Ythan Estuary, Sands of Forvie and Meikle Loch Special Protection Area proposed marine extension

Advice to Support Management

Advice under Regulation 33(2) of the Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)
<table>
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<th>Date</th>
<th>Author</th>
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<td>07/05/15</td>
<td>Malcolm Fraser</td>
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<td>Version 2</td>
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<td>Malcolm Fraser</td>
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<td>Version 10</td>
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<td>Susan Luurtsema</td>
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<tr>
<td>Version 13</td>
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### Distribution list

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Protection Area (SPA) ........................................................................................................ 29
Further information on Special Protection Areas, the wider network and protected areas management is available on the Scottish Natural Heritage website.

The following documents provide further information about the features, evidence and assessment of the proposed extension to the Ythan Estuary, Sands of Forvie and Meikle Loch SPA and should be read alongside this paper:

- Site selection document
- Marine SPA stakeholder workshop summary report
- Consultation overview document
Purpose of advice

This is a working document that has been produced to support initial discussions with stakeholders about management of activities associated with this proposed marine extension during the formal consultation. It sets out the draft conservation objectives for the qualifying features and these provide the starting point for considering whether additional site management is required. This document also sets out management options based on our current understanding of the sensitivities of the qualifying bird species and their supporting habitats to marine activities. The development of site management is an ongoing process which will continue after classification.

This paper covers a range of different activities and developments but is not exhaustive. It focuses on where we consider there could be a risk in terms of achieving the conservation objectives. The paper does not attempt to cover all possible future activities or eventualities (e.g. as a result of accidents), and whilst it identifies activities that could contribute to cumulative effects relating to the qualifying species, we do not at this stage have the information to carry out detailed assessments.

Site summary

Ythan Estuary, Sands of Forvie and Meikle Loch Special Protection Area (SPA) proposed marine extension comprises an area of 60.51 kilometres squared (km²). The site is a marine extension to the terrestrial Ythan Estuary, Sands of Forvie and Meikle Loch SPA and encompasses the marine waters within 3km of the coast stretching from Aberdeen harbour northwards to Cruden Bay (Map 1).

The qualifying features of the proposed marine extension are:
- Sandwich tern (breeding)
- little tern (breeding)

The foraging area supports 7% (1125 pairs) of the breeding British (GB) population of Sandwich tern which is the largest breeding colony in Scotland. It is also an important foraging area for 2% (41 pairs) of the GB breeding population of little tern, one of the largest breeding colonies in Scotland¹.

The existing SPA covers a complex area of sand dunes, shingle, saltmarsh, mudflats, sandbanks and other coastal habitats. Sandwich tern and little tern nest in the dune systems at the Sands of Forvie and on the beach at the mouth of the Ythan.

The marine waters along this north-east coast are relatively shallow and sandy sediments dominate the sea bed. The seas off this coastline support a wide diversity of fish species including mackerel, herring, cod, whiting, haddock and sandeels. Many of these species spawn in the area or have inshore nursery areas.

¹ Further information on source of population estimates is provided in the Site Selection Document.
Both Sandwich and little tern feed on small fish, plunging into the sea from aerial dives to catch their prey. The estuary and adjacent coastal waters close to their nesting grounds provide important feeding grounds for these breeding populations.

The main activities within these waters are fishing and relatively low key recreational activities. The Aberdeen Bay European Offshore Wind Deployment Centre (EOWDC) site partly overlaps the proposed marine extension area, there are also oil and gas pipelines crossing the north end of the marine extension area.
Map 1. Location of Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension
Species distribution within the site

The distribution of qualifying species within the site is illustrated in Map 2. Spatial species distributions are delineated using the species-specific boundaries illustrated in the Site Selection Document. They show the areas where densities exceeded a modelled threshold (maximum curvature). Species are likely to be present outwith these areas in lower numbers. We have not attempted to display densities of the species within the species-specific boundaries; these are available in the Site Selection Documents. Species densities are not uniform within the boundaries and we anticipate that some locations within the individual boundaries will be more, or less important than others.

All species are protected throughout the whole site irrespective of the species-specific distributions. These species-specific distributions represent our most recent knowledge of areas with high densities of Sandwich tern and little tern within the proposed extension to the SPA, and are the focus for protection. Accordingly, we have based our management options advice on the species-specific boundaries. When considering future plans or projects, these distributions will be the starting point for making an assessment of the impacts of proposals and would be informed further by surveys.
Map 2. Important foraging areas for breeding Sandwich tern and little tern within the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension
Conservation objectives

The role of conservation objectives

This section sets out the draft conservation objectives for the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension. These have been developed by SNH and the Joint Nature Conservation Committee (JNCC) in consultation with Marine Scotland. The draft conservation objectives endeavour to comply with the European Commission’s guidance note (2012) on setting conservation objectives.

The conservation objectives set out the essential elements needed to ensure that the qualifying features are maintained or restored on the site. The conservation objectives are designed to ensure that the obligations of the Birds and Habitats Directives can be met; that is, if all the conservation objectives are met, then the integrity of the site will be maintained, and deterioration or significant disturbance of the qualifying interests avoided.

The conservation objectives form the framework for establishing appropriate management measures and assessing all future plans and projects that have the potential to affect the qualifying features of the site. Should the site be classified, the management requirements and any future plans or projects would be assessed against these conservation objectives.

The conservation objectives will be finalised at the time of site classification.

Draft conservation objectives

The purpose of this proposed SPA is to enable the application of special conservation measures concerning the marine habitat of Annex 1 birds and regularly occurring migratory birds\(^2\), to ensure their survival and reproduction in their area of distribution.

The conservation objectives are set out in bold with supplementary advice provided in the boxes below. Our intention is to provide policy guidance on the conservation objectives which will provide more site-specific advice.

This marine extension has been specifically selected to protect:

- foraging habitat used by Sandwich tern and little tern breeding at the Ythan Estuary, Sands of Forvie and Meikle Loch SPA.

The conservation objectives for the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension are:

To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, subject to natural change, thus ensuring that the integrity of the site is maintained in the long-term and it continues to make an appropriate contribution to achieving the aims of the Birds Directive for each of the qualifying species.

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\(^2\) Article 4 of the Birds Directive requires important areas for rare and sensitive birds (identified in Annex 1 of the Directive) and regularly occurring migratory birds to be classified.
Marine bird species are exposed to a range of wider drivers of change. Some of these are natural (e.g. population fluctuations/shifts or habitat changes resulting from natural processes) and are not a direct result of human influences. Such changes in the qualifying species' distribution and use of the site which are brought about by entirely natural drivers, directly or indirectly, are considered compatible with the site’s conservation objectives.

There may also be wider ranging anthropogenic impacts driving change within the site, such as climate change or in some cases fisheries stock management, which cannot be managed effectively at site level.

In reality any assessment of whether a change is natural will need to be assessed in the context of each individual site.

This contribution will be achieved through delivering the following objectives for each of the site's qualifying features:

   a) Avoid significant mortality, injury and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term;

   The purpose of this objective is to avoid significant mortality, injury or disturbance of qualifying species that negatively affect the site on a long-term basis. Such an impact would have a detrimental effect on the contribution that this site makes to the maintenance of qualifying species at appropriate levels (Article 2 of the Birds Directive) in their natural range in UK waters and therefore should be avoided.

   This site supports 1% or more of the GB populations of Sandwich tern and little tern.

   For this site “significant” is taken to mean anthropogenic mortality, injury or disturbance that affect the qualifying species distribution and use within the site such that recovery cannot be expected or effects can be considered lasting. An appropriate timeframe for recovery will need to be considered in the context of the life history traits of the species and the impact pathways being assessed.

   All birds require energy which they obtain from food, to survive and to breed. Significant disturbance can include displacement and barrier effects on the species. Where such disturbance is brought about by human activities which affect the qualifying species’ distribution and use of the site, such that their ability to survive and/or breed is compromised in the long-term, it is considered significant.

   For each qualifying species, the ability to use the site should be maintained.

   Further advice on ecological use of the site including: occupancy, foraging areas, flightless moulting periods and appropriate recovery timeframes will be provided in policy guidance to support the interpretation of the conservation objectives.
b) To maintain the habitats and food resources of the qualifying features in favourable condition.

The qualifying bird species using the site require sufficient food resource to be available. Sandwich and little tern eat a variety of pelagic prey and these should be maintained at a level able to support species populations. Some of these prey species have particular habitat requirements and where this is the case, the site needs to be managed to ensure the extent and quality of the habitats are sufficient to maintain these prey species.

For the purposes of Habitats Regulations Appraisal (HRA) consideration of the conservation objectives will be required for plans / projects inside and outside the site.

Management Options

This section sets out SNH’s advice on management. This provides a starting point for discussing any management that might be required. Should the site be classified discussions on management will be led by the relevant authority and will involve stakeholders.

Purpose of management options

Management options are developed where we consider that some form of management may be necessary to achieve the conservation objectives for each qualifying feature. The approach to identifying management options for each activity is risk-based: i.e. we are focused on providing advice where we believe there is a risk to achieving the conservation objectives for the site. To do this we are using the best scientific data available at the time of writing. The management options may be informed by discussion with stakeholders. If new information becomes available during the consultation, the management options may be revised.

The information below (at pre-classification stage) is general and not exhaustive, and is provided to assist and focus stakeholders and authorities in their consideration of the management of these operations. All new plans and projects will still need to be considered by the relevant competent authority, and detailed advice from SNH on such proposals will be provided on a case by case basis (further detail is provided in Annex 1). The level of any impact will depend on the location, scale, nature and intensity of the relevant activity.

Management options are focused on the activities that cause an effect (a pressure) that a feature is sensitive to. Pressures can be physical (e.g. abrasion of the seabed), chemical or biological. Different activities may cause the same pressure, e.g. fishing using bottom gears and aggregate dredging both cause abrasion which can damage the seabed habitats of the prey species that marine birds depend upon.

An assessment of the sensitivities of qualifying bird species to various pressures is provided in FEAST available on the Marine Scotland website. Similar assessments for supporting habitats are also available in FEAST. These sensitivities reflect our

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3 Features, Activities, Sensitivity Tool
current general understanding of the associations between activities, pressures and features and support the first steps of the assessment of risk to the features in the pSPA. In some cases, there is not enough evidence to quantify the level of sensitivity that a feature has to a particular pressure however a potential sensitivity is still recognised. This advice along with the supporting databases should be used by authorities to inform the management of any activity impacting upon the site’s features or supporting features.

Marine activities are listed in Table 1 if any of the qualifying species of the site are assessed as having a high or medium sensitivity to the pressures arising from the activity. These activities therefore present a risk to achieving the conservation objectives.

Management options to manage the risk are recommended for each activity with specific details provided in the following sections. Overlap between different activities/known developments and the proposed qualifying features are described and where appropriate mapped. The text focuses on interactions in terms of physical overlap but the assessment of risk in future should also take account of the intensity, frequency of activities within the site and condition of the qualifying species.

Our advice in relation to disturbance is not about preventing or reducing the disturbance of individual animals *per se*, but about ensuring that any disturbance that does occur is not at a level that disrupts or prevents the key life cycle activities of the proposed qualifying species, including continued access to the site and the resources upon which they depend. To simplify discussion in this document, we use the term ‘risk to the conservation objectives’ as a short hand for this. Where we are describing known effects on individual animals as part of the evidence behind our advice, then we make this clear.

SNH has identified a range of management options that may be applied:

- management to remove or avoid pressures
- management to reduce or limit pressures
- no additional management required

Where we advise ‘reduce or limit’ pressures, there are choices around how this could be achieved for a given activity e.g. we could reduce the intensity of an activity and/or limit the activity to certain parts of a site.

We have identified management options and stated whether they are ‘recommended’ or should be ‘considered’ where:

**Recommended** - highlights that an activity-feature interaction exists, there is a reasonable evidence base and a specific recommendation for action can be made / justified.

**Considered** - highlights that an issue exists, but a lack of evidence upon which to base an assessment of risk means that a specific recommendation for action cannot / or need not be made at this point. However, there is sufficient cause to make managers aware of the issue, and for them to investigate possible further work to better understand the issue, including whether a management measure or best practice guidance may be helpful in achieving conservation objectives.
This approach has been agreed with Marine Scotland to ensure consistency in our advice between different sites and features.

We recognise that stakeholders can provide local environmental knowledge and more detailed information on activities, including in relation to intensity, frequency, and methods. This additional information will help us to develop more specific management options, focused on interactions between features and activities. Management options for the site will be agreed with stakeholders following classification.

**Existing species protection**

Marine bird species in Scotland are protected everywhere from intentional/deliberate or reckless killing or injuring under the provisions of Article 5 of the Birds Directive and Article 1(1) of the 1981 Wildlife and Countryside Act (as amended).

Sandwich tern and little tern are existing qualifying features of the Ythan Estuary, Sands of Forvie and Meikle Loch SPA. The proposed marine extension represents important marine foraging areas for these birds. In these cases, a large part of the conservation requirements of these species is already covered by existing requirements for assessments against existing SPAs.

Marine site protection in addition to existing SPA protection recognises the true value of the foraging areas for breeding birds and provides JNCC, SNH and regulators with opportunities to work together with stakeholders to review the management required to safeguard the relevant qualifying species. It also provides the levers for ensuring these positive management measures are undertaken if required. Furthermore site protection of the foraging area places a statutory duty on JNCC and SNH to monitor its use and condition regularly. This means that any damage to the habitat can be identified relatively early and management measures put in place compared to the current situation. In addition, this monitoring requirement will mean that the success of existing management measures can be verified.

A map showing neighbouring and overlapping protected areas is provided at Annex 2.

**Overview of activities**

Table 1 below lists the activities that currently take place and are likely to occur in the future within or close to the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension.

Activities that we consider likely to affect the proposed qualifying features are explored in more detail in the sections on individual activities. Activities that the proposed qualifying features are not thought to be sensitive to will not be considered further within this document. Table 2 is not exhaustive, further discussions with those who use the area are required to improve our understanding of current activities (e.g. locations, extent and intensity). New or other activities not identified within the table would need to be considered on a case-by-case basis. For the purposes of our initial advice, we have concentrated on those activities most likely to occur within the proposed SPA.
The initial advice provided in this document does not preclude the requirement for all new projects and plans to undergo a Habitats Regulations Appraisal (HRA) by the relevant competent authority. Equally it does not preclude the requirement for competent authorities to carry out a review of existing consents, permissions and/or licences (see Annex 1 for further details). We would however anticipate that for activities not covered by this document and for existing activities where we have identified no additional management that impacts from these activities on the qualifying features can be scoped out at an early stage of the HRA. Early engagement with SNH and/or the relevant competent authority is recommended to ensure HRA requirements for plans and projects are scoped appropriately and unnecessary costs are avoided.

Table 1. Overview of activities with the potential to affect the qualifying features of the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension

<table>
<thead>
<tr>
<th>Activities considered likely to affect the qualifying features</th>
<th>Activities not considered likely to affect the qualifying features (other than insignificantly)⁴</th>
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<tr>
<td><strong>Fishing - mobile gear</strong></td>
<td><strong>Fishing - mobile gear</strong></td>
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<td>• Benthic trawls</td>
<td>• Line fishing</td>
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<tr>
<td>• Mechanical and hydraulic benthic dredging</td>
<td><strong>Fishing – static gear</strong></td>
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<tr>
<td>• Pelagic trawls and seines</td>
<td>• Drift nets</td>
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<tr>
<td><strong>Ports and harbours</strong></td>
<td>• Bottom set nets (incl. fyke nets)</td>
</tr>
<tr>
<td>New developments -</td>
<td>• Creels (including lobster, crabs and <em>Nephrops</em>)</td>
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<tr>
<td>• Aberdeen, Collieston, Newburgh, Port Erroll and Whinnyfold</td>
<td><strong>Infrastructure</strong></td>
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<tr>
<td><strong>Recreational activities – increase in activities</strong></td>
<td>• Coast protection and flood defence structures</td>
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<td>• Boating</td>
<td><strong>Navigational and maintenance dredging</strong></td>
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<td>• Diving</td>
<td>• existing maintenance dredging (Aberdeen harbour)</td>
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<td><strong>Renewables</strong></td>
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<td>• Wind energy developments</td>
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⁴ Only the specific examples of activities listed in the table have been excluded, rather than the broad activity types. New plans or projects will still need to be considered by the relevant competent authority (see Annex 1 for further details).
**Introduction to fishing activities**

In providing our advice on management options for fishing activities, we have focused on what we know about the sensitivities of the proposed qualifying features to different types of fishing activity and whether or not that fishing activity may affect the achievement of the site’s conservation objectives. This initial advice is based on expert judgement. More information on the specific characteristics of the various fisheries and therefore their specific interactions with the qualifying species is required. Discussions with those involved with fishing within or adjacent to the site will be important for completing the assessment of the extent to which these features may actually be affected by fishing activities.

Our current understanding of fishing activities within the SPA proposed marine extension is based on the information provided in the Business and Regulatory Impact Assessment (BRIA) for the Ythan Estuary, Sands of Forvie and Meikle Loch SPA. The BRIA identifies that pots, lines, dredges, *Neprops* trawls, whitefish trawls and other gears operate within the boundary of the proposed marine extension.

**Activities not considered further:**

Pelagic long-line and bottom-set long-line fisheries are largely restricted to offshore waters and therefore at present pose a low risk to the qualifying species.

Fishing using creels is likely to be widespread throughout the site. Whilst there is the potential for some mortality through entanglement for some species the occurrence is rare and therefore we consider this method poses a low risk to the qualifying species.

Whilst there is the potential for some mortality of Sandwich tern and little tern, through entanglement in static gear, the occurrence is rare and therefore we consider this method poses a low risk to the qualifying species.
Fishing – mobile gear

This section considers fishing by benthic (mechanical or hydraulic) dredges, benthic trawls, pelagic trawls and seines.

**Benthic dredges and trawls**

Benthic dredging includes both hydraulic dredges and simple mechanical dredges used for targeting scallops, mussels and other bivalves, including cockles. Benthic trawls include the various types of bottom-contacting, active gears, such as otter (single-rig and multi-rig, pair trawling, semi-pelagic), beam and bottom contacting seines e.g. Scottish seine/anchor seine.

Sandwich tern and little tern are considered sensitive to pressures associated with benthic dredging and trawls. Our initial assessment identifies the following pressures associated with these fisheries:

- Mortality – by-catch through entanglement.
  Sandwich tern and little tern are sensitive to entanglement in fishing nets. However, numbers caught as by-catch in benthic trawls is considered to be low.

- Removal of prey species.
  Sandwich tern and little tern are considered indirectly sensitive to pressures that have the potential to reduce the availability of important food resources, particularly sandeel.

- Abrasion to supporting habitats for prey species.
  Sandwich tern and little tern are considered indirectly sensitive to pressures that could reduce the extent of or damage to supporting habitat for prey species and therefore have the potential to reduce the availability of important food resources.

The key pressure associated with benthic dredging and trawling is the potential to reduce the amount and/or quality of prey available to Sandwich tern and little tern through removal of their fish prey species. Benthic dredging and trawling therefore pose a risk to the conservation objectives if these activities cause a significant reduction in prey availability, either by direct removal or changes to the prey-supporting habitat.

Sandeels are an important prey species for terns and are known to be highly sensitive to the pressures associated with targeted sandeel fishing i.e. sandeel abundance can be affected by targeted fishing. There is currently no targeted fishery for sandeels within the pSPA, this position should be retained.

Benthic dredging can also cause abrasion to the sea bed surface which has the potential to affect the availability of suitable prey species. However, because we know less about the extent of interactions between benthic fisheries and prey species and their supporting habitats, we have not currently identified a site-based management option. We recommend that a principal objective of the management
of the relevant fisheries should be to ensure that the fishing activity does not cause damage to the benthic habitats and associated prey species such that it adversely affects the availability of prey to Sandwich tern and little tern.

It is possible that on the basis of future research, additional site-based management may be required but based on our current understanding, we think it is appropriate that management continues to take place at a wider scale.

**Pelagic trawls and seines**

Species such as Sandwich and little tern that plunge diver into the water column to catch fish prey are considered sensitive to pressures associated with pelagic trawls and seines. Our initial assessment identifies the following pressures associated with these fisheries:

- **Mortality – by-catch through entanglement**  
  Sandwich tern and little tern are sensitive to entanglement in fishing nets. Numbers however caught as by-catch in pelagic trawls and seines are considered likely to be low.

- **Removal of prey species**  
  Sandwich tern and little tern are indirectly sensitive to the removal of fish prey, such as herring and sprat, as targeted species from fisheries activities.

The key pressure associated with pelagic trawls and seines is the potential to reduce the amount of prey available through removal of prey species from the water column. Pelagic trawls and seines therefore pose a risk to the conservation objectives if these activities cause a reduction of prey availability.

Whilst we know that fishing activity will reduce the amount of prey species, we do not know enough about what level of stock reduction would cause a significant reduction in prey availability that would then pose a risk to conservation objectives. However, prey species are mobile and, consequently so is bird foraging activity. We have therefore not identified a site-based management option for pelagic fisheries because management of these fisheries takes place at a wider scale.
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<th><strong>Recommended management option:</strong></th>
<th><strong>Remove or avoid pressures:</strong></th>
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<tr>
<td></td>
<td>Removing or avoiding pressures associated with fishing for sandeels is recommended.</td>
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<tr>
<td></td>
<td><strong>Reduce or limit pressures:</strong></td>
</tr>
<tr>
<td></td>
<td>Removing or avoiding pressures associated with fishing that has the potential to damage sandeel habitat should be considered.</td>
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We have not identified a site-based management option for pelagic fisheries because management of these fisheries takes place at a wider scale.

We have not identified a site-based management option for benthic fisheries because there is currently insufficient information available.

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<table>
<thead>
<tr>
<th><strong>Proposed way forward:</strong></th>
<th>Pelagic fishing for herring/sprat may occur within or around the pSPA. We recommend that a principal objective of the management of the fishery should be ensuring that the fishing activity does not prevent or disrupt the availability of prey species for Sandwich tern and little tern i.e. it should be considered as part of a broader ecosystem-based approach to management of this fishery.</th>
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<tr>
<td></td>
<td>Similarly, whilst we know less about the extent of interactions between benthic fisheries and prey supporting habitat, we recommend that a principal objective of the management of the relevant fisheries should be to ensure that the fishing activity does not cause such damage to the benthic habitats that it adversely affects the availability of prey for Sandwich tern and little tern.</td>
</tr>
<tr>
<td></td>
<td>Additional research is required to better understand the relationships between the impact of dredging and benthic trawling on supporting habitats, their ability to support suitable prey and any consequential effect this may have on the birds.</td>
</tr>
<tr>
<td></td>
<td>Where management measures are required, the development of these would be undertaken via discussion with the relevant industries and scientific organisations. Marine Scotland and/or the relevant authority will lead the development of specific management measures.</td>
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| **Relationship with existing management:** | The marine extension lies within the North-east UK sandeel closure (CA1) area. |
Ports and harbours

This section encompasses ports and harbour related activities both existing and potential future proposals that occur within harbour and port statutory limits and that could affect the qualifying features of the proposed marine extension.

The coastal boundary of the proposed marine extension follows the mean low water springs (MLWS). All permanent man-made hard structures (infrastructure) that protrude from land i.e. jetties, piers, harbour walls, ferry terminals, slipways and docks within statutory limits are excluded from the proposed marine extension.

Anchorages with floating buoys or moorings are not excluded from the proposed marine extension boundary as these are floating structures around which the qualifying species can still forage.

All of the qualifying features of the proposed marine extension are considered sensitive to pressures associated with various ports and harbour activities. Our initial assessment identifies the following pressures:

- Disturbance – new development.
  Terns are considered to be sensitive to disturbance created by construction activity.

New developments within port and harbour limits pose a risk to the conservation objectives because of the sensitivities of terns to disturbance.

Existing ports and harbour operations

The proposed marine extension encompasses/or is close by to a number of ports and harbours limits including Aberdeen, Collieston, Newburgh, Port Erroll and Whinnyfold. These are associated with the fishing industry, commercial shipping and ferry transport.

It is not anticipated that any additional management measures will be required for the current level and range of operations and licenced activities within existing port and harbour limits.

Vessel movement

Terns are considered not sensitive to disturbance associated with vessel movements. Therefore, the current patterns and levels of vessel movement associated with ports and harbours activities are not anticipated to pose a risk to the conservation objectives.

Development or expansion of ports and harbours

All new development, expansion proposals and/or changes in intensity of use should be considered as a new plan or project and undergo a HRA. The level of potential impacts and therefore management advice depends on the scale, location, type and intensity of use of any future proposals. Such development or expansion has the potential to impact upon the proposed marine extension (as well as existing SPAs). To inform a HRA bird surveys may be required in the area proposed for development.
Appropriate mitigation to reduce or limit pressures associated with new development proposals on the qualifying species may include:

- spatial limitations to avoid foraging areas and/or;
- seasonal restrictions to avoid periods when birds are present.

We advise that in developing any proposals within or adjacent to the proposed marine extension, the applicant should enter into early discussions with both Marine Scotland and SNH to ensure that a HRA is scoped adequately, including considerations regarding the potential for cumulative impacts.

Activities not considered further:

**Anchorages & moorings**

We are not aware of any pressures that pose a risk to the conservation objectives.

<table>
<thead>
<tr>
<th>Recommended management option:</th>
<th>No additional management – existing operations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There should be no additional management requirements for established activities at ports and harbours within the proposed marine extension. This includes seasonal restrictions.</td>
</tr>
</tbody>
</table>

**Reduce or limit pressures – new development:**

Reducing or limiting pressures associated with new development proposals or expansion of ports and harbours within or adjacent to the proposed marine extension should be considered.

<table>
<thead>
<tr>
<th>Proposed way forward:</th>
<th>All new plans and projects will require a HRA. Early discussions with both Marine Scotland and SNH to ensure that a HRA is scoped adequately, including considerations regarding the potential for cumulative impacts is recommended.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Where management measures are required, the development of these would be undertaken via discussion with Harbour Authorities, Marine Scotland and SNH.</td>
</tr>
</tbody>
</table>
Recreational activities

Most current recreational activities within the proposed marine extension are low key and restricted in distribution; however they predominately occur through the summer and autumn months when the breeding terns are present.

Sandwich tern and little tern are considered sensitive to pressures associated with recreational activities; these are mostly associated with disturbance at the colony. Our initial assessment identifies the following pressures:

- Disturbance - through displacement from foraging areas.

Terns are considered sensitive to disturbance from water-borne recreational activities around areas they use for foraging. Prolonged activity around foraging areas can lead to displacement from these areas and so reducing the bird’s ability to feed. During the breeding season, when adults are feeding chick this can be costly for the birds, requiring them to use valuable energy reserves finding alternative places to feed.

Increase in activities

Most water-borne activities occur during the summer when terns not present. Should there be evidence of pressures at particular locations and/or if there is major increase in intensity of these pursuits within the proposed marine extension there may be a requirement to consider reducing pressures.

Sea kayaking, yachting, diving, angling and wildlife tour operators

Current patterns and levels of these recreational activities are not anticipated to pose a risk to the conservation objectives.

<table>
<thead>
<tr>
<th>Recommended management option:</th>
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<td>There should be no additional management requirements’ providing the Scottish Marine Wildlife Watching Code is followed by water-borne recreational users and Wildlife tour operators.</td>
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</table>

| Reduce or limit pressures – increase in activity | Reducing or limiting disturbance of terns by water-borne recreational activities should be considered if there is evidence of existing pressures at particular locations and/or if there is major increase in intensity of these pursuits within the SPA proposed marine extension. |

Proposed way forward:

Continue to promote best practice guidance and raise awareness of avoiding disturbance to breeding birds with representatives from relevant organisations.

Where management measures are required, the development of these would be undertaken via discussion with the relevant industries and scientific organisations.
Marine Scotland and/or the relevant authority will lead on the development of specific management measures.

| Relationship with existing management: | Recreational boat users generally view wildlife as a positive part of their experience on the water. If disturbance does occur, this is often as a result of lack of understanding of the bird’s behaviour or how human activities can affect a bird’s well-being. Awareness-raising and education are therefore an important part of existing management. The following best practice guidance is available: 

*The Scottish Marine Wildlife Watching Code (SMWWC)* highlights why breeding birds are sensitive to disturbance and offers practical advice on how to avoid disturbance.

More information on the Code can be found at [www.marinecode.org](http://www.marinecode.org) |
Map 4. Recreational activities within the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension
Introduction to renewables activities

Renewable marine energy encompasses offshore wind (fixed and floating technologies, wave and tidal (stream and barrage) developments. Development areas have been identified through previous Crown Estate leasing rounds, option areas in the draft Sectoral Plans produced by Marine Scotland and or individual developers prospecting and locating suitable sites, particularly for small scale demonstration sites.

Offshore wind technology is a proven technology; however more recently drivers to reduce build out costs have introduced more novel technology in terms of turbine types and also in the foundations being used. Wave technology is still being developed and whilst there have been some applications for commercial scale arrays, the technology is still in its infancy and only small scale demonstration and prototype devices have been successfully deployed to date. Tidal stream is further advanced than wave technology but is still reasonably novel with considerable areas of uncertainty surrounding how animals interact with turbines. Interest in Scottish waters for tidal barrage schemes is considerably lower than in the rest of the UK.

This section provides information on marine renewable interests - both existing and planned that could affect the qualifying interests of the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension. Consideration has been given to the draft Sectoral plans - any identified options areas, leasing rounds, applications and also any consented developments.

There are no offshore wind, wave or tidal stream draft option areas identified in the respective draft Sectoral plans that overlap with the proposed marine extension. However, there is consented wind energy development within the proposed marine extension.

Sandwich tern and little tern are considered sensitive to pressures associated with wind renewable activities. Our initial assessment identifies the following pressures associated with wind and wave renewables:

- **Mortality – through collision**
  Terns are considered to have a high sensitivity to collision risk with wind turbines.

- **Disturbance - through displacement from foraging areas.**
  Terns are considered to have a medium sensitivity to disturbance and displacement from wind farms indicating that artificial structures may act as a barrier to movements.

- **Loss or damage to supporting habitat for prey species**
  Terns are considered indirectly sensitive to pressures associated with the loss or damage of supporting habitat for prey species and therefore potential reduction in food resources. Construction and installation of supporting infrastructure such as cables on the sea bed has the potential to cause an impact on the qualifying features however, the risk is considered to be low.
Wind energy

Consented wind development

There is one consented, but not yet constructed offshore wind development within the extension area – European Offshore Wind Deployment Centre in Aberdeen Bay. This development comprises 11 turbines and it is currently going through financial closure and finalising build out plans.

Marine renewable energy activities at the time of writing are shown in Map 5.

It is not anticipated that the operation of the wind farm, once constructed, will pose a risk to the conservation objectives.

New wind energy developments or expansion of consented schemes

New wind proposals within or close by to the proposed marine extension pose a risk to the conservation objectives because of the sensitivities of terns to collision and disturbance. All new development should be considered as a new plan or project and undergo a HRA. The level of potential impacts and therefore management advice depends on the scale, location, type and intensity of use of any future proposals. To inform a HRA it is likely that a bird survey will be required in the area proposed for development.

Appropriate mitigation to reduce or limit pressures associated with new wind proposals on the qualifying features may include:

- spatial limitations and/or;

We advise that in developing any proposals close to the proposed marine extension, the applicant should enter into early discussions with both Marine Scotland and SNH to ensure that a HRA is scoped adequately, including considerations regarding the potential for cumulative impacts.

| Recommended management option: | No additional management – consented schemes
No additional management required for the EOWDC. |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce or limit – new proposals:</td>
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</tr>
<tr>
<td></td>
<td>Reducing or limiting displacement pressures associated with wind turbines in areas identified as being important for Sandwich tern and little tern <strong>should be considered.</strong></td>
</tr>
</tbody>
</table>

Proposed way forward:

- Should any new proposals be brought forward within the proposed marine extension then these would need to be considered on a case by case basis.

- Where management measures are required, the development of these should be in discussion with the developer, regulator Marine Science Licensing and Operations Team (MS LOT) and advisers Marine Scotland
Science (MSS) and SNH.
Map 5. Wind renewable energy activities within the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension
# Summary of management options

<table>
<thead>
<tr>
<th>Fishing – mobile gear</th>
<th>Remove or avoid pressures:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Removing or avoiding pressures associated with fishing for sandeels <strong>is recommended.</strong></td>
</tr>
</tbody>
</table>

**Reduce or limit pressures:**
Removing or avoiding pressures associated with fishing that has the potential to damage sandeel habitat **should be considered.**

We have not identified a site-based management option for pelagic fisheries because management of these fisheries takes place at a wider scale.

We have not identified a site-based management option for benthic fisheries because there is currently insufficient information available.

<table>
<thead>
<tr>
<th>Ports and harbours</th>
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**Reduce or limit pressures – new development:**
Reducing or limiting pressures associated with new development proposals or expansion of ports and harbours within or adjacent to the proposed marine extension **should be considered.**

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**Reduce or limit pressures – increase in activity**
Reducing or limiting disturbance of terns by water-borne recreational activities **should be considered** if there is evidence of existing pressures at particular locations and/or if there is major increase in intensity of these pursuits within the SPA proposed marine extension.

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**Reduce or limit – new proposals:**
Reducing or limiting collision pressures associated with wind turbines for Sandwich tern and little tern **is**
Reducing or limiting displacement pressures associated with wind turbines in areas identified as being important for Sandwich tern and little tern should be considered.

Cumulative effects:

Potential cumulative effects are recognised for all new or increased activities identified under ‘Activities considered likely to affect the qualifying features’ in Table 1, and for activities sharing the following pressures:

Mortality:
- Fishing with mobile gear – through entanglement
- Wind energy – through collision with turbines.

Disturbance:
- Ports and harbours – through disturbance associated with new developments
- Recreational activities – through displacement from foraging areas.
- Wind energy – through displacement from foraging areas

Reduction in prey availability:
- Fishing with mobile gear – through direct removal of prey.

Before any firm recommendations are made, discussions should be held with stakeholders to ensure that there is a good understanding of the features and the likely interactions with activities. Marine Scotland will lead the discussions on management with stakeholders. These discussions will start during the formal consultation and, if necessary, may continue after the consultation. The discussions should lead to an improved understanding of the risk to the proposed qualifying features. The options presented here will then be reviewed by SNH and a preferred way forward may be recommended. This will form the basis of advice from SNH to Marine Scotland on the management measures required for this site should it be classified as an SPA marine extension.

Marine Scotland will be responsible for making recommendations to Scottish Ministers on any management measures that may be required. The development of these measures will be done through discussion with stakeholders after the formal consultation on the proposed extension. Should any management measures require statutory underpinning, Marine Scotland will undertake further consultation.
Annex 1. Background to the advice contained in this paper

The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended), commonly referred to as the Habitats Regulations, transpose the EC Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) into domestic legislation. Regulation 33(2) gives Scottish Natural Heritage a statutory responsibility to advise other relevant authorities as to the conservation objectives for European marine sites in Scotland, and any operations which may cause deterioration of natural habitats or the habitats of species, or disturbance of species for which the site has been designated.

This document presents the Regulation 33 advice, plus supporting information, for the Ythan Estuary, Sands of Forvie and Meikle Loch SPA proposed marine extension to assist relevant and competent authorities, local interest groups and individuals in considering management (including any management scheme) of the site. This advice will also help to determine the scope and nature of any "appropriate assessment", which the Habitats Directive requires to be undertaken for proposed plans and projects that are not connected to the conservation management of the site and are considered likely to have a significant effect. Where necessary Scottish Natural Heritage will also provide more detailed advice to relevant, and other competent, authorities to inform assessment of the implications of any such plans or projects.

Relevant and competent authorities

Within the context of a marine SPA, a relevant authority is a body or authority that has a function in relation to land or waters within or adjacent to the site (Regulation 5) and include: a nature conservation body; a local authority; water undertakers; a navigation authority; a harbour authority; a lighthouse authority; a river purification board (SEPA); a district salmon fishery board; and a local fisheries committee. All relevant authorities are competent authorities.

A competent authority is defined in Regulation 6 as "any Minister, government department, public or statutory undertaker, public body of any description or person holding a public office". In the context of a plan or project, the competent authority is the authority with the power or duty to determine whether or not the proposal can proceed.

The role of relevant authorities

The Habitats Regulations require relevant authorities to exercise their functions so as to secure compliance with the Habitats Directive. A management scheme may be drawn up for each European marine site by the relevant authorities as described under Regulation 34. For marine SPAs and SACs with overlapping interests, a single management scheme may be developed.

Where a management scheme is in place the relevant authorities must ensure that all plans for the area integrate with it. Such plans may include shoreline management plans, local Biodiversity Action Plans (BAPs) and sustainable
development strategies for estuaries. This must occur to ensure that only a single management scheme is produced through which all relevant authorities exercise their duties under the Habitats Regulations.

**Plans and projects**
The Habitats Regulations require that, where an authority concludes that a development proposal is unconnected with the nature conservation management of a Natura site and is likely to have a significant effect on that site, it must undertake an appropriate assessment of the implications for the qualifying interests for which the area has been designated.

**Review of Consents**
Competent authorities are required by the Habitats Regulations (Regulation 50) to undertake a review of relevant consents and permissions for activities affecting the site as soon as reasonably practicable after it becomes a European site.
Annex 2. Map showing protected areas that overlap or are near to the proposed marine extension to the Ythan Estuary, Sands of Forvie and Meikle Loch Special Protection Area (SPA)