environmental data collection is important.

Off-Shore Renewables

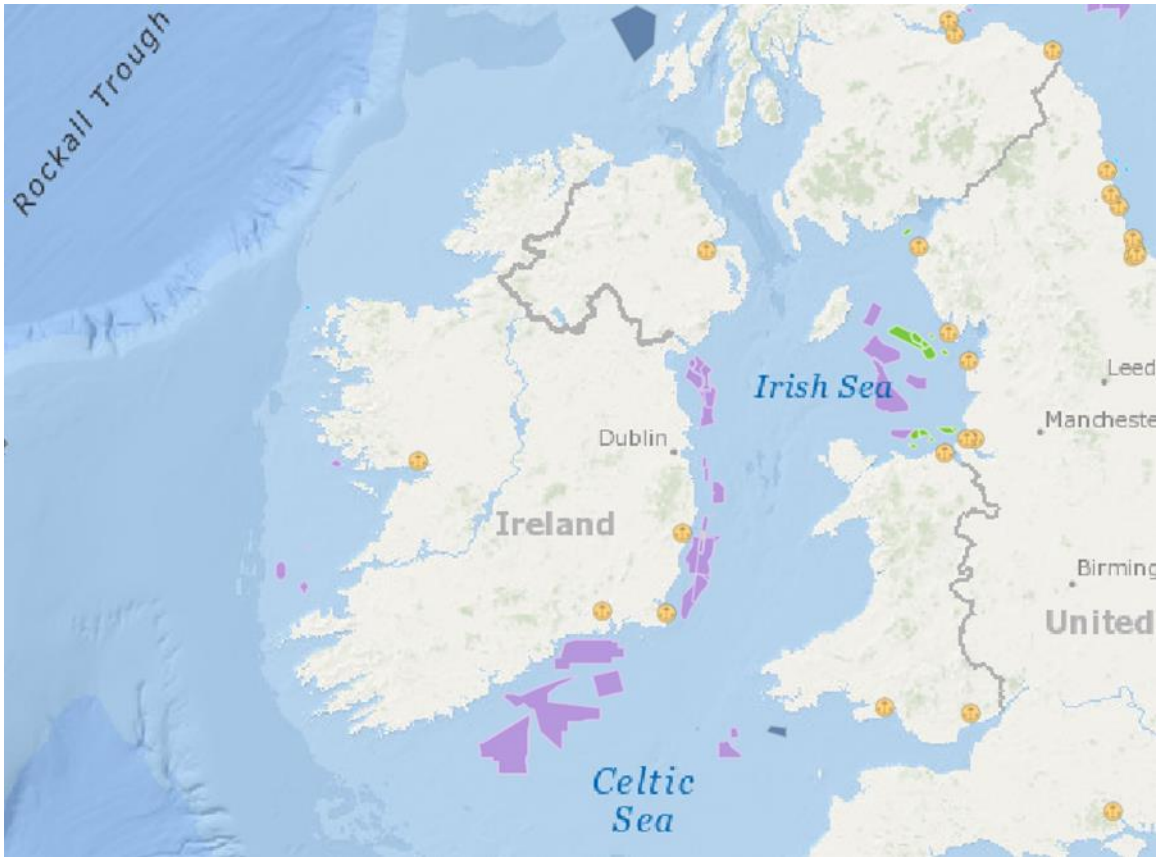
In parallel to the need for the expansion of Irelands MPA network the Irish government is planning the roll out of offshore wind energy in the Irish Sea at significant scale (ie 3.5GW by 2030) to support national, EU, and global policies to cut greenhouse gas emissions. According to publicly available information there are 31 offshore wind farm projects at some stage of development in Ireland. With a particularly high number of projects being proposed on sandbank habitat within the Irish and Celtic Seas.

While we recognise the need to decarbonise Irelands energy sector, we have concerns about the potential negative environmental impacts that could occur if offshore wind energy is developed in the environmentally sensitive sites. BirdWatch Ireland are particularly concerned about the direct, indirect and cumulative negative impacts that offshore wind energy developments could have on seabirds and broader marine biodiversity. Our concerns include increased noise levels, risk of collisions, barrier effects, changes to benthic and pelagic habitats, alterations to food webs, and pollution from increased vessel traffic or release of contaminants from seabed sediments[41]. These risks are heightened by the current lack of scientific data to inform environmental impact assessments and appropriate assessments. We are concerned that the government seems to be prioritising the roll out of offshore renewables in advance of the designation of MPAs. This approach could mean that sensitive, or nationally or internationally important sites that should be designated as MPAs could be destroyed or degraded by these major infrastructure projects. This approach is clearly not in line with the precautionary approach or numerous elements of Irish and EU environmental law. The approach also risks significantly damaging the publics perception of the sector.

[39] European Commission (2018) "Managing Natura 2000 sites The provisions of Article 6 of the 'Habitats' Directive 92/43/EEC" https://ec.europa.eu/environment/nature/natura2000/management/docs/art6/Provisions_Art_._nov_2018_endocx.pdf

[40] Marine Institute (2020) Perceptions of the Irish public on priorities for the protection and sustainable use of the ocean https://bit.ly/3laeCOJ

[41] Bailey, H., Brookes, K. L., & Thompson, P. M. (2014). Assessing environmental impacts of offshore wind farms: lessons learned and recommendations for the future. Aquatic biosystems, 10(1), 1-13.



Source: Global Offshore Renewable Map. https://www.4coffshore.com/offshorewind/

We recognise that renewable energy infrastructure planned and executed in the right way can contribute to both our climate and biodiversity crisis. For example, wind turbine foundations may act as artificial reefs, benefiting a wide variety of marine species. The lower fishing intensity within sites could also create corridors and steppingstone habitat helping to increase the connectivity and resilience of the MPA network. For these benefits to be realised the government must implement sustainable marine spatial planning, ensuring that MPAs are designated in advance of offshore renewable energy developments. Infrastructure should be designed to avoid conflicts with biodiversity and enhance the overall MPA network and the functioning of the broader marine ecosystem. For this to happen significant gaps in the distribution and behaviour of Irish seabirds and other habitat and species need to be addressed.

Seabird monitoring and research needs for the Irish East coast colonies

The Irish Sea currently supports large populations of 15 breeding seabird species who breed on cliffs and islands. For some species (e.g. Roseate Tern), internationally important numbers are present. Three of the 15 species are red-listed birds of conservation concern (Kittiwake, Puffin and Razorbill), while eleven are amber-listed and only one is on the green list.

BirdWatch Ireland has undertaken targeted survey and monitoring and conservation actions supported by the State and other funders for a number of years at several seabird colonies and with significant success (e.g. Roseate tern conservation on Rockabill Island, Dalkey Island Terns, Little Terns at Kilcoole). The breeding seabirds of eastern coastal counties of Ireland are well monitored, in terms of knowledge of colony sizes and population trends. This is particularly so for the four ground-

nesting species of tern (Roseate, Common, Arctic and Little) and virtually all colonies are actively wardened or intensively monitored.

There are several gaps in the knowledge on how seabirds use the Irish Sea that need to be filled so that the effects of any individual wind farms or the cumulative effects of proposed clusters of wind farms can be better understood and also to inform impact assessment. This work also needs to be undertaken to facilitate the completion of Ireland's MPA network and its management. In addition, the manner in which UK seabirds use the Irish Sea is also an area that needs better understanding if we are to ensure that wider international population effects are minimised and transboundary assessment can be undertaken.

The following is an outline of gaps in the knowledge that must be filled as soon as possible.

1. Data of breeding success so that changes in colony size can be understood

The cliff-nesting seabirds are counted regularly, especially on the north Dublin islands of Lambay and Ireland's Eye. However, breeding success (productivity) is rarely monitored for these species with the exception of Kittiwakes nesting on Rockabill and perhaps Wicklow Head. Systematic work on the breeding productivity of most cliff-nesting species was undertaken in 2007 (Trewby et al. 2007)[42] but this has not been repeated except for some species on Lambay (2009-2011, FAME Project) and Ireland's Eye (2015-2017). This gap needs to be rectified immediately so that changes in colony size can be 'explained' by productivity in previous years.

Solution: A single researcher, employed for 5 months, April to August, is required and would be able to deliver a productivity monitoring programme across Dublin and Wicklow colonies covering ten important species where no (or very little) coverage is achieved at the moment (see Fig 1 below).

Species	Easiest* colony to monitor	Reserve colony/second site
Fulmar	Ireland's Eye	Bray Head, or Shenick Island
Gannet	Ireland's Eye	Lambay
Cormorant	Ireland's Eye	Bray Head
Shag	Ireland's Eye	Bray Head
Lesser Black-backed Gull	Dalkey Island	Lambay
Herring Gull	Dalkey Island	Ireland's Eye
Great Black-backed Gull	Dalkey Island	Ireland's Eye
Kittiwake	Ireland's Eye	Bray Head
Common Guillemot	Ireland's Eye	Lambay
Razorbill	Ireland's Eye	Lambay
[Puffin#]	Ireland's Eye	Lambay

Fig 1: List of seabird colonies on
* easily accessible/cheap/safe
# tricky but worth pursuing given charismatic species

[42] Trewby, M., Burt, E. & Newton, S. 2007. Seabird Productivity at East and South Coast Colonies in Ireland in 2007. Report prepared for National Parks & Wildlife Service by BirdWatch Ireland, Newtownmountkennedy, Co. Wicklow. 87pp.

2. Lack of data on prey species of seabirds

Seabirds are significant apex predators in the Irish Sea ecosystem; their diet comprises principally fish and to a lesser extent shellfish. At one level there can be the perception that they are competing with human fisheries, but it is likely that many of the species taken by seabirds are not commercially targeted at the present time. Terns and Kittiwakes (Chivers et.al 2012)[43], for example, mostly consume small sandeels and 'clupeids' (sprat and small herring). For virtually all other seabirds in the Irish Sea there is a lack of knowledge of their diet (prey eaten by adults and delivered to chicks) which impacts our knowledge of how the birds move around the Irish Sea.

Diet can be monitored visually for species that carry fish in their bills back to chicks such as the auks: Guillemot, Razorbill, Black Guillemot and Puffin, but is difficult for other species where parents carry food back in their 'stomachs' and regurgitate this back at the nest site for the chicks to eat. Sometimes when chicks are handled by scientists and ringers they may regurgitate their last meal and this can be analyses to identify the species of fish involved (e.g. Kittiwakes, large gulls, Cormorants).

Solution: A field worker, perhaps a Masters or PhD student, could gather observational data on the auks and work with ringers to collect regurgitates and pellets (coughed up indigestible hard parts) from other species. Such samples can be analysed in a college. The State's Marine Institute (MI) does not routinely monitor sandeels (estimate stock sizes, identify spawning grounds) whereas it does cover sprat and herring in the Celtic Sea. BirdWatch Ireland staff would welcome the opportunity to discuss better monitoring of relevant seabird prey species with MI scientists given they are likely to be important in the diet of larger, commercial fish species.

3. Lack of data on seabird foraging areas

Knowledge of seabird foraging areas during the breeding period is critical in order to minimise impacts to foraging habitat loss and assessment of impacts of potential displacement of seabirds from foraging areas, change in foraging resource (e.g. fish aggregation effects) and displaced fishing effort with implications for foraging resources.

Foraging areas of breeding seabirds are identified mostly using electronic tag deployment (GPS tags, time-depth recorders etc). These require a reasonable budget and a team of two or three specialist staff to fit tags and retrieve data over a period of about a month (in June and July). BirdWatch Ireland have relevant expertise in this field but lack the budget to purchase tags and release staff time to undertake the work. Previously we have successfully tagged all species with the exception of Fulmar and Cormorant. An alternative methodology of locating foraging areas is to follow adults directly from colony to feeding patch in a fast boat (RIB), a technique known as visual tracking. It is especially appropriate for small species such as terns. The method has been used in a study of Roseate Terns at Rockabill (see Perrow et al. 2019)[44] and Little Terns in the North Sea.

Solution: Significant funding is needed for a collaborative effort with a relevant Irish University or IT.

[43] Chivers, L.S., Lundy, M.G., Colhoun, K., Newton, S. & Reid, N. 2012. Diet of Black-legged Kittiwakes (Rissa tridactyla) feeding chicks at two Irish colonies highlights the importance of clupeids. Bird Study. DOI: 10.1080/00063657.2012.707638

[44] Perrow, M., Harwood, A., Berridge, R., Burke, B., Newton, S. & Piec, D. 2019. Foraging and chick-provisioning ecology of Roseate Terns breeding at Rockabill, in Ireland. British Birds 112: 496-516.
Redfern, C.P., Kinchin-Smith, D., Newton, S., Morrison, P., Bolton, M. & Piec, D. 2020. Upwelling systems in the migration ecology of Roseate Terns (Sterna dougallii) breeding in northwest Europe. Ibis. DOI: 10.111/ibi.12915

4. Lack of data on seabird wintering areas

Wintering areas of seabirds breeding in the Irish Sea need to be determined in order to understand how birds use the area and to assist in the determination of changes in colony size. The questions that need to be answered are whether they use their summer/breeding season range in the winter, or are conspecifics present in winter from more northerly breeding locations. This information can be gathered using archival geolocator tags ('GLS') fitted to leg rings. Such work has been initiated on Kittiwakes breeding on Rockabill as part of the Norwegian led, multi-agency, Seatrack project. An (Irish) example of the application of this technique to a strictly migratory seabird, the Roseate Tern, is published in Redfern et al. (2020). Such tags should be deployed on many more species to assess wintering areas, migratory corridors and the proportion of the year they spend locally in the Irish Sea. These tags are relatively cheap (ca. €100 per unit) and easy to fit to leg rings, but birds need to be recaught one year later to retrieve the data.

Solution: Funding required for 20 tags placed on 10 different species, plus staff time for a field worker to coordinate the project, catch birds and retrieve and analyse data over two summers.

5a. Lack of data to assess cumulative impacts

In order to contribute to the understanding of how seabirds use Irish waters the government has commissioned and published findings from the ObSERVE aerial survey programme. In addition, individual offshore wind energy companies have undertaken substantial seabird survey work in the Irish Sea to support potential future wind farm operations. In order to provide greater understanding of how seabirds use the Irish Sea there is a need to collate and 'pool' such datasets and use it in a spatial modelling exercise to determine overall spatial and seasonal patterns and look for other knowledge gaps. Also, it would be very useful to compare this with the ObSERVE dataset.

Solution: Wind farm developers undertake to share data and support a project to analyse all the data so that modelling can be done to provide information which will aid cumulative impact assessment.

5b. Seabird Sensitivity mapping

BirdWatch Ireland has published a feasibility study on marine renewables sensitivity mapping. Development of the full marine renewables sensitive mapping study using ObSERVE data and data from windfarm developers would be a valuable exercise to have a more robust planning tool to support truly sustainable deployment of renewables in the Irish Sea and in all Irish waters[45].

Solution: Funding required for a GIS expert using the data generated by the modelling exercise in point 5 to develop a seabird sensitivity mapping tool.

Timelines

The Irish Programme for Government (PFG)[46] states that the government support the principles and ambition of the EU Biodiversity Strategy and will develop comprehensive legislation for the identification, designation, and management of Marine Protected Areas (MPAs) in Irish territorial waters. However, the commitments and timelines associated with the EU Biodiversity Strategy

[45] Burke, B. 2018. Trialling a Seabird Sensitivity Mapping Tool for Marine Renewable Energy Developments in Ireland. BirdWatch Ireland, Kilcoole, Co. Wicklow.

[46] Irish Government (2020) Programme for Government: Our Shared Future https://www.gov.ie/en/publication/7e05d-programme-for-government-our-shared-future/

targets in the PFG are weak. The government have only committed to “realise our outstanding target of 10% under the Marine Strategy Framework Directive as soon as is practical and aim for 30% of marine protected areas by 2030.” Given that Ireland has missed the 10% MPA target by 2020 it is important that the government adopts a clear and ambitious timeline to achieve this target as soon as possible placing Ireland on a trajectory to achieve at least 30% marine protected areas coverage by 2030. The current targets of “as soon as is practical” and “aim for” are weak. The government’s ambition needs to be brought in line with our legal obligations and the urgency of the biodiversity and climate crisis. While we respect that the necessary consultation and data collection will take time, we have seen far more urgency in the way the government has fast tracked legislation to facilitate off-shore renewable energy development. This is an area that also requires consultation and data collection. It therefore suggests to us that political will is a contribution factor to the slow pace of progress in marine conservation.

We suggest that a prioritisation exercise should be carried out to identify sites for designation as part of an initial tranche aimed at achieving the outstanding 10% target. This should include the completion of Natura 2000 network of marine SACs and SPAs. The legal framework to designate these sites is already in place, the qualifying interests and the gaps in the network are known. There should therefore be less constraints on the identification and designation of theses MPAs.

Much fewer commercial activities occur offshore relative to inshore. The levels of consultation involved in designating some sites in the offshore and deep sea should therefore be much lower. We understand that the Marine Institute and ICES already have data on important deep sea and offshore sites, including the locations of vulnerable marine ecosystems, important breeding areas for some deep-sea species and there is international data on the locations of important offshore seabird sites. Given the lower number of active stakeholders actively involved in the deep-sea, the continental shelf and beyond it would make sense to set ambitious targets for designating some of these sites.

Likewise, some sites should be prioritised for designation based on a risks-based assessment. This would include important seabird foraging habitat and sandbank habitat in the Irish and Celtic Seas which are at risk from off-shore renewable development. MPAs should be designated in advance of any regional development of marine renewables. This is in line with the precautionary approach, and would ultimately enhance the sustainability and public perception of the renewables sector. Other sites that should be prioritised for designation based on a risks-based assessment are sites that are known to be important to threatened or endangered species. This should include areas which are known to support endangered and critically endangered elasmobranchs.

Conservation projects such as the Burren LIFE agri-environmental scheme have spawned a multitude of results-based schemes and have influenced agri-environmental schemes across Ireland and the EU. This highlights the power that a positive example can play in conservation. We believe that similar pilot projects should be established and used as a blue-print for public engagement, designation and management moving forward.

The need for a new dedicated piece of MPA legislation is not a constraint on the government’s ability to radically improve the protection afforded to our existing MPAs within the Natura 2000 network. While the Habitats and Birds Directives have many strengths, one of their weaknesses is their emphasis on specific qualifying interests often at the expense of non-annex species and a broader ecosystem / whole site approach to conservation. The incorporation of the Natura 2000 sites within the broader MPA network implies that there needs to be a review of the conservation objectives and management plans of these sites so that they can achieve the broader ecosystem

objectives of the MSFD and the EU Biodiversity Strategy. Natura 2000 sites should adopt a whole site approach to conservation which should include affording protection to habitats and species that are not on the qualifying list of interests. The government should adopt a robust policy to tackle destructive fishing practices within the Natura 2000 network. The government should ban all destructive fishing gears in Natura 2000 sites using Article 11 of the Common Fisheries Policy. MPAs which are identified for future designation under the new legislation should be afforded interim protection in the same way that candidate SACs and proposed SPAs are. The National Marine Planning Framework does not offer these necessary interim protections.

Budget

We agree with the reports recommendation that "appropriate resources and funding must be allocated to plan, implement, manage, monitor, and review the MPA network." Significant investment is needed to ensure that the MPA network is underpinned by the best available science and that sites are protected and managed in a way that ensure best practice in conservation and stakeholder engagement. The European Maritime Fisheries and Aquaculture Fund (EMFAF) is the structural fund under which actions must be funded between 2021-27 to improve the management of Ireland's marine resources and conservation of our marine habitats and species. According to the regulation[47] underpinning the EMFAF the fund is the financing mechanism that is supposed to deliver all the European Union's objectives in relation to the conservation and sustainable management of our marine environment. The Irish authorities are obligated to design an EMFAF programme that can implement our obligations under the Common Fisheries Policy (1380/2013)[48] Marine Strategy Framework Directive (Directive 2008/56/EC)[49], the Birds Directives (Directive 2009/147/EC)[50] and Habitats Directive (Council Directive 92 /43 /EEC)[51] as well goal fourteen of the United Nations Sustainable Development Goals and sustainable marine spatial planning. Under the regulation the EMFAF is obliged to ensure the "*protection and restoration of marine biodiversity and ecosystems."* This includes the need to "*support actions to achieve or maintain a good environmental status in the marine environment as set out in the Maritime Strategy Framework Directive, for the implementation of spatial protection measures established pursuant to that Directive, for the management, restoration and monitoring of NATURA 2000 areas and for the protection of species under the 'Habitats' and 'Birds' Directives*." The EMFAF must also foster "*sustainable fisheries and the conservation of marine biological resources*."

Irelands National Biodiversity Action Plan[52] has identified the EMFAF as the appropriate financing mechanism to deliver measures such as investments in the protection and restoration of marine flora and fauna, improvements to the selectivity of fishing gear, and schemes to improve the environmental performance of aquaculture. The plan identifies the appropriate Departments whose responsibility it is to deliver these obligations and commits to "*the protection of our marine ecosystems and compliance with national and international environmental legislation and full*

[47] Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on the European Maritime and Fisheries Fund and repealing Regulation (EU) No 508/2014 of the European Parliament and of the Council https://ec.europa.eu/commission/sites/beta-political/files/budget-may2018-maritime-fisheries-fund-regulation_en.pdf
[48] REGULATION (EU) No 1380/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:354:0022:0061:EN:PDF
[49] Marine Strategy Framework Directive (Directive 2008/56/EC) https://eur-lex.europa.eu/legal content/EN/TXT/PDF/?uri=CELEX:32008L0056&from=EN
[50] Birds Directive https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009L0147&from=EN
[51] Habitats Directive http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31992L0043
[52] DAHG (2013) National Biodiversity Action Plan 2014-2021 https://www.npws.ie/sites/default/files/publications/pdf/National%20Biodiversity%20Action%20Plan%20English.pdf

implementation of the MSFD, WFD, Habitats and Birds Directives and revised CFP will help achieve Ireland's Vision for Biodiversity (i.e. that Ireland's marine biodiversity and ecosystems are conserved and restored, delivering benefits essential for all sectors of society). The development and implementation of effective Marine Spatial Planning for Ireland's coastal zone and EEZ waters will assist in the identification and improved protection of threatened habitats and species in accordance with the EU Maritime Spatial Planning Directive (2014/89/ EU) and MSFD."

Past Irish Seafood Development programmes have invested heavily in the expansion and intensification of fishing activities, the development of processing infrastructure and in the opening of new export markets. Actions supporting the conservation and sustainable management of our marine environment have been poorly funded in past programmes and what has been funded has often not delivered tangible environmental benefits through the implementation of concrete changes in policies and practices. The previous programme funded projects which have known negative impacts on the environment including kelp harvesting and the expansion of aquaculture in Natura 2000 sites.

We are deeply concerned that we can see no evidence in the most recent drafts of Irelands operational programme that the level of investment needed to achieve at least 30% MPA coverage by 2030. The next programme will run until 2027 by which point the Ireland should be well on our way to the 30% target. The government must work across departments to ensure that Irelands operational programme places the EU's Green Deal, the EU Biodiversity Strategy and the Farm to Fork strategy at its heart.

The Marine Biodiversity Scheme as described by DAFM - *Supports compliance of fisheries and aquaculture with Habitats, Birds and Marine Strategy Framework Directives through acquisition and analysis of data on fisheries and aquaculture and conduct of Habitats Directive assessments.* The Marine Biodiversity Scheme should be focused on funding action that deliver concrete conservation measures to protect and restore marine habitats and species, including the designation and management of MPAs. This scheme is managed by the Marine Institute, and we would question whether they are the appropriate body to lead on the implementation of many of the actions under the Marine Biodiversity Scheme? The Marine Institute are excellent at what they do but their main objectives are commercial fisheries management and data collection, and this comes across in the kinds of projects that have been funded in the past and the level of ambition within those projects. We believe that a properly funded and empowered National Parks and Wildlife Service should take a leadership role when it comes to MPAs and that this would necessitate that the control of the Marine Biodiversity Scheme is transferred across to their department.

Governance

Marine governance in Ireland is highly fragmented. Many roles and responsibilities are scattered across various departments and there isn't always good communication or policy coherence between those departments. In our experience this has resulted in DAFM, Bord Iascaigh Mhara and the Marine Institute dominating the marine policy landscape. A small number of influential voices within the fisheries, aquaculture and processing sectors have had a disproportionate influence over the way that society interacts with the marine environment. We would like to see the government place a greater emphasis on marine conservation and ecosystem-based resource management. To facilitate this, we believe that the National Parks and Wildlife Service and the Environmental Protection Agency should be given a greater role in developing our national marine policies. We believe that the Marine Institute should be given greater independence from DAFM. Funding for the projects relating to marine conservation and data collection for example could be allocated to the

Marine Institute from the National Parks and Wildlife Service rather than DAFM. The NPWS should have a greater role in management and monitoring of the MPA network. it is important that we expand, consolidate and empower the ecological expertise within the government.

Systematic Conservation Planning

In principle we support the recommendation that a Systematic Conservation Planning (SCP) approach should be followed for planning, implementation and management of the expanded network, with a provision also for proposal of individual site-based MPAs. SCP could help to identifying where important areas for biodiversity are and how conservation goals might be achieved. SCP is traditionally composed of six different stages: collection of data, identification of conservation goals, evaluation of the existing protected area network, design of expansions, implementation of conservation action, and long-term maintenance of biodiversity in the network. Kukkala& Moilanen (2013)[53] have identified 12 core concepts of SCP that could be adopted namely: adequacy, complementarity, comprehensiveness, effectiveness, efficiency, flexibility, irreplaceability, replacement cost, representation, representativeness, threat, and vulnerability.

SCP is a useful tool however there is obviously a high-level of subjectivity involved in identifying priorities, trade-offs and data sets. Therefore, the overall process requires in depth consultation. We would request that NGO's such as BirdWatch Ireland are engaged during the SCP process.

[53] Kukkala, A. S., & Moilanen, A. (2013). Core concepts of spatial prioritisation in systematic conservation planning. Biological Reviews, 88(2), 443-464.