A consultation on proposals for fisheries management measures for sandeel: extension of existing closure to all Scottish waters

Strategic Environmental Assessment Screening and Scoping Report

May 2023

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Contents

1 Introduction

1.1 Background

1.1.1 The Scottish Government has commitments under the UK Marine Strategy to monitor and measure progress towards Good Environmental Status for elements including biodiversity and commercial fish[1], and to take necessary measures to protect and conserve the ecosystems and the biological diversity of UK territorial seas under the OSPAR convention[2]. Under the Joint Fishery Statement of the Fisheries Act 2020 the Scottish Government is committed to delivering sustainable management of fisheries that takes account for the protection of biodiversity and healthy functioning marine ecosystems[3]. The *Precautionary Objective* of the UK Fisheries Act 2020 establishes the need to apply the precautionary approach to fisheries management.

1.1.2 Given the importance of sandeel to the wider ecosystem and the subsequent benefit provided by the species in aiding long-term sustainability and resilience of the marine environment, it remains an over-arching and long-held Scottish Government position not to support fishing for sandeel in Scottish waters, which is reflected in Scotland's Future Fisheries Management Strategy[4]. This position was emphasised in June 2021 when the Cabinet Secretary for Rural Affairs and Islands committed in Parliament to considering what management measures could be put in place to better manage the North Sea sandeel fisheries in Scottish waters.

1.1.3 Taking that into account, the Scottish Government will now consult on proposals for sandeel management measures in Scottish waters. The planned consultation is being undertaken to help meet our commitments by ensuring the sustainable management of fishing for sandeel. Its purpose is to bring about wider environmental benefits, which will benefit both sandeel stocks, and the wider ecosystem.

1.2 Purpose and Structure of the Report

Purpose of the Report

1.2.1 The Environmental Assessment (Scotland) Act 2005 ('the 2005 Act') requires that public plans, programmes, and strategies be assessed for their potential effects on the environment[5]. Undertaking a Strategic Environmental Assessment (SEA) provides a means of identifying potentially significant environmental effects at an early stage. The implementation of fisheries management measures to extend the North Sea sandeel closed area falls

[1] Marine strategy part one: UK updated assessment and Good Environmental Status - GOV.UK (www.gov.uk)
[2] Convention | OSPAR Commission
[3] Joint Fisheries Statement (JFS) - GOV.UK (www.gov.uk)
[4] Future fisheries: management strategy - 2020 to 2030 - gov.scot (www.gov.scot)
[5] Environmental Assessment (Scotland) Act 2005 (legislation.gov.uk) Accessed on 16 May 2023

under Section 5(4) of the 2005 Act and therefore subject to a strategic environmental assessment (SEA).

1.2.2 In accordance with the requirements of the 2005 Act, a joint screening and scoping exercise has been undertaken. Its conclusions are presented in this report and comprise of the following detail:

- the proposed scope and level of detail of the assessment
- the proposed assessment methodology;
- a summary of the types and sources of evidence that is likely to inform the environmental baseline; and
- the prospective period of consultation on the proposals and draft Environment Report.

1.2.3 Information to support the screening exercise can be found in Appendix A.

1.2.4 The views of the Consultation Authorities (Scottish Environment Protection Agency (SEPA), Historic Environment Scotland (HES) and NatureScot (NS) on this combined report are now being sought.

Report Structure

1.2.5 The Screening and Scoping Report is set out as follows:

- Section 1 introduces the proposal and the strategic environmental assessment process.
- Section 2 provides background information on the proposal for fisheries management measures for sandeel in Scottish waters.
- Section 3 summarises the supporting evidence underpinning the proposal
- Section 4 sets out the proposed approach to the assessment, including the proposed scope, potential methodology, and how issues of mitigation, reasonable alternatives and cumulative impacts.
- Section 5 summarises the types and sources of evidence that are likely to make up the environmental baseline.
- Section 6 provides details on next steps in the preparation of the draft proposals and the SEA process, including proposed consultation timescales.

Annex A includes the environmental screening report.

2 Proposals for fisheries management measures for sandeel in Scottish waters

2.1 Background

2.1.1 Given the importance of sandeel to the wider ecosystem and the subsequent benefit provided by the species in aiding long-term sustainability and resilience of the marine environment, it remains an over-arching and long-held Scottish Government position not to support commercial fishing for sandeel in Scottish waters, which is reflected in Scotland's Future Fisheries Management Strategy[6]. This position was emphasised in June 2021 when the Cabinet Secretary for Rural Affairs and Islands committed in Parliament to considering what additional management measures could be put in place to better manage the North Sea sandeel fisheries in Scottish waters.

2.1.2 There are several measures in place for the protection of sandeel stocks, through the network of Marine Protected Areas. Furthermore, a sandeel closure in sandeel management area 4 has been in place since 2000 and, the UK has not allocated sandeel quota to UK vessels since 2021.

2.1.3 In 2021, Scottish Government officials worked closely with UK counterparts on a call for evidence[7] to gather information to better inform our considerations on future management for sandeel. The Scottish Government is therefore committed to considering what additional measures could be introduced to better manage fishing for sandeel in Scottish waters, with the aim to benefit both North Sea sandeel stocks and the wider ecosystem, including sensitive marine species

2.1.4 North Sea sandeel is jointly managed stock between the UK and the EU. Under the UK/EU Trade and Cooperation Agreement (TCA), the UK has a 2.97% share and the EU a 97.03% share of the Parties' combined sandeel quota in 2023. The Total Allowable Catch (TAC) is set during the in-year consultations, followed by the ICES advice release. As a result of the negotiations this year, the TAC has been set at 194,367 tonnes[8] which is 3% lower for areas 1r and 4[9] (UK waters) than the ICES advice.

2.1.5 Under the UK/EU Trade and Cooperation Agreement (TCA)[10], and during a transition period lasting until 30 June 2026, the UK and the EU have full mutual access to their respective EEZs (i.e., 12 – 200 nautical miles); as well as access to specific English, Welsh and Channel Island waters in the 6-12 nautical mile area. Sandeel is an important fishery to some EU member states, in particular Denmark, who regularly fish the stock in UK waters.

[6] Future fisheries: management strategy - 2020 to 2030 - gov.scot (www.gov.scot)
[7] Call for Evidence on future management of Sandeels and Norway pout - Defra - Citizen Space
[8] European Union and the United Kingdom – sandeel fisheries consultations: written record for 2023 - gov.scot (www.gov.scot)
[9] Sandeel (Ammodytes spp.) in divisions 4.b–c, Sandeel Area 1r (central and southern North Sea, Dogger Bank) (figshare.com)
[10] https://ec.europa.eu/info/sites/default/files/draft_eu-uk_trade_and_cooperation_agreement.pdf

2.1.6 These proposals for sandeel management measures have been informed by the available scientific evidence. It is anticipated that any potential measures will be introduced through the implementation of a licence condition applicable to all vessels that would otherwise fish within UK waters.

2.2 Sandeel fishery

2.2.1 Sandeel fishing in UK waters is currently confined to the North Sea (Figure 1).

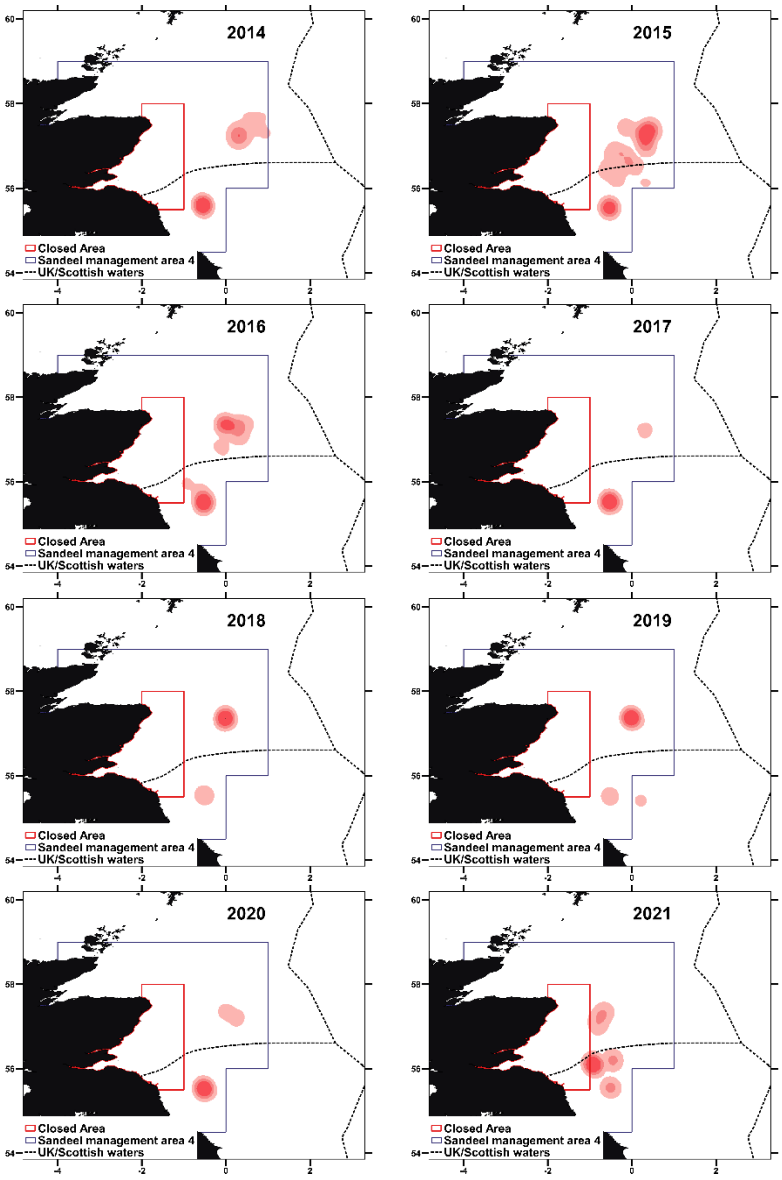

Figure 1. Sandeel fishing activity in Scottish waters from 2014-2021

2.2.2 In accordance with the written record of fisheries consultations between the UK and the EU for 2023[11], EU vessels, including those fishing in UK waters,

[11] Written record of fisheries consultations between the United Kingdom and the European Union For 2021 (publishing.service.gov.uk)

are permitted to count bycatches of whiting and mackerel (OT1*/2A3A4 against their sandeel quota, up to a limit of 2% of the sandeel quota. By-catches of whiting and mackerel counted against the quota pursuant to this provision and by catches of species counted against the quota pursuant to Article 15(8) of regulation (EU) No 1380/2013 shall, together, not exceed 9% of the quota[12].

2.3 Existing area closure for sandeel

2.3.1 There is a sandeel closure in place in sandeel management area 4 (Figure 2). This area extends along most of the east coast of Scotland, as well as some of the northeast coast of England, and is exclusively within UK waters. The existing closure was included in EU regulations, and has been retained in UK law.

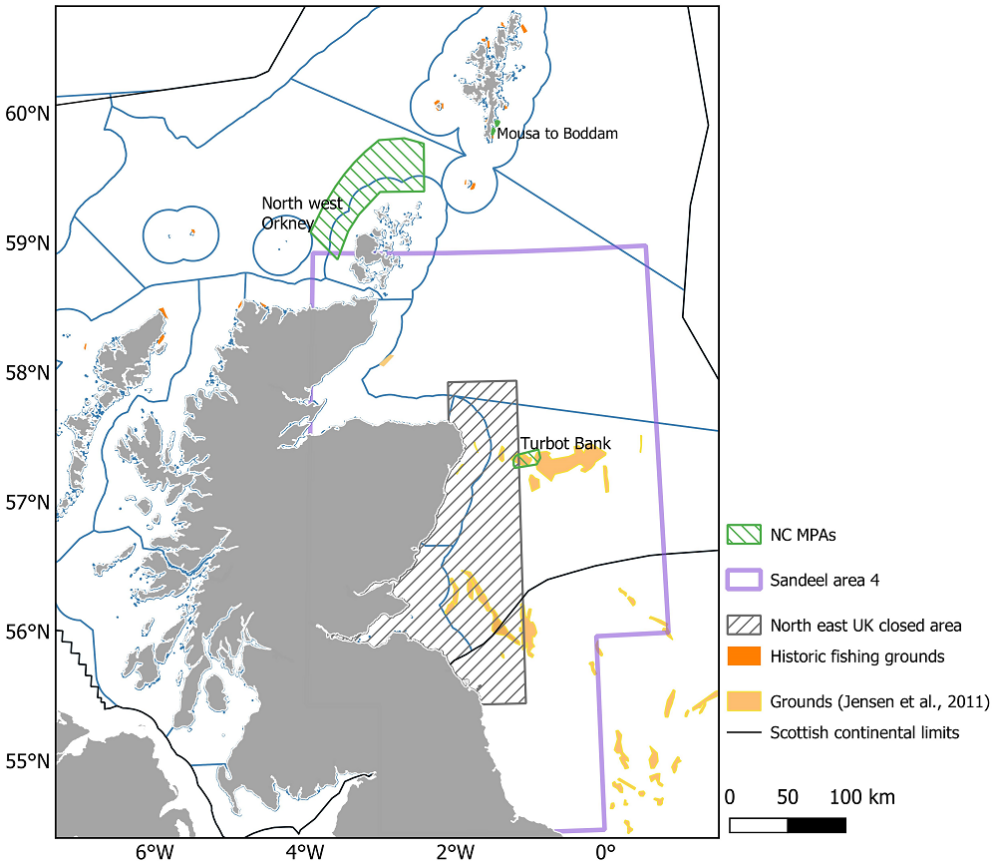

Figure 2. The existing northeast UK area closed to sandeel fisheries and the various spatial management measures for sandeel within Scottish waters. (Reproduced from a Case Study: Sandeels in Scottish Waters)

2.3.2 The closure was intended to benefit predators dependent on sandeel by avoiding localised stock depletion. Seabirds were the focus of this at the time of the closure, however all sandeel predators were considered[13].

[12] European Union and the United Kingdom – sandeel fisheries consultations: written record for 2023 - gov.scot (www.gov.scot)

[13] Microsoft Word - SGMOS-07-03 report v3 with STECF opinion.doc (europa.eu)

2.3.3 The closure area has been in place since 2000, following requests from the UK to the EU to establish a moratorium on fishing and advice from ICES, which stressed the importance of sandeel for a number of potential sensitive seabird colonies in the area[14].

2.4 Call for evidence on future management

2.4.1 Between 22 October and 19 November 2021 Scottish Government officials worked closely with UK counterparts on a call for evidence[15] to gather information to better inform our considerations on future management for sandeel. Responses received included evidence that sandeel are an important forage fish for marine mammals, seabirds, and predatory marine fish and that reduced pressure from industrial fishing would likely provide benefits through increased resilience to these species. Many respondents believe a change in management approaches for sandeel is required.

2.4.2 Respondents also noted that sandeel fishing, while bringing little economic value to the UK, has a high economic value to some EU nations, who rely on UK waters to access these fisheries to support their fishmeal and fish oil industries.

2.5 Proposal for fisheries management measures for sandeels in Scottish waters

2.5.1 The Scottish Government has committed to considering what measures could be introduced to better manage fishing for sandeel in Scottish waters, with an aim to benefit both North Sea sandeel stocks, and the wider ecosystem.

2.5.2 Based on the evidence available, extending the existing closure in Scottish waters may benefit sandeel and the wider ecosystem, including key predator species such as seabirds, marine mammals and whitefish stocks.

2.5.3 The Scottish Government therefore proposes to consult on proposals to extend the existing sandeel area closure to all Scottish waters. This proposal is informed by the potential benefits to the wider marine ecosystem that such measures could bring. These include benefits to sandeel, seabirds, marine mammals, and other fish species. The extension of the current closed area to all Scottish waters would also benefit several of Scotland's Marine Protected Areas (MPAs) for which sandeel are a protected feature, and would contribute to achievement of Good Environmental Status for seabirds and marine mammals.[16]

2.5.4 Sandeel in area 4 is a single stock. The TAC for sandeel area 4 covers the whole area, without taking into account the existing closure within the area, therefore some fishing effort is currently displaced without regard to the potential effects on local depletion.

2.5.5 Consideration was given to possible further displacement of fishing effort as a result of an extension to the closed area. It is possible that closure of the

[14] Case Study: Sandeels in Scottish waters | Scotland's Marine Assessment 2020
[15] Call for Evidence on future management of Sandeels and Norway pout - Defra - Citizen Space
[16] updated UK Marine Strategy Part Two (publishing.service.gov.uk)

sandeel fishery in all Scottish waters would mean that some activity is displaced into the portion of sandeel area 4 that extends into English waters. However, it is difficult to quantify to what extent fishing patterns in the area will change as a result of displacement, or if fishing will simply decrease. Displacement can be assessed using VMS data which is already available for all vessels in the fishery.

2.5.6 Furthermore, the UK government launched a consultation on the management of sandeel in English waters on 7 March 2023. This proposes spatial management measures for sandeels in English waters. If the UK Government proceed with such measures, then this would mitigate the risk of displacement of activity into English waters. On the other hand, spatial management measures for sandeel in English waters may risk displacement of fishing activity into Scottish waters if the option to extend the closure of the sandeel fishery in Scottish waters is not pursued.

2.5.7 Catching levels are set in line with the agreed TAC level flowing from the UK-EU Bilateral Agreement, meaning that there will be no increased fishing pressure in the area as a whole.

2.5.8 Sandeel play a role in North Atlantic marine food webs and variations in their abundance and availability can have effects across the marine food web. Sandeel are a key food source for globally important seabird populations that are currently facing a range of pressures. Some species, such as kittiwake and Arctic skua, are considered highly sensitive to sandeel availability[17]. Sandeel are also a food source for fish species and marine mammals, including locally declining harbour seal populations[18]. The total stock biomass of sandeel has shown an overall decline over the last three decades. Climate change has the potential to further affect sandeel abundance and their availability to marine predators.

2.5.9 We propose an extension of the closure to cover all Scottish waters, due to the potential benefits that it may bring to sandeel stocks (which continue to be depleted) as well as the wider marine environment[19]. We propose that the closure is effective year round, and that it should be permanent until revoked. Full consideration of all options will be given following the consultation.

[17] Inter Research » MEPS » v202 » p253-264 (int-res.com)
[18] The diet of harbour and grey seals around Britain: Examining the role of prey as a potential cause of harbour seal declines - Wilson - 2019 - Aquatic Conservation: Marine and Freshwater Ecosystems - Wiley Online Library
[19] https://www.rspb.org.uk/globalassets/downloads/documents/campaigning-for-nature/rspb2021_the-case-for-stronger-regulation-of-sandeel-fisheries-in-uk-waters.pdf

3 Supporting information, including the environmental effects of the proposals

3.1.1 The information presented in this section summarises the evidence informing the proposal.

3.2 Potential benefits to sandeel

3.2.1 Sandeel represent the most abundant species group in the North Sea and play a key role in North Atlantic marine food webs[20]. Variations in the abundance and availability of sandeel or other forage fish can have important effects on both ends of marine food web (top-down regulation of lower trophic levels and bottom-up effects on marine predators). A species distribution model predicted sandeel distribution within and beyond the limits of Scottish waters (Figure 3) both inside and outside of the current closure limits to all Scottish waters.

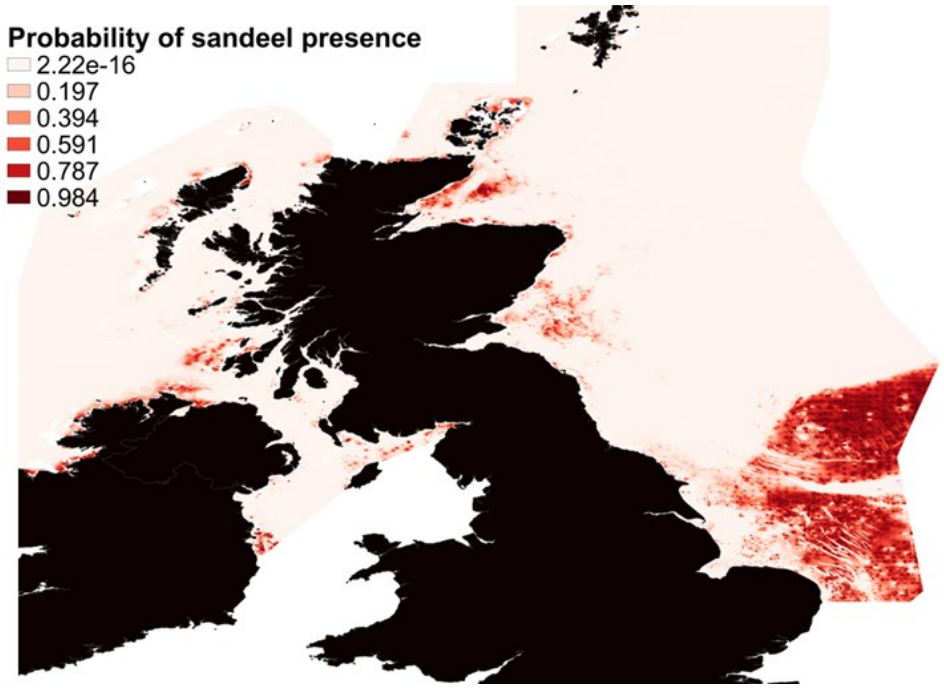

Figure 3. Predicted probability of sandeel occurrence in UK waters. From Langdon et al. 2021

3.2.2 The total stock biomass of sandeel has shown an overall decline over the last three decades. Climate change has the potential to further affect sandeel abundance and their availability to marine predators. Reduced pressure from industrial fishing could provide benefits through increasing the resilience of sandeel to other environmental pressures.

[20] estimate of the total biomass of fish in the North Sea | ICES Journal of Marine Science | Oxford Academic (oup.com)

3.3 Potential benefits to Seabirds

3.3.1 Scotland holds internationally important numbers of breeding seabirds, with 24 species regularly breeding in Scotland[21]. Over half of the UK's seabird species are undergoing a long-term decline[22], and the UK has not achieved Good Environmental Status for seabirds in the Greater North Sea and Celtic Sea[23].

3.3.2 Several species of seabird are dependent on sandeel as a prey source during the breeding season, including kittiwakes, guillemots, puffins, and gannets[24] and declining populations of sandeel and other small fish may be a contributing factor to the decline of seabirds. For example, in 1993 there was a measurable, negative effect of the fishery on the sandeel stock (local depletion) in the western part of Area 3, which coincided with a reduction in breeding success of seabirds, especially kittiwakes[25]. The ability of seabirds to prey on sandeel will depend on both the absolute numbers of sandeel (stock biomass) and the availability of sandeel to seabirds. Seabirds are constrained in both the distance from nest sites that they can forage and the depth in the water column that they can reach, with both foraging range and dive depth varying greatly among species.

3.3.3 There are a number of other pressures acting on Scottish seabird populations including habitat loss, biosecurity, infectious disease (such as Highly Pathogenic Avian Influenza[26]), climate change, storm events[27], human disturbance to breeding birds[28] and predation of both chicks and adult seabirds (Mitchell et al. 2002)[29,30]. Reduced pressure from industrial fishing such as the sandeel fishery, may provide benefits to seabirds as an increased availability of a key prey source has the potential to increase their resilience.

3.4 Potential benefits to Seals

3.4.1 Sandeel comprise a key component of the diets of both grey and harbour seals. Harbour seals are experiencing regional population declines in Scotland and, one potential contributing factor is a reduction in the availability of prey species (e.g., sandeel) in regions where they are experiencing

[21] Seabird Populations of Britain and Ireland | Scotland's Marine Assessment 2020
[22] Wild bird populations in the UK, 1970 to 2021 - GOV.UK (www.gov.uk)
[23] updated UK Marine Strategy Part Two (publishing.service.gov.uk)
[24] Desk-based revision of seabird foraging ranges used for HRA screening
[25] https://www.ices.dk/sites/pub/Publication Reports/Cooperative Research Report (CRR)/CRR239.pdf (Pages 7-10)
[26] Avian flu task force announced | NatureScot
[27] Inter Research » MEPS » v604 » p237-249 (int-res.com)
[28] Effects of a fishery closure and prey abundance on seabird diet and breeding success: Implications for strategic fisheries management and seabird conservation - ScienceDirect
[29] Top-down control of a marine mesopredator: Increase in native white-tailed eagles accelerates the extinction of an endangered seabird population - Anker-Nilssen - 2023 - Journal of Applied Ecology - Wiley Online Library
[30] Predation by great skuas at a large Shetland seabird colony - VOTIER - 2004 - Journal of Applied Ecology - Wiley Online Library

decline[31]. Harbour seals in the Greater North Sea have not achieved Good Environmental Status[32]. Foraging grounds of both harbour and grey seals (Figures 5 and 6) overlap with predicted sandeel habitat in UK waters (Figure 3).

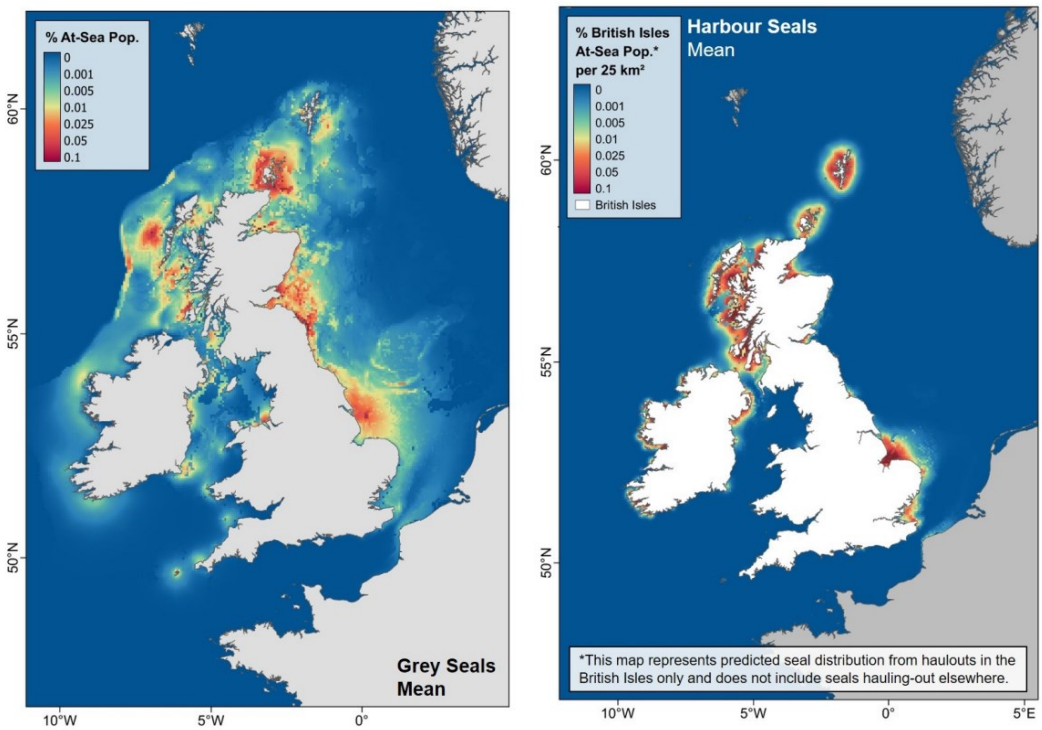

Figure 5. Predicted at-sea density of grey seal (left) and harbour seal (right) (Carter et al. 2020)

3.5 Potential benefits to Cetaceans

3.5.1 Scottish waters support a diverse range of cetaceans[33] with sandeel and other forage fish forming an important part of the diet of many of these species including minke whale[34] and harbour porpoise[35]. Lower availability of sandeel has been linked with increased risk of starvation in harbour porpoise [32]. Population density modelling of harbour porpoise shows that this species has strong affinity with sandeel habitat (Figure 7). Currently Good Environmental Status is being met for minke whale and bottlenose dolphin but is uncertain for other species[36]. Habitat maps of other cetacean species were generated

[31] The diet of harbour and grey seals around Britain: Examining the role of prey as a potential cause of harbour seal declines - Wilson - 2019 - Aquatic Conservation: Marine and Freshwater Ecosystems - Wiley Online Library
[32] updated UK Marine Strategy Part Two (publishing.service.gov.uk)
[33] Distribution maps of cetacean and seabird populations in the North-East Atlantic - Waggitt - 2020 - Journal of Applied Ecology - Wiley Online Library
[34] Inter Research » MEPS » v277 » p263-274 (int-res.com)
[35] Linking sandeel consumption and the likelihood of starvation in harbour porpoises in the Scottish North Sea: could climate change mean more starving porpoises? | Biology Letters (royalsocietypublishing.org)
[36] updated UK Marine Strategy Part Two (publishing.service.gov.uk)

in Scotland's Marine Assessment 2020 and show that cetacean habitat overlaps with sandeel habitat[37].

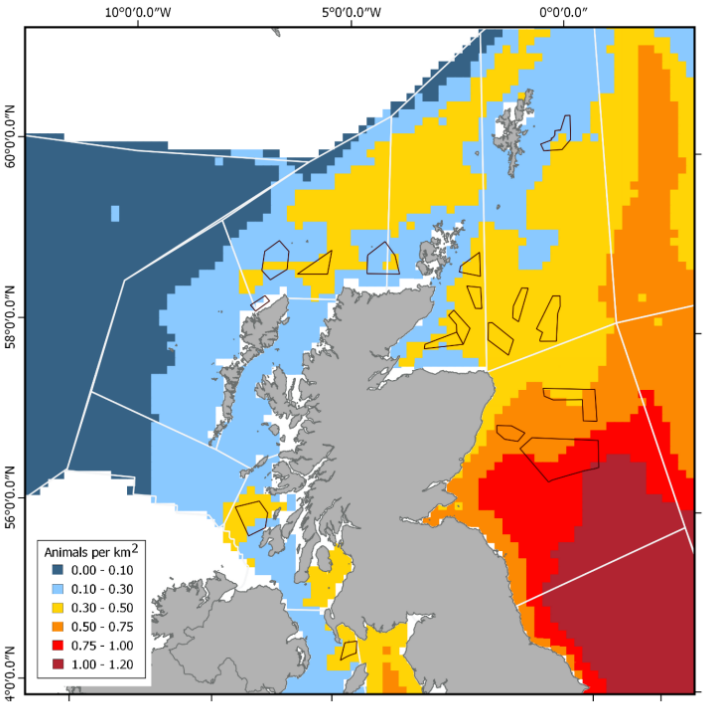

Figure 8 Predicted density surface for harbour porpoise in 2016. The colour scale is in units of animals per km².
Draft Plan Option Areas are outlined in black for reference. SCANS-III survey blocks are marked in white.

Figure 7. Predicted density of harbour porpoise in Scottish waters in 2016 in SCANS-III (in Hague et al. 2021)

3.6 Potential benefits to marine fish

3.6.1 Sandeel is a prey species for some whitefish species (cod, whiting, haddock) [38,39]. Whiting and mackerel are caught as bycatches in the sandeel fishery and whiting aggregate at sites of high sandeel abundance[40]. Fisheries closure may provide benefits to marine fish species both in terms of increased prey availability and reduced bycatch.

3.7 Other benefits

3.7.1 Sandeel are a protected feature of the following Marine Protected Areas (MPAs) - Mousa to Boddam MPA, North-west Orkney MPA and Turbot Bank MPA[41]. Several MPAs also aim to conserve sandeel habitat to ensure the continued supply of young recruits to other sandeel grounds across Scotland and the rest of the UK.

[37] Cetaceans | Scotland's Marine Assessment 2020
[38] Predation of whiting and haddock on sandeel: aggregative response, competition and diel periodicity - Temming - 2004 - Journal of Fish Biology - Wiley Online Library
[39] Interpreting variation in fish-based food web indicators: the importance of "bottom-up limitation" and "top-down control" processes | ICES Journal of Marine Science | Oxford Academic (oup.com)
[40] Predation of whiting and haddock on sandeel: aggregative response, competition and diel periodicity - Temming - 2004 - Journal of Fish Biology - Wiley Online Library
[41] Sandeel | NatureScot

4 The approach to the assessment

4.1 Purpose of the Assessment

The purpose of the SEA is to assess the potential and significance of any environmental effects of the proposed sandeel management measures.

4.2 Scope of the Assessment

4.2.1 The screening exercise (appended to this report) determined that the extension of the existing closure in Scottish waters will have potentially significant environmental effects on biodiversity, flora and fauna; and water quality, resources, ecological status. The scope of the SEA assessment will therefore include these environmental topics.

4.2.2 This Scoping Report begins to explore the nature of these effects. It also presents the assessment approach that will likely be taken.

4.2.3 Table 1 sets out further information on the potential impacts of the extension of the existing closure in Scottish waters on each SEA topic, providing a rationale for its inclusion in or exclusion from the assessment.

4.2.4 Given that the measure is still under review, this assessment will look at the intrinsic processes of the extension of the existing closure in Scottish waters and the desired goals; and how they may improve upon the current rules and regulations.

Table 1. Proposed Scoping In/Out of SEA Topics*

SEA Topic	In/out	Reasons for inclusion / exclusion
Biodiversity, flora and fauna	In	The proposals are considered to be beneficial to sandeel stocks, seabirds and marine mammals and therefore this topic will be scoped in.
Population	Out	The proposal would not result in significant increases and/or decreases in human population numbers, changes to in- or out-migration, etc. These topics are scoped out of the SEA. Social and economic effects will be considered by the BRIA.
Human health	Out	The proposal would not result in any significant human health issues. This topic is scoped out of the SEA.
Soil, geology and hydrodynamic processes	Out	The proposals are unlikely to have a significant impact on soil, geology, or hydrodynamic processes. Sandeel fishing is focussed on sandy grounds with a moderate current so there has never been concern about sediment disturbance from sandeel trawls. This topic has therefore been scoped out of the SEA.
Water quality, resources, ecological status	In	The proposal may have an impact on resources (fish stocks) therefore this topic will be scoped in.
Air	Out	The proposal would be unlikely to result in emissions to air, other than those from vessel use. It is unlikely that the extension would make a significant difference to existing vessel emissions. This fishery currently takes place in offshore waters and therefore doesn't impact Scottish air quality. Any displacement of vessels caused by closing all Scottish

SEA Topic	In/out	Reasons for inclusion / exclusion
		waters would move vessels further from Scotland therefore the proposed extension will have no positive or negative impact on Scottish air quality. This topic is scoped out of the SEA.
Climatic factors	Out	The proposal is unlikely to result in significant increased/ decreased emissions of greenhouse gases although a change in fishing effort may result in a change in vessel emissions. The UK has not allocated sandeel quota since 2021 therefore no UK vessels hold quota for sandeel. The only vessels that currently fish in the area are Danish. Extending the closure will therefore have no impact on Scottish carbon emissions. Although there may be an impact on emissions from Danish vessels as a result of displacement to other grounds, this is a trans-boundary issue that is disproportionate to a SEA. As Scottish sandeel fishing grounds are furthest geographically from Denmark any affect would be a reduction in emissions. Any reduction in their emissions is not likely to be significant. This is scoped out of the SEA.
Material assets	Out	The proposal will not intrinsically impact built assets or natural assets as defined in the SEPA guidance. (https://www.sepa.org.uk/media/219432/lups-sea-gu4-consideration-of-material-assets-in-sea.pdf)
Cultural heritage	Out	Fishing practices will remain largely unchanged at the methodological level. Any impacts to cultural heritage will remain as before. Depending on future spatial measures, there may be less impact in some areas (due to closures) and more in others (due to displacement) but for the purposes of the extension of existing closure in sandeel area 4 to all Scottish waters assessment this can be scoped out.
Landscape/ seascape	Out	The proposal is unlikely to have effects on landscape and/or seascape over or below what effects the industry currently has. These issues are therefore scoped out of the SEA.

*** These will be explored and likely adapted throughout the consultation process as the policy adapts and technical measures are decided upon.**

4.3 Assessment methodology

4.3.1 The SEA will present a high level and qualitative account of the potential environmental effects that might be expected to arise from the proposal. The assessment will be informed by a desk-based review of available information on the existing environment (environmental baseline), and in wider Scottish waters to which we propose to extend the closure. Section 5 summarises the types and sources of evidence that will make up this environmental baseline.

4.3.2 The assessment will then consider the sensitivity (tolerance/recoverability). of sandeel and sandeel-dependent species identified as part of the baseline review to the removal of fishing pressure as a result of the proposed measure. This will be based on the latest understanding of the dependence of these species on sandeel, their distribution in relation to sandeel and the extent of any other pressures faced by each species.

4.3.3 For the purpose of this assessment, the indicative criteria set out in Table 2 will be used to help determine the type (beneficial or adverse) and magnitude (negligible, very minor, minor, moderate or major) of potential effects that may result from the proposed measure. The potential for future effects will also

been identified, however the magnitude of potential future effects may prove impossible to predict based on available information.

Table 2 Indicative criteria of potential effects

Type	Magnitude	Indicative criteria
Adverse/Beneficial	Major	Large spatial scale (size/number); Major intensity (level/magnitude); Long-term (duration/frequency); High sensitivity of features; and/or Low tolerance/reversibility of features.
	Moderate	Medium spatial scale; Moderate intensity; Medium-term; Moderate sensitivity of features; and/or Moderate tolerance/reversibility of features.
	Minor	Small spatial scale; Low intensity; Short-term; Low sensitivity of features; and/or High tolerance/reversibility of features.
	Negligible	There is likely to be a change, but the level will be indiscernible from baseline conditions.
Neutral	None	No change from baseline conditions.

4.3.4 The potential implications of the proposed measure will be assessed against the SEA objectives. The SEA objectives that we propose to be applied in the assessment are presented in Table 3.

Table 3 SEA objectives

SEA Topic	SEA Objective
Biodiversity, Flora and Fauna	• To safeguard and enhance marine and coastal ecosystems, including species, habitats and their interactions; • To maintain or work towards achieving 'Good Environmental Status' for biodiversity; • To maintain or work towards achieving 'Good Environmental Status' for commercial fish; • To protect and conserve the ecosystems and the biological diversity of UK territorial seas; • To deliver sustainable management of fisheries that takes account of the protection of biodiversity and healthy functioning marine ecosystems.
Water quality, resources, ecological status	• See Biodiversity, Flora and Fauna

4.4 Identifying mitigation and monitoring proposals

4.4.1 The proposals are expected to only provide positive effects on the topics identified as in scope of the SEA, therefore mitigation proposals have not been considered.

4.4.2 Any monitoring proposals are likely to focus on the significant environmental effects that are identified during the course of the SEA and on implementation of any potential management measures. We propose that monitoring data will use existing data sources and will be linked to relevant indicators to minimise requirements for additional data collection.

4.4.3 However, it is important to acknowledge the complexity of marine ecosystems and their interactions with other drivers which may affect population status (such as climate change, weather events, offshore developments, disease outbreaks, etc.) which make it impossible in most cases to isolate any one driver of change (e.g., in this case the proposed management measures considered in the SEA).

4.5 Consideration of reasonable alternatives

4.5.1 The SEA will assess any reasonable alternatives, which would achieve the goals set out in this report. However, we are of the view that closure of smaller areas would not result in the same conservation gains to a variety of marine species that could potentially occur as a result of full closure in Scottish waters.

4.6 Cumulative impacts

4.6.1 The SEA will assess the cumulative effects of the proposed management measures proposed.

5 Initial Environmental Baseline

5.1.1 It is a requirement of the 2005 Act that Responsible Authorities provide details of the character of the environment which may be affected, including any existing pressures and the likely evolution of the environment in the absence of the extension of the existing sandeel closure to all Scottish waters. This will be assessed against this baseline to provide an indication of the type and significance of any environmental impacts that could arise.

5.1.2 The following paragraphs set out an indication of the content and level of detail likely to be included in the environmental baseline that will inform the assessment for each of the environmental topics scoped into the Environmental Report. The baseline information will reflect the proposed scope of the assessment, as previously discussed.

5.1.3 Under each SEA topic, current conditions, trends, and pressures will be explored, with baseline information drawn from a range of national sources such as:

- Current and upcoming technical regulations and management measures.

- Scotland's Marine Atlas, published in March 2011 and updated by information provided by NMPi;
- The Scottish Marine Assessment for 2020[42].
- The UK Marine Strategy [43].
- Marine Scotland Compliance and Marine Scotland Science catch data.
- Environmental research studies undertaken by Scottish Government and other organisations as appropriate;
- Scotland's Environment Web and other Scottish Government environmental sources.
- Other sources as appropriate.

5.1.4 It is worth noting that the extension of the existing sandeel closure to all Scottish waters will not on its own have a significant impact on the environmental baselines of the scoped in topics. At this stage in the extension development, the body of changes will be aimed at improving the ecosystem. With potential new management measures in place, it may then result in positive impacts to the environmental baseline.

5.2 Biodiversity, Flora and Fauna

5.2.1 The environmental protection objectives set out for biodiversity, flora and fauna are broadly aimed at protecting habitats and species from damage and disturbance. A hierarchy of protection has been established already within Scotland's fisheries, including:

- Designated sites, including Marine Protected Areas (MPAs) for fish, birds and marine mammals.
- A suite of technical conservation measures, both internationally and locally (EU delegated acts[44,45] and Scottish fishing vessel licences).
- A range of temporal and spatial closures relating to spawning stocks and nurseries.
- Annually set Total Allowable Catches (TACs) based upon stock assessments.
- European Protected Species (e.g., cetaceans) and other marine mammals, including seals.
- Priority Marine Features
- Scottish Biodiversity Strategy

[42] Scotland's Marine Assessment 2020 | Scotland's Marine Assessment 2020

[43] Marine strategy part one: UK updated assessment and Good Environmental Status - GOV.UK (www.gov.uk) https://www.gov.uk/government/publications/marine-strategy-part-one-uk-updated-assessment-and-good-environmental-status

[44] COMMISSION DELEGATED REGULATION (EU) 2019/2239 – North Sea [online]: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019R2238&from=EN

[45] COMMISSION DELEGATED REGULATION (EU) 2019/2239 – North Western Waters [online]: https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32019R2239&from=EN

5.2.2 The extension of the existing sandeel closure to include all Scottish waters will seek to restrict sandeel fishing in an area which is key to both sandeel stock and its predators.

5.2.3 The Environmental Baseline is expected to include information on topics such as:

- The abundance and distributions of marine mammals from, for example, the Small Cetaceans in European Atlantic Waters (SCANS) surveys and information made available through the Special Committee on Seals (SCOS) reports.
- The abundance and distributions of seabirds, for example from the UK Seabird Monitoring Programme monitoring of breeding seabird species at coastal and inland colonies across the UK.
- The abundance of marine fish that may predate sandeel, from information on the overall state of fish stocks made available through ICES annually.
- Mobile features, including designated seal haul-out sites and distribution maps of sandeel, marine mammals, birds and other species where applicable;

5.3 Water quality, resources, and ecological status

5.3.1 This environmental topic covers water quality, resources and ecological status. With relation to the extension of existing closure in sandeel area 4 to all Scottish waters, this environmental topic will be scoped in to account for any potential impacts on Scotland's fish stocks (considered a national resource).

5.3.2 The Marine (Scotland) Act 2010)[46] provides a framework to help balance competing demands on Scotland's seas. It includes a duty to protect and enhance the marine environment and includes measures to help boost economic investment and growth in areas such as marine renewables. Scotland's National Marine Plan 2015 provides a framework for managing all developments, activities and interests in or affecting Scotland's marine area. There is also legislation relating to specifically managing Scotland's Fisheries.

5.3.3 The Environmental Baseline is expected to include information on topics such as:

- The state of sandeel and other fisheries stock in Scottish waters, made available through ICES annually

5.3.4 The extension of the existing closure in sandeel area 4 to all Scottish waters will seek to restrict sandeel fishing for the purpose of benefits to both sandeel stock and its predators, including other commercially important fish species.

[46] Scottish Government, 2010. Marine (Scotland) Act 2010. Available at: http://www.gov.scot/Topics/marine/seamanagement/marineact

6 Consultation and next steps

6.1.1 This joint Screening and Scoping Report will be made available to the statutory Consultation Authorities for comment.

6.1.2 Following the close of this consultation period, the responses will be analysed and used to inform the further development of the extension and the Environmental Report, both of which will be made available for public consultation.

6.1.3 Table 4 sets out this indicative timeline.

Table 4. Indicative timeline for development of the extension of existing closure in sandeel area 4 to all Scottish waters and SEA

Indicative timeline	Development of Extension	Stage of the SEA
May 2023	Drafting of impact assessments and consultation report	Submission of joint Screening and Scoping Report
July 2023	12 week consultation on the draft sandeel fisheries measures	Consultation on SEA Environment Report
January 2024	Publication of consultation analysis report.	
March 2024	Implementation of proposed management measures	Production of post-adoption statement

Appendix A - SEA Screening Report

STEP 1 – DETAILS OF THE PLAN	
Responsible Authority:	Scottish Government (Marine Directorate)
Title of the plan:	A consultation on proposals for sandeel management measures: extension of existing closure to all Scottish waters
What prompted the plan: (e.g. a legislative, regulatory or administrative provision)	The Scottish Government does not support fishing for sandeel in Scottish waters. This is linked to wider environmental and ecosystem considerations. The Scottish Government therefore considers that additional management measures for sandeel fishing need to be applied to protect the species and to provide wider ecosystem benefits.
Plan subject: (e.g. transport)	Fisheries
Screening is required by the Environmental Assessment (Scotland) Act 2005. Based on Boxes 3 and 4, our view is that:	☒ **An SEA is required, as the environmental effects are likely to be significant:** Please indicate below what Section of the 2005 Act this plan falls within ☐ Section 5(3) ☒ Section 5(4)
Contact details:	Louise Cameron Marine Species – Policy Manager Scottish Government | Marine Directorate | Funding & Strategy Louise.cameron3@gov.scot
Date:	19/05/2023

STEP 2 – CONTEXT AND DESCRIPTION OF THE PLAN	
Context of the Plan:	a) Sandeel is a key species in the Scottish marine ecosystem. It is an important prey species for many marine predators including seabirds. b) The UK position on fishing opportunities for North Sea sandeel is informed by the importance of the species to the wider ecosystem. c) The UK has not allocated sandeel quota since 2021, and a large part of the sandeel fishing grounds within UK waters are already closed to fishing. Our shared goal is to better manage fishing for sandeel for all vessels fishing within the UK Exclusive Economic Zone. d) This position is reflected in Scotland's Fisheries Management Strategy 2020-2030, where the Scottish Government commits to work with stakeholders to deliver an ecosystem-based approach to management, and where appropriate restrict fishing activity and prohibit fishing for species which are integral components of the marine food web, such as sandeel. e) North Sea sandeel is jointly managed stock between the UK and the EU. Under the UK/EU Trade and Cooperation Agreement (TCA) , the UK has a 2.97% share and the EU a 97.04% share of the Parties' combined sandeel quota in 2023. f) The Total Allowable Catch (TAC) is set during the in-year consultations, followed by the ICES advice release. This is an important fishery to the EU, and as a result of the negotiations this year, the TAC has been set at 194,367 tonnes which is 3% lower for areas 1r and 4 (UK waters) than the ICES advice. Under the rules of the TCA, EU vessels have 100% access to UK waters and UK vessels 100% access to EU waters. g) There is a sandeel closure in sandeel management area 4 since 2000 and the UK has not allocated sandeel quota since 2021. The Scottish Government has committed to considering what additional measures beyond these could be introduced to better manage fishing for sandeel in Scottish waters, with the aim to benefit both North Sea sandeel stocks and the wider ecosystem, including sensitive marine species.

Description of the Plan:	a) The Scottish Government has committed to considering what additional measures could be introduced to better manage the sandeel fisheries in Scottish waters, with an aim to benefit both North Sea sandeel stocks, and the wider ecosystem. b) Based on the scientific information available there is evidence to suggest that extending the existing sandeel closure to all Scottish waters may benefit the stock and wider ecosystem. c) Taking into consideration the foraging ranges of key predator species such as seabirds, marine mammals and whitefish stocks, the Scottish Government therefore proposes extending the existing sandeel closure to all Scottish waters. d) The recommendation is informed by the potential benefits to the wider marine ecosystem.
What are the key components of the plan?	a) Taking into considerations the pressures facing key predator species such as seabirds, marine mammals and white fish stocks, the Scottish Government proposes extending the existing sandeel closure to all Scottish waters. b) As sandeel is not a mobile species, the proposed extension will be all-year round closure. c) Currently, we envisage that this measure will be introduced through the implementation of a licence condition applicable to all vessels fishing within UK waters. Full consideration to all options will be given following the consultation.
Have any of the components of the plan been considered in previous SEA work?	Yes. These components were considered for the SEA 'Sandeel management measures: extension of existing closure in Scottish waters of sandeel area 4 by 1° longitude'.
In terms of your response to Boxes 1 and 2 above, set out those components of the plan that are likely to require screening:	Biodiversity, flora and fauna. Water quality, resources, ecological status.

STEP 3 – IDENTIFYING INTERACTIONS OF THE PLAN WITH THE ENVIRONMENT AND CONSIDERING THE LIKELY SIGNIFICANCE OF ANY INTERACTIONS (Error! Reference source not found.**)**

	Environmental Topic Areas

Plan Components	Biodiversity, flora and fauna	Population and human health	Soil	Water	Air	Climatic factors	Material assets	Cultural heritage	Landscape	Inter-relationship
Policy Provisions	✓	✘	✘	✓	✘	✘	✘	✘	✘	✘

Explanation of Potential Environmental Effects
&
Explanation of Significance

Intended environmental effects:

a) Sandeel fishing grounds: The proposed measures would cover all sandeel fishing grounds in Scottish waters. Restricting sandeel fishing therefore may benefit the health of the stock, which may lead to an increase in abundance (see Figure 1.).
b) Seabirds: The proposed measures would cover the distribution and foraging ranges of seabirds such as kittiwakes, guillemots, puffins, and gannets, for which sandeel is a key prey species.
c) Marine mammals: Sandeel is also a prey species for marine mammals (grey seals, harbour porpoise) which are also present in the area that would be included in these measures.
d) Whitefish species: Sandeel is a prey species for some whitefish species (cod, whiting, haddock). Restricting sandeel fishing will also reduce bycatches of whiting and mackerel, as these bycatches are currently taken in the sandeel fishery, and counted against the sandeel quota.
e) MPAs: The extension of the current closed area to all Scottish waters would mean that this would several Marine Protected Areas (MPAs) for which sandeel are a protected feature. These MPAs are Mousa to Boddam NC MPA, North-west Orkney NC MPA and Turbot Bank NC MPA.
f) Good environmental status: Better management of sandeel fisheries in Scottish waters will make a significant contribution to achieving good environmental status.

Possible untended environmental effects:

a) Sandeel in area 4 is a single stock. The TAC for sandeel area 4 covers the whole area, without taking into account the existing closure within the area, therefore some fishing effort is currently displaced without regard to the potential effects on local depletion. Consideration was given to possible further displacement of fishing effort as a result of an extension to the closed area. It is possible that closure of the sandeel fishery in all Scottish waters would mean that some activity is displaced into the portion of sandeel area 4 that extends into English waters. However, it is difficult to quantify to what extent fishing patterns in the area will change as a result of displacement, or if fishing will simply decrease. Displacement can be assessed using VMS data which is already available for all vessels in the fishery. Furthermore, the UK government launched a consultation on the management of sandeel in English waters on 7 March 2023. This proposes a closure of all sandeel fishing in English waters. If this proceeds, then this would mitigate the risk of displacement of activity into English waters. On the other hand, closure of the sandeel fishery in English waters may risk

	displacement of fishing activity into Scottish waters if the option to close the sandeel fishery in Scottish waters is not pursued. Catching levels are set in line with the agreed TAC level flowing from the UK-EU Bilateral Agreement, meaning that there will be no increased fishing pressure in the area as a whole.

STEP 4 – STATEMENT OF THE FINDINGS OF THE SCREENING

Summary of interactions with the environment and statement of the findings of the Screening:	Based on the above evaluation and fuller consideration of the potential scope and content of the extension of the existing sandeel closure to all Scottish waters, the Scottish Government has concluded that they may give rise to environmental benefits. We are unsure as to whether or not these will be significant. As a result, the Scottish Government is of the opinion that an SEA is required to review the extension of existing closure in sandeel area 4 to all Scottish waters. The views of the Consultation Authorities are now sought, under Section 9 of the Environmental Assessment (Scotland) Act 2005.