Public Consultation on Ireland's Marine Strategy Framework Directive Marine Strategy Part 1: Assessment (Article 8), Determination of Good Environmental Status (Article 9) and Environmental Targets (Article 10)

Submission by the Sustainable Water Network

Contact: Emma Armshaw, Marine & Coastal Policy Officer

9 Upper Mount Street, Dublin 2, D02 K659, Ireland

Phone +353 (0)1 642 5583 ¦ Email info@swanireland.ie

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1. SWAN and Our Submission

The Sustainable Water Network (SWAN) is an umbrella network of 25 of Ireland's leading environmental NGOs, national and regional, working together to protect and enhance Ireland's water environment. Through coordinating the work of the SWAN office with that of our members, SWAN seeks to influence water and water-related policy so as to secure maximum protection for Ireland's aquatic resources, through participation in the implementation of the Marine Strategy Framework Directive (MSFD), the Water Framework Directive (WFD) and other water-related policy and legislation. We are a founding partner of Fair Seas and a member of Seas at Risk and the Irish Sea Network. SWAN's Marine Working Group members are listed in Appendix I.

SWAN welcomes the opportunity to respond to this public consultation on the draft update to part 1 of Ireland's Marine Strategy: Assessment (Article 8), Determination of Good Environmental Status (GES) (Article 9) and Environmental Targets (Article 10) as part of the EU Marine Strategy Framework Directive. SWAN's priorities are ensuring compliance with the MSFD, by achieving and maintaining Good Environmental Status in the marine environment. As such, our response will focus less on social and economic analysis of the uses of the marine environment.

SWAN notes the report is structured around the DAPSIR (Drivers, Activities, Pressures, State, Impact Response) framework. This is a positive development, as it demonstrates interconnections between human activity and the environment more effectively. Our submission over the following pages will follow the order of the report, as organised by "Pressures and Impacts on the Marine Environment" and "State of the Marine Environment," including the addition of a "Climate Change" heading, though it is not included as a separate and distinct descriptor under the Directive. Within the below submission following the report's sections, we respond to each of the 11 descriptors and their GES:

Table 1: Descriptors' Good Environmental Status (GES) in 2024

Descriptor	Common Name	Good Environmental Status
D1	Biodiversity	Some criteria compatible with GES
D2	Non-indigenous species (NIS)	Compatible with GES
D3	Commercial fish and shellfish	Some elements compatible with GES
D4	Food webs	Compatibility with GES not known

D5	Eutrophication	Compatible with GES
D6	Sea-floor integrity	Some criteria compatible with GES
D7	Hydrographical conditions	Compatible with GES
D8	Contaminants	Compatible with GES
D9	Contaminants in seafood	Compatible with GES
D10	Marine Litter	Some criteria compatible with GES
D11	Energy, including underwater noise	Compatible with GES

We thank the Marine Spatial Planning team in the Department of Energy, Climate and Communications (DECC) for inviting us to participate in the MSP Advisory Group. We would like to take this opportunity to acknowledge the hard work of all the members of the Department of Housing, Local Government and Heritage (DHLGH) in producing this report. We look forward to sight of the Marine Strategy Part 2 with revision of Ireland's Monitoring Programmes (Article 11) in 2026 and Part 3 updating Ireland's Programme of Measures (Article 13) in 2028.

2. General Comments

In cycle 2 of the MSFD, Ireland's Department of Housing, Planning and Local Government published the "Public Consultation on the Marine Strategy Framework Directive 2008/56/EC" in 2019. This report was organised by the 11 MSFD descriptors but found that only five of the 11 had achieved or maintained GES, with the other six either unknown or only partially achieved. SWAN submitted a response to this in February 2020, raising the difficulties of ensuring the impacts of all pressures are accurately considered, particularly when fragmented across multiple descriptors.

Now at the start of cycle 3 in 2024, our overarching responses to the 2024 report on Articles 8, 9 and 10 are below, before pressure/impact-specific responses in Section 3.

Data

SWAN's main criticism of this report is the data deficiency that prevents many indicators from being able to be fully assessed for GES. However, we acknowledge that the report is an improvement on previous cycles, containing "the most comprehensive and up to date assessment of the status of Ireland's marine environment… and a revised set of environmental targets for each of the 11 qualitative descriptors of the Directive," utilising data from 20 monitoring programmes and 36 surveys or campaigns. We support the revisions and additions to the first MSFD cycle to more accurately assess Ireland's marine species and habitats, and the main associated pressures. While we recognise the improvement from the previous cycle, overall, data deficiency continues to be a cause for concern, with several descriptors unable to be fully and accurately assessed. Increased resources must be made available both for data collection and monitoring at sea, such as by putting cameras on fishing vessels. Utilising reporting from citizen science and environmental NGOs in future assessment and monitoring can increase available data. We reiterate our call from SWAN's 2020 response to utilise Coastwatch survey data for D10 Litter and Irish Whale and Dolphin Group's cetacean records for D1 Biodiversity and D11 Underwater Noise.

SWAN strongly recommends taking the precautionary approach in instances where data is not available.

We welcome the use of Marine Reporting Units in this report. By assessing Ireland's maritime area in 25 sections, rather than just one as in the previous cycles, a more accurate assessment can be made. This was a necessary improvement to the MSFD.

Water Framework Directive

Ireland is obligated to conduct assessments of its waters by European legal frameworks including the MSFD, the Water Framework Directive (WFD), the Nature directives and the Bathing Water Directive, reporting to the European Commission. The WFD requires Good Ecological Status for all rivers, lakes and transitional coastal waters, applying to

coastal waters out to one nautical mile (*European Environment Agency*), with the MSFD covering marine waters beyond this, aiming to reach Good Environmental Status, with some overlap in coastal waters. The MSFD and WFD do not replicate each other, but should build upon each other and fill gaps.

> *There is overlap, but MSFD only applies for the practical aspects of environmental status that are not already addressed through the WFD. The scope of MSFD is broader than that of the WFD, covering a greater range of biodiversity components and indicators such as marine mammals and seabirds. In other words, where both directives apply in coastal waters, the MSFD covers those aspects of Good Environmental Status not covered by the WFD such as litter, noise and marine mammals.* ***The MSFD should therefore make as much use as possible of existing measures and agreements within the WFD because many of the measures to meet the objectives of the WFD will also deliver MSFD targets****. This is of particular relevance to the contaminants descriptor where source control in riverine and coastal waters may have significant positive consequences for marine waters. The implications of the extensive geographical overlap with the WFD are also relevant for several other descriptors (e.g. biodiversity, eutrophication, hydrographical conditions)* (European Boating Association).

Clean waters- inland and offshore- require WFD and MSFD linkage, and consideration of both must form part of Environmental Impact Assessments for large projects and processes of monitoring and measures. SWAN calls for an ecosystem-based approach to planning, in which the aims of the WFD complement the MSFD; when inland, transitional and coastal waters reach Good Ecological Status, cleaner, healthier water is entering the marine environment. SWAN demands that monitoring and measures relating to coastal waters align with the requirements of both the WFD and MSFD, amongst the other obligations.

Regional coordination

We note the common use of data collated under existing European policies and directives, including the WFD, Common Fisheries Policy (CFP) and Nature directives and monitoring methodologies agreed at a Regional Seas Convention level (ie, OSPAR). The report notes that this ensures *"the data collected allows for a common assessment of pressures or other features of the North-East Atlantic. In other cases, assessment methodologies have been inter-calibrated (e.g. under the WFD), to ensure the comparability of assessment methods and ecological status developed by individual EU Member States."* The inclusion of this regional coordination is a positive development in this cycle of the MSFD, and demonstrates the need for expansion of transboundary management, monitoring and data-sharing. We recognise the benefits of this approach, allowing for data to be comparable at EU-level and call for a continuation in this use of common assessment. However, a cautious approach must be taken in comparing both heavily exploited regions of European waters and areas which remain pristine. In taking an ecosystems-based approach, areas which are well beyond the baseline requirements of GES should be preserved as such.

Nature Restoration Law

Where the MSFD focuses on reaching GES for marine waters, the Nature Restoration Law (NRL) complements this by focussing on specific marine habitats and species, in coordination with terrestrial and freshwater ecosystems. The NRL goes beyond the scope of the MSFD by targeting specific habitats for restoration, with its targets contributing to MSFD GES objectives "*by reducing negative impacts of fishing activities on marine ecosystems, restoring fish spawning and nursery areas, restoring seagrass meadows, and more. The NRL targets reinforce the MSFD framework and put a stronger focus on the maintenance of ecological functions*" (Institute for European Environmental Policy). We refer you to the response submitted by SWAN member the Irish Wildlife Trust for more specifics on how the NRL links to individual indicators.

Marine Protected Areas (MPAs)

In December 2021, the DHLGH MSFD report recognised that "*MPAs can also help to reduce the effects of climate change and ocean acidification by ensuring that marine ecosystems are biologically diverse, healthy and resilient, acting as natural carbon capture and storage systems, and by providing protection from the effects of increased storm events in coastal areas*" (Marine Strategy Framework Directive 2008/56/EC Article 17 update to Ireland's Marine Strategy Part 2: Monitoring Programme (Article 11)). These aims are directly in line with the MSFD, with additional recognition that the "*marine monitoring programmes described in this review are expected to play a significant role in providing scientific information and hard data that can be used in the MPA process*." The following year, the Marine Strategy Framework Directive 2008/56/EC Article 17 update to Ireland's Marine Strategy Part 3: Programme of Measures (Article 13) published in December 2022, stated "*a final [MPA] Bill is expected to be approved late 2022/early 2023*," with 'M230: Marine Protected Areas' specifically committing to "***By 2023**, Ireland will develop stand-alone legislation to deliver the designation and management of an expanded network of marine protected areas; thereby supporting the achievement and maintenance of good environmental status*." As of September 2023, the MPA legislation has still not been published. SWAN reiterates the calls of Fair Seas, of which we are a partner, for the urgent publication of the MPA legislation, to accelerate the designation of MPAs (including 10% strictly protected) and effective management plans to ensure MPAs are supporting the reaching of GES under the MSFD.

Next steps

Ireland's marine strategy must continue to recognise that "a holistic picture regarding the marine ecosystem" is vital, both for the ongoing work of the MSFD and related policies.

Given the resources put into this report, we must see the findings integrated into future marine spatial planning and decision-making, ensuring that

1. where data is currently lacking so that GES cannot be assessed, measures are taken to ensure assessments can be made in the future ;
2. where GES indicators *have not* been met, urgent action is taken to reach GES by the next cycle ;
3. for those descriptors where GES *has been* met, this must be maintained and improved. For instance, the report acknowledges that "many stocks of commercially exploited fish and shellfish are not harvested sustainably," a concern that Irish ministers must urgently address this at the European level.

3. PRESSURES AND IMPACTS ON THE MARINE ENVIRONMENT (ART. 8.(1B))

In each of the below sub-headings, the highlighted colour indicates whether GES has been achieved (green), not achieved (red), partially achieved (yellow), or is unknown (grey). The italicised lines are the Department's overview of descriptors.

3.1 Incidental Bycatch [part of Descriptor 1, Biodiversity]

"*GES has not been achieved for almost 50 % of species fully assessed for incidental bycatch in Ireland's marine environment*."

With 50 species assessed for incidental bycatch, GES was only achieved for 26 (one mammal species, 24 species of fish and cephalopods and one seabird species). These are extremely concerning results, and we call for urgent measures at both national and EU levels to address the problem of bycatch in Irish waters. SWAN is also concerned at the data deficiency of this assessment, with the bycatch problem not fully understood for dozens of other marine species. Without knowledge of the full extent of bycatch, implementing appropriate measures will be challenging.

Amongst mammals, GES remains unknown for deep-diving toothed cetaceans, baleen whales and three species of small toothed cetaceans. For the two species of small toothed cetaceans that were assessed, GES was not achieved, showing a worrying picture of bycatch in Irish waters. Our member the Irish Whale & Dolphin Group is well-placed to provide vital information about cetaceans, though their sightings scheme is only referenced in regards to leatherback turtles.

Of particular concern, of the 24 species of seabirds which breed or overwinter in Ireland, only one seabird species was fully assessed for GES for bycatch. Only seven more species were considered, with no agreed thresholds against which to determine GES for other species. This is a glaring omission, and GES thresholds must be determined for Ireland's vulnerable seabirds. At a time when these species are under intense pressure, resources must be allocated to more widespread data acquisition. We strongly support and encourage the use of citizen science and utilising the expertise of eNGOs, such as SWAN member BirdWatch Ireland (BWI).

SWAN echoes BWI's response to this MSFD consultation. As set out in the objective of the EU Seabird Plan of Action (COM (2012) 665 final 2), Member States are to "minimise and, where possible, eliminate the incidental catches of seabirds," as this is coherent with achieving the objectives of the Birds Directive. It should be noted that there is extreme uncertainty in most cases around establishing the baseline population level of the species at risk, the natural mortality, and what additional level of mortality is attributable to bycatch. This is due to poor levels of monitoring and reporting, plus the intrinsic difficulty of properly estimating bycatch figures. Therefore, the use of a threshold value/level for the purpose of setting a minimum trigger for managing fishing activities is a hazardous approach as even attaining seabird mortality rates below the

threshold may fail to ensure long-term viability, despite best intentions. Moreover, to do so effectively sets an 'acceptable level' of bycatch and de facto a 'bycatch quota', which is contrary to the Birds Directive. The MSFD is clear that threshold values are to be used to assess whether a Member State has achieved GES. The criterion threshold value is not meant to be used to manage the impact of fisheries on seabirds. Therefore, we continue to uphold the position that measures are still required to minimise and where possible eliminate bycatch in accordance with other legislation and agreements, in particular the EU Birds Directive, EU Seabird Plan of Action, European Commission's Marine Action Plan (2023) and full implementation of the CFP.

SWAN also echoes the Irish Wildlife Trust's call for more concrete measures highlighting how Ireland plans to tackle bottom trawling, as this method has the highest level of bycatch out of any fishing method.

We do acknowledge the improvements since the 2020 assessment, particularly the use of regional assessments for some mammal species, rather than undertaking all assessments at national level only. We must see a further continuation of the improvements in data acquisition and availability, as seen since 2020. The increase in species (from four to 10) and groups (from two to four) assessed from 2020 to 2024 is a growth we should continue to see in future assessments.

3.2 Non-indigenous Species (NIS) [Descriptor 2]

"*GES has been achieved for non-indigenous species within Ireland's marine environment.*"

The primary criterion for this descriptor is the number of newly introduced species (NIS) within a six-year period. The report of a decline in NIS in the six-year period considered is welcome. However, this indicator does not account for the effects of invasive species which have already established themselves in Irish waters prior to the period considered. The data gap on the existing extent of NIS in Ireland means that neither Descriptor 2 criterion 2 (the abundance and spatial distribution of established NIS) nor criterion 3 (proportion of species or extent of habitat type adversely altered by NIS) are assessed, therefore SWAN does not consider that GES can be claimed for Descriptor 2. The data used for the assessment are from the period 2015-2020, so more up-to-date information is also needed.

Changing water temperatures will have consequences for Ireland's marine ecosystems. Lusitanian (warm-water affinity) marine species are shifting northwards, encroaching on native boreal (cold water) species and subsequently changing food webs and ecosystem functioning, the effects of which must be monitored as climate change affects our coasts and seas.

3.3 Seafloor Integrity [Descriptor 6]

"*GES for sea-floor integrity has been achieved in 74% of Ireland's assessment area,*

however, 15% remains either not assessed or unknown, while 11% is not in good status"

There are numerous factors which affect seafloor integrity. The assessment reports that 74% of Ireland's sea-floor integrity is at GES, however it is stated that regular bottom trawling happens in 40% of our Exclusive Economic Zone (EEZ). If we consider the EU ban on fishing below a depth of 800 meters, it means that practically all of our seafloor above 800 meters is regularly bottom trawled.

The report does not consider other forms of fishing which are highly destructive to seafloor integrity, such as scallop dredging and razor clam dredging. It also does not consider the grab sampling, pile boring or vibration testing which are being carried out in preparation for offshore renewable energy (ORE) projects, which can have an impact on seafloor integrity. Additionally, the dredging of ports, which is being escalated to accommodate ORE projects, and associated increase in dumping at sea, are not mentioned, other than: "*Sometimes what is classified as 'dumping' may be clean dredged sediments that are released in the water column and not directly on the seabed and so will not cause sealed loss*."

Ireland's Marine Strategy Part 1: Article 8, 9 and 10 report (including Annex I, II, III, and IV) fails to assess any impact to the seafloor integrity from finfish farms. The cumulative impact of aquaculture, destructive fisheries and the development of ORE should not be ignored.

3.4 Hydrographical Conditions [Descriptor 7]

"*GES has been achieved for hydrographical conditions in Ireland's marine environment*"

A major concern for SWAN in the assessment of this descriptor is "*the entire extent of sea-floor changes across Ireland's MSFD area due to these activities is approximately 0.6% and so hydrographical conditions will not change significantly.*" Given Ireland's vast maritime area, even 0.6% is over a quarter-million square kilometres, a not insignificant area.

The report states that "*the top activities in the Irish marine environment that may cause changes in hydrographical conditions, albeit at a local scale, are dumping of rocks or other material at sea, shellfish aquaculture, and marine cables;... infrastructure associated with renewable energy... can also cause changes in hydrographical conditions*." With an increase in ORE development expected in the coming years, measures must be implemented to ensure associated infrastructure and dredging do not reduce the GES achieved in this cycle. Ongoing monitoring must be required of aquaculture and ORE projects to ensure their activities do not cause adverse changes to hydrographical conditions. The hydrographical changes due to disturbance by bottom trawling must also not be minimised due to the percentage of Ireland's maritime area affected.

3.5 Eutrophication [Descriptor 5]

"*GES has been achieved for eutrophication within Ireland's marine environment*."

The report highlights Ireland's ongoing efforts and challenges in managing eutrophication. GES has largely been achieved for Descriptor 5, with over 98% of coastal and all offshore waters meeting the criteria. However, the report also indicates that areas with reduced flushing, particularly near agricultural runoff sources, show more pronounced eutrophication impacts. This is primarily driven by nitrogen and phosphorus pollution from agriculture, urban wastewater, and industrial activities. A number of key challenges persist, as identified by SWAN member organisation StreamScapes:

Agricultural Runoff as a Primary Nutrient Source:
The biggest contributor to eutrophication in Ireland is agricultural runoff, particularly from nitrogen and phosphorus-based fertilisers. Intensive farming practices lead to these nutrients being washed into rivers, estuaries and coastal waters, where they cause nutrient overload. This nutrient pollution drives the growth of algal blooms, which can deplete oxygen in the water and negatively affect marine life. Despite some progress in managing fertiliser use, there is still a significant gap in reducing agricultural impacts, especially in regions where agriculture is concentrated near sensitive marine ecosystems. Managing nutrient runoff remains challenging due to the economic importance of agriculture in Ireland and the difficulty of balancing environmental and economic priorities.

Regional Variations and Coastal Vulnerabilities:
Not all areas of Ireland's marine environment are equally affected by eutrophication. Coastal waters that are more sheltered, particularly estuaries and bays near high-intensity agricultural zones, are at greater risk due to limited water exchange. In these areas, nutrient inputs from nearby land sources accumulate, leading to more frequent and intense eutrophication-related impacts, such as algal blooms and hypoxia (low oxygen). Offshore waters are less affected, but the variability between regions highlights the need for targeted interventions. Coastal areas that are more vulnerable require specific monitoring and localised solutions, which adds complexity to nationwide policy measures.

Insufficient Wastewater Treatment in Communities:
One of the most pressing challenges in Ireland is the insufficient wastewater treatment infrastructure, particularly in rural and coastal communities. Many treatment plants lack the capacity or modern systems to adequately remove nutrients, especially nitrogen and phosphorus, before discharging effluent into nearby water bodies. During periods of heavy rainfall, untreated or partially treated sewage often overflows into rivers and coastal areas, significantly contributing to nutrient pollution and exacerbating eutrophication. The current infrastructure is outdated in many places, and without

significant upgrades, these issues will persist. Addressing this challenge is critical not only for reducing the nutrient load in sensitive ecosystems but also for ensuring compliance with EU water quality directives and protecting public health in areas that rely on clean water for tourism, recreation and fisheries.

Lack of Focus on Forever Chemicals in the MSFD:
Despite the growing global concern over Per- and Polyfluoroalkyl Substances (PFAS), also known as forever chemicals, the MSFD does not yet specifically address these persistent pollutants. PFAS are synthetic chemicals found in a wide range of industrial and consumer products and have been linked to serious health issues, including cancer and endocrine disruption. These chemicals are highly resistant to environmental degradation, meaning they can persist in the marine environment for decades, contaminating water, soil, and marine life. The absence of specific guidelines or strategies to manage PFAS in the MSFD poses a challenge for Ireland, as existing marine protection frameworks may not be equipped to handle the emerging threats posed by these substances. This gap in regulation complicates the efforts to address the cumulative impacts of pollutants on marine ecosystems.

Given these challenges, SWAN recommends action points for the next cycle of monitoring and Programme of Measures.

Enhanced Nutrient Management in Agriculture

- Stricter Fertiliser Application Limits: Introduce tighter guidelines on the use of nitrogen and phosphorus-based fertilisers, particularly in regions close to sensitive water bodies. This would reduce nutrient runoff and help mitigate eutrophication in vulnerable areas.
- Buffer Strips and Riparian Zones: Expand buffer zones between agricultural lands and waterways to naturally absorb excess nutrients before they enter rivers and estuaries.

Wastewater Treatment Upgrades

- Tertiary Treatment in All Facilities: Mandate the implementation of advanced nutrient removal systems in all wastewater treatment plants, especially in regions where eutrophication is a concern. This would significantly reduce nutrient discharges into marine environments.
- Monitoring and Infrastructure Improvement: Improve wastewater infrastructure to prevent overflows, particularly during periods of heavy rainfall, which often contribute to nutrient pollution in coastal areas.

Improved Monitoring and Data Collection

- Real-Time Monitoring Systems: Install real-time sensors in key water bodies to monitor nutrient levels and detect early signs of eutrophication, allowing for immediate corrective actions.
- Data Sharing Among Stakeholders: Promote better data sharing between governmental bodies, NGOs and researchers to ensure the optimal use of information for addressing both eutrophication and PFAS contamination.

Restoration and Mitigation Efforts

- Wetland Restoration and Creation: Support and fund the restoration and creation of wetlands and seagrass beds, which act as natural nutrient filters and help to prevent nutrient pollution in sensitive coastal areas.
- Algal Bloom Control Programmes: Implement proactive programmes to control harmful algal blooms through bioremediation and other non-invasive methods to safeguard marine ecosystems.

Ban on PFAS in Consumer Products and Comprehensive Monitoring and Cleanup

- Immediate Ban on Non-Essential PFAS Products: Enforce a nationwide ban on non-essential uses of PFAS in consumer products such as textiles, food packaging, and non-stick cookware to limit environmental contamination.
- Widespread Testing for PFAS Contamination: Initiate a national testing programme to monitor PFAS contamination in water sources, soil, and food. Focus on areas near industrial sites, military bases, airports, and landfills where contamination is more likely.
- Establish PFAS Cleanup Guidelines: Develop clear regulations for the remediation of PFAS-contaminated sites and require companies responsible for the contamination to cover the costs of cleanup efforts.

<u>Wastewater Treatment Issue</u>

Tertiary Treatment in All Facilities: Given the widespread challenges with insufficient wastewater treatment across many Irish communities, it is essential to mandate the installation of advanced nutrient removal systems in all treatment plants. In rural and coastal areas, where eutrophication is a significant concern, many treatment facilities are outdated or lack the capacity to handle modern nutrient loads. Upgrading these plants to include tertiary treatment—such as biological nutrient removal (BNR) or chemical phosphorus removal—would greatly reduce nitrogen and phosphorus discharges into Ireland's rivers, lakes and coastal waters. This is critical for curbing the development of algal blooms and preventing oxygen depletion, which can have devastating effects on marine ecosystems and local fisheries. Modernising these

systems would also ensure that growing populations and increased agricultural activity do not further strain Ireland's water resources.

Monitoring and Infrastructure Improvement: Many Irish communities face the issue of insufficient wastewater infrastructure, especially during periods of heavy rainfall, which often lead to the overflow of untreated or partially treated sewage into rivers and the sea. In coastal towns and rural areas, this problem is particularly acute, contributing to localised nutrient pollution and exacerbating eutrophication. To address this, it is essential to prioritise investment in upgrading infrastructure, including the separation of stormwater and sewage systems, increasing treatment capacity, and improving real-time monitoring of wastewater flows. By doing so, the government can reduce the frequency of overflow events, protect water quality in vulnerable coastal areas, and ensure compliance with EU directives on water treatment and marine health. This would not only improve environmental outcomes but also enhance public health and safety, particularly in areas that rely on clean water for tourism and recreation.

3.6 Contaminants [Descriptor 8]

"GES has been largely achieved for concentrations of contaminants in seawater, sediments and biota in Irish coastal and marine waters and with few exceptions concentrations are at levels that ensure the protection of the marine environment."

SWAN notes there is an acceptable GES definition, targets and thresholds. Overall, a good level of detail is presented in the report's summary. We have no major comments on Descriptor 8.

3.7 Contaminants in Seafood [Descriptor 9]

"*Contaminants in fish and other seafood for human consumption do not exceed levels established by Union legislation or other relevant standards*."

SWAN welcomes the assessment's findings of continued high-level compliance with this descriptor through several MSFD cycles, and urges vigilance to ensure GES is maintained at this level going forwards. While many of the other descriptors assessed suffered from data deficiency, contaminants in seafood is an area that was well-monitored with extensive data.

3.8 Marine Litter [Descriptor 10]

"*Good environmental status has not been achieved for beach litter in Ireland's marine environment. The status of macro litter on the seafloor remains unknown, while micro and macro litter floating and micro litter on the seafloor remain unassessed*."

SWAN's main concern with the beach litter aspect of this descriptor is the small sample used to make the assessment. Ireland's coastline is 7,524kms. The survey covers less than 0.5km of the entire coast; even discounting Northern Ireland, this is a tiny fraction and not representative of the coastline. Such a tiny sample is insufficient to properly

assess litter levels along the coastline as there are so many factors at play, such as the location (rural or built up), proximity of area to other activities (e.g. aquaculture, currents and accumulation points) or features such as legacy dumps. SWAN recommends that the number of sites be increased and the assessment broadened to include other available data from surveys such as the Coastwatch Autumn Survey, which has tracked coastal litter for over 30 years. These limited parameters do not allow for timely assessment of the impacts of new legislation, such as the Single Use Plastics Directive.

We support the use of citizen science, such as surveys conducted by Coastwatch, to supplement future assessments.

Micro litter is not being quantified at all, however, we know this is planned for in the next assessment.

Without assessing the full scale of the problem, marine litter cannot be properly managed. While there have been some improvements (and some items disappearing due to new legislation on banned items and Deposit Return Scheme), we know from Coastwatch surveys and clean-up groups the overall quantity of marine litter is still unacceptably high and further measures need to be taken.

SWAN supports our member Coastwatch's recommendations for more integration with other Departments that are supporting solutions and working to address litter such as DECC, MyWaste and Local Authorities, responsive legislation, and further bans (such as on plastic lids, vapes and single use cable ties).

3.9 Underwater Noise [Descriptor 11]

"*GES has been achieved for continuous and impulsive noise in Ireland's marine environment.*"

SWAN member the Irish Whale and Dolphin Group has focused their MSFD response on Descriptor 11 and we reiterate their points. Of greatest concern is the use of crude models and narrow metrics to determine GES. The descriptor appropriately includes two indicators of noise, impulsive noise (D11C1) and continuous noise (D11C2) and both are discussed below.

The assessment method for D11C1 is described as *"for impulsive noise the proportion of a habitat of a receptor organism exposed to noise above Level of Onset of Biologically Significant Effects (LOBE) is assessed on two timescales. Levels of noise must not exceed 20% of the area of the habitat of a receptor organism and the average daily exposure over a year must not exceed 10% of the habitat."* The metric for assessment of LOBE was 176dB, quoted as being the level for temporary threshold shift (TTS) onset in bottlenose dolphins according to National Marine Fisheries Service (NMFS) (2018). The following points arise:

·According to the NMFS (2018) paper referenced, bottlenose dolphins are classed as "medium-frequency" cetaceans, and TTS onset for this group of cetaceans for weighted impulsive noise is in fact 170dB re 1 µPa2^s SEL. Due to the logarithmic nature of the decibel scale this is considerably lower than the 176dB quoted.

·Medium frequency cetaceans, including bottlenose dolphins, are relatively robust to underwater impulsive noise. It would be far more precautionary to choose the ubiquitous harbour porpoise (*Phocoena phocoena*), a "high frequency" cetacean, as the receptor organism. They are more sensitive to disturbance and according to NMFS (2018) have a TTS onset value of 140 dB re 1 µPa2^s SEL. In terms of assessment and prediction, harbour porpoise is a better choice as a receptor based on their sensitivity to sound, protected status under Annex II and Annex IV of the Habitats Directive, and their extreme vulnerability to disturbance.

·The rationale behind choosing the area shown and used for the calculations is not clear. Impacts on bottlenose dolphins are typically assessed based on management units, of which there are five in the Irish Exclusive Economic Zone (EEZ): Oceanic Waters; West Coast of Ireland; Shannon Estuary; Irish Sea; and Offshore Channel, Celtic Sea and SW England. Clearly if the ensonified areas presented were divided by the smaller management units, the areas exceeding LOBE would be much higher.

·"Bang days" are a remarkably crude metric and assuming 260dB for seismic surveys, while precautionary, displays a dangerous simplification of the complex field of sound modelling and underwater acoustics. The nature of the assessment, based as it is on the licensing of seismic surveys, is so coarse as to be meaningless.

The assessment method for D11C2 continuous noise states: *"For this criterion Deliverable 4 of the work programme of TG Noise 2022 recommends that the mean of noise level above a threshold LOBE value should not cover an area more than 20% of a receptor species habitat. The exact threshold value is currently being established on a regional basis."* Harbour porpoise are chosen as the indicator species, and ship traffic recognised as the main source of continuous underwater noise; vessel density was chosen as a proxy for noise. We would like to make the following observations:

·The use of vessel density is an inadequate proxy for underwater continuous noise.

·The timescales considered are excessively large to capture single or short-term events.

·The statement that *"for Ireland the median levels of vessel traffic are 10 to 100 times less than in other EU countries of the North-East Atlantic",* while demonstrably true, is no measure of the ecological impact on the indicator species harbour porpoise, or any other marine mammals affected by continuous noise.

The impulsive noise data presented are based on seismic surveys, which are unlikely to be carried out at scale in the future in light of the 2022 Policy Statement on Petroleum

Exploration and Production in Ireland. However, Ireland's ambitious plans for the development of an Offshore Renewable Energy (ORE) industry outlined in the Offshore Renewable Energy Development Plan II (OREDP II), currently progressing, will involve multiple windfarm piling campaigns, beginning with the Phase I projects in the relatively small area of the Irish Sea. Impact piling for turbine foundations is among the loudest anthropogenic sources of impulsive noise, and if noise abatement technology (NAS) is not applied, will result in disturbance, displacement and potential injury to all marine mammals over large and ecologically significant areas over months and years. This would be entirely contrary to the strict protections afforded these animals under the Wildlife Act 1976 as amended, and the EU Habitats Directive. Unabated piling would of course also cause Ireland to fail to achieve GES for Descriptor 11.

In addition, the proposed development of offshore wind will result in a significant increase in continuous underwater noise from vessel traffic which will involve both transiting vessels and vessels operating under dynamic positioning (DP). Various activities generating continuous noise will take place offshore including *inter alia* high-resolution geophysical surveys, geotechnical drilling, cable-laying, dredging, trenching, and rock placement. There is also a potential move away from impact piling as a construction method, but it should be noted that techniques such as jet- or vibro-piling reduce or remove impulsive noise but increase continuous noise. The use of vessel density as a proxy for continuous noise is entirely inadequate to capture these activities.

The lack of empirical data on underwater noise under either D11C1 impulsive noise or D11C2 continuous noise is the greatest weakness in determining GES under Descriptor 11. In light of the increased industrial activity projected to occur offshore Ireland during the construction, operation, maintenance and decommissioning of ORE it is vital that a nationally supported network of broadband hydrophones be established to measure both the baseline soundscapes and the increasing sound during specific events. Only by developing sophisticated sound models driven by accurate and spatially relevant data will it be possible to determine GES for underwater noise.

3.10 Climate Change

"Ireland's marine environment has experienced increased warming and a decrease in pH over recent decades. Sea levels are rising around Ireland with larger sea level rise observed in some areas compared to global estimates. An expansion of the phytoplankton growth season and distribution has been observed for some species in Irish waters. Disentangling climate effects from other pressures including fishing remains a challenge."

SWAN supports the inclusion for the first time of climate change as a pressure. Despite not being one of the 11 MSFD descriptors, climate change is having, and will continue to

have, increasingly major impacts on the marine environment, and is therefore important to include from this point.

STATE OF THE MARINE ENVIRONMENT (ART. 8 (1A))

3.11 Biodiversity [Descriptor 1]

"Ireland has achieved GES for some elements of biological diversity, but the status for many species groups is unknown. Numerous species, in particular a significant proportion of fish species, are not in GES."

Descriptor 1 shows worrying results for Ireland's biodiversity, with GES only achieved for 28 of the 60 assessed species, with no mammal species found to have improved GES since the last cycle. We reiterate our earlier concern at the lack of data to assess the environmental status of the majority of fish species.

SWAN member BirdWatch Ireland raised a number of concerns relating to Descriptor 1 that impact seabirds in particular. As top marine predators exposed to all threats affecting the ocean, seabirds are excellent biodiversity indicators, providing us with an insight into the health of, and pressures facing, our marine environment. However, seabirds are one of the most threatened groups of birds globally, having declined by 70% in the last 50 years globally, and are facing multiple pressures both at their breeding areas and at sea. Twenty-three of the 24 species of breeding seabirds found in Ireland are either Red or Amber listed Birds of Conservation Concern. Irish breeding seabirds are highly vulnerable because they face a myriad of national threats and pressures (ranked in order of frequency of occurrence)

- Wind, wave and tidal power, including infrastructure
- Bycatch and incidental killing (due to fishing and hunting activities)
- Desynchronisation of biological / ecological processes due to climate change
- Decline or extinction of related species (e.g. food source/prey, predator/parasite, symbiote, etc.)
- Other invasive alien species (other than species of Union concern).

Ireland's poor track record of achieving positive conservation outcomes through the existing protected areas for birds is evident from the findings of a recent assessment which covered ten Special Protection Areas (SPAs), 6 of which are coastal. Of the bird species assessed, most (86%) are declining nationally and are also declining in SPAs, with only five of the 37 species in the assessed SPAs increasing. Furthermore, over half of species increasing nationally are actually decreasing on SPAs (20 of 39). We do note that Irish-breeding species have better status than those which just overwinter in Ireland. The pressures on birds that only winter in Ireland could be elsewhere, and support regional action to improve GES for these species.

3.12 Commercially Exploited Fish and Shellfish [Descriptor 3]

"Good environmental status has been achieved for 29 stocks of commercially-exploited fish and shellfish in Ireland's marine environment. GES has not been achieved for 46 stocks and 99 stocks remain in unknown status."

The results of Descriptor 3, concerning the pressures and lack of data surrounding commercially exploited fish, are amongst the most alarming in the report. Over half of stocks were not fully assessed and, as in the 2020 report, 99 stocks are in "Unknown" status. We are dissatisfied that data collection was not improved since the last cycle, nor were improvements seen.

While the tables on page 104 of the report show changes from the previous assessment to the current assessment cycle, they are not a true comparison. The current assessment period uses data from the five year period 2015-2020, yet is compared to data from a one year period in 2017- data that seem included in this assessment, meaning conclusions cannot be drawn.

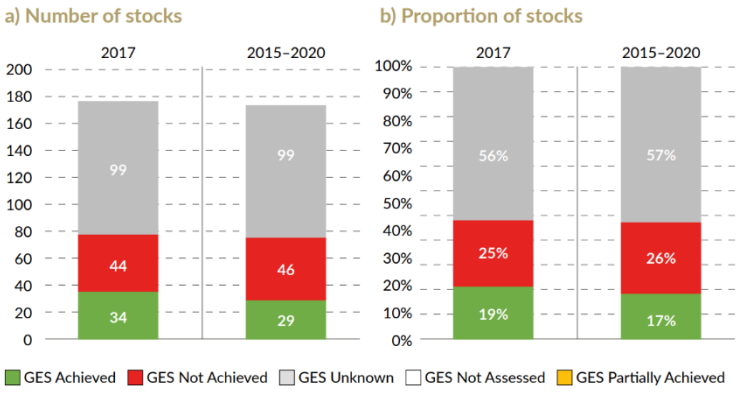

Figure 39. Comparison of the GES outcomes for commercial fish and shellfish stocks in the current assessment period (2015-2020) versus the previous one (2017).

Figure 1. Comparison of the GES outcomes for commercial fish and shellfish stocks in the current assessment period (2015-2020) versus the previous one (2017). From page 104 of "Ireland's Draft Marine Strategy Part 1, Article 8, 9 and 10 report, 2024"

Assessments for Descriptor 3 are reliant on Maximum Sustainable Yield (MSY) reference points ("*D3C1 primary criterion for commercially-exploited fish and shellfish: The fishing mortality rate of populations of commercially-exploited species is at or below levels which can produce the maximum sustainable yield*." However, academia now considers that the single-species MSY construct is an outdated model of assessment and in need of reform.

> *"Although maximum sustainable yield (MSY) is enshrined in national and international law (e.g. in the UN Convention on the Law of the Sea—UNCLOS 1982), the original concept of Schaefer (1954) derived from the logistic curve of population growth is frequently viewed by fisheries and other scientists as an outdated notion, which has been bypassed by a better understanding of ecological and human systems"* (Pauly & Froese, 2020).

In future cycles, updated and more ecologically appropriate methods of assessment should be included to more accurately measure fish stocks, and develop measures for ecosystem-based fisheries management.

As fisheries management is regulated by the Common Fisheries Policy, urgent action around Descriptor 3 is required at the EU level to increase the number of fish stocks in GES. A clear roadmap is needed to plan how to close some of the datagaps and bring more fish stocks into GES.

SWAN supports the Irish Wildlife Trust's ask for the inclusion of plans of how Ireland will implement measures required by the "European Commission Marine Action Plan: Protecting and restoring marine ecosystems for sustainable and resilient fisheries" (2023).

3.13 Food-webs [Descriptor 4]

"*The status of Ireland's marine food webs is unknown. Methods to determine Good Environmental Status for this descriptor are not yet sufficiently developed at an EU or regional level*."

SWAN recognises this is the least assessed indicator, as food webs are deeply complex and not adequately understood to make accurate assessment. However, as the linchpin of biodiversity, it is vital to follow the precautionary principle where environmental status is not known. It is worrying that by the 2024 cycle, there are still no methods established at the EU level for this descriptor. For future cycles, it must be determined what indicators need to be monitored, and work with European neighbours at a regional level to ensure thriving food webs.

3.14 Pelagic Habitats [Descriptor 1.6- under Biodiversity]

"*Environmental Status for pelagic habitats remains unclear*."

Falling under Descriptor 1, pelagic habitats are similar to food webs in that the complexity of the ecosystems makes them difficult to fully and accurately assess, resulting in an "unclear" result. The report simply states that "*an assessment of pelagic habitats was not possible since methodologies that could enable a coherent determination of GES have not yet been developed regionally or at EU level, which would be the appropriate spatial scale for this biodiversity-related criterion*."

According to OSPAR, these are "open-water environments occupied by floating and suspended organisms, or simply plankton" (OSPAR). As the base of the marine food web, ensuring these habitats are in GES underpins wider ecosystem health and biodiversity.

Without further detail on Descriptor 1.6 within the report, we are unable to comment beyond pressing for progress at the European level on developing appropriate criteria to assess whether pelagic habitats have met GES.

Appendix I: SWAN Member Organisations and Board of Directors

Marine Working Group

An Taisce

BirdWatch Ireland

Coastal Concern Alliance

Coastwatch

Coomhola Salmon Trust

Cork Nature Network

Environmental Forum

Irish Whale & Dolphin Group

Irish Wildlife Trust

StreamScapes

Board of Directors

Mindy O'Brien, Chair & Company Secretary
Voice of Irish Concern for the Environment (VOICE)

Elaine McGoff, Vice Chair
An Taisce

Karin Dubsky, Director
Coastwatch

David Lee, Director
Cork Environmental Forum

Ignatius Egan
Carra Mask Corrib Water Protection Group

John Armstrong
Cork Nature Network

Keith Scanlon
Dodder Action