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| **Title:** Teesmouth and Cleveland Coast Special Protection Area<br>**IA No:**<br>**RPC Reference No:**<br>**Lead department or agency:** Defra Marine Biodiversity<br>**Other departments or agencies:** Natural England | **Impact Assessment (IA)**<br>**Date: 08/03/2018**<br>**Stage: Consultation**<br>**Source of intervention: EU**<br>**Type of measure: Other**<br>**Contact for enquiries:** teesmouthandclevelandcoastspa@naturalengland.org.uk |

## Summary: Intervention and Options

**RPC Opinion:** Not Applicable

| Cost of Preferred (or more likely) Option | | | | |
|---|---|---|---|---|
| **Total Net Present Value** | **Business Net Present Value** | **Net cost to business per year** (EANDCB in 2014 prices) | **One-In, Three-Out** | **Business Impact Target Status** |
| £-1.530m | £-0.812 | £0.094m | n/a | Non Qualifying Provision |

**What is the problem under consideration? Why is government intervention necessary?**

Biodiversity is of high value to society and there is evidence that the quality of UK biodiversity has declined over recent decades. Market failure with regard the environment occurs because no monetary value is attached to many goods and services it provides and market mechanisms cannot ensure that actions are fully paid for by the users. Individuals do not have an economic incentive to contribute effort to secure their continued existence. It is necessary therefore for government to ensure that certain types of biodiversity are protected. To achieve government commitments under the European Council's Bird Directive (79/409/EEC) an extension to the Special Protection Area (SPA) is proposed at Teesmouth and Cleveland Coast.

**What are the policy objectives and the intended effects?**

Government aims to have 'clean, healthy, safe, productive and biologically diverse seas'. It is a priority for Government to establish and effectively manage a network of Marine Protected Areas (MPAs) that covers in excess of 25% of English waters The proposed SPA extension at Teesmouth and Cleveland Coast meets formal SPA selection guidelines and recommended for classification by Natural England. Classification will provide a high level of protection from degradation and contribute to meeting the UK's commitments to international agreements and obligations (including European Council's Directive 79/409/EEC on the conservation of wild birds "Birds Directive" and the Marine Strategy Framework Directive.

**What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)**

Only one policy has been considered: to classify the SPA extension. Other options are not considered because classification of the most suitable territories as SPAs for the conservation of regularly occurring migratory bird species is required under the Birds Directive. The seabird colony in the proposed SPA extension at Teesmouth and Cleveland Coast supports internationally important numbers of several regularly occurring migratory bird species during the breeding season (as outlined in the Departmental Brief). If the site is not designated, the condition of the features may be at risk of deterioration in the future which may include irreversible damage. Though the site could be conserved under voluntary agreements of a national designation, this would not contribute to fulfilling the requirements of the Birds Directive and would significantly increase the risk of infraction proceedings, The purpose of the IA is to inform the government of the impacts the SPA extension could have on the UK economy; it does not inform the decision to classify the site.

**Will the policy be reviewed?** It will be reviewed. **If applicable, set review date:** 01/2025

| | | | | |
|---|---|---|---|---|
| Does implementation go beyond minimum EU requirements? | | No | | |
| Are any of these organisations in scope? | **Micro** Yes | **Small** Yes | **Medium** Yes | **Large** Yes |
| What is the $CO_2$ equivalent change in greenhouse gas emissions? (Million tonnes $CO_2$ equivalent) | | **Traded:** n/a | **Non-traded:** n/a | |

***I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.***

Signed by the responsible SELECT SIGNATORY: _____ Date: _____

# Summary: Analysis & Evidence

Policy Option 1

**Description:**

**FULL ECONOMIC ASSESSMENT**

| Price Base Year 2016 | PV Base Year 2018 | Time Period Years 10 | Net Benefit (Present Value (PV)) (£m) | | |
|---|---|---|---|---|---|
| | | | **Low:** £-0.341m | **High: £-2.156m** | **Best Estimate: £-1.530m** |

| COSTS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---|---|---|---|---|
| **Low** | £0.000m | | £0.038m | **£0.341m** |
| **High** | £0.007m | | >£0.248m | **>£2.156m** |
| **Best Estimate** | £0.004m | | £0.176m | **£1.530m** |

**Description and scale of key monetised costs by 'main affected groups'**

Private sector costs (£0.932m undiscounted over 10 years) are mainly associated with managing the site (through development of a Tees Estuary Partnership), terrestrial wet grassland management and the production of an ecological assessment to inform a Habitats Regulation Assessments. Public sector costs (£0.831m undiscounted over 10 years) are primarily associated with managing the site, terrestrial wet grass land management and site monitoring. See sections 8 to 9.

**Other key non-monetised costs by 'main affected groups'**

Competent Authorities may incur one-off costs, which are unlikely to be significant, if they need to undertake the following as a result of the SPA extension:

- Review outstanding or existing consents or permissions;
- Undertake a Habitat Regulations Assessment of future plans and projects.
- Natural England may incur costs in informing these.

| BENEFITS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---|---|---|---|---|
| **Low** | Optional | | Optional | **Optional** |
| **High** | Optional | | Optional | **Optional** |
| **Best Estimate** | | | | |

**Description and scale of key monetised benefits by 'main affected groups'**

It has not been possible to monetise the benefits of designating the site because to do so would require an in-depth evaluation study. The effort and resources involved in doing this would be disproportionate to the scale of the likely impacts of the SPA.

**Other key non-monetised benefits by 'main affected groups'**

Ecological benefits: A reduced risk to a seabird population of international importance and their supporting habitats from future human activities. Economic benefits: stimulus for research and education in the area. Visitors who start wildlife watching, make increased wildlife visits or have an improved visitor experience. People in the UK who benefit from the knowledge that seabirds at the site are protected.

Key assumptions/sensitivities/risks — **Discount rate (%)** 3.5%

The IA assumes that the site will be classified during 2017 and that management is effective. In the event that a Habitats Regulations Assessment is required for a new plan or project, it is not anticipated that operators will incur additional mitigation costs because mitigation may already be required for the existing SPA. Also, where possible mitigation is not known, high cost estimates may be an under-estimate. If mitigation is required then costs would be greater than the high estimate.

**BUSINESS ASSESSMENT (Option 1)**

| Direct impact on business (Equivalent Annual) £m: | | | Score for Business Impact Target (qualifying provisions only) £m: |
|---|---|---|---|
| **Costs:** £0.094m | **Benefits:** Unquantified | **Net:** £-0.094m | n/a |

## 1. Introduction

1.1. The assumptions and evidence employed in assessing both costs and benefits are provided in Section 8. The approach adopted to assess the costs is described in Section 8.1, followed by an assessment of the costs (Section 8.2). The benefits of the SPA are assessed in Section 10. Section 11 summarises the costs and benefits associated with the extension of classification of the SPA.

1.2. The site is situated at the mouth of the Tees river and includes an area from Castle Eden Dene mouth in the north to Marske-by-the-Sea in the south, and extending up-river to the Tees Barrage (Figure 1).

## 2. Purpose

2.1. This is the Evidence Base for the Impact Assessment (IA) to accompany Natural England's recommendation to the Department for Environment, Food and Rural Affairs (Defra) for classification[1] of the extension of Teesmouth and Cleveland Coast Special Protection Area (SPA) resulting in a potential revised SPA area of 12,226.28ha compared with the current classification which represents an area equivalent to 1251.50ha.

2.2. This IA evaluates impacts of the potential extended Special Protection Area (pSPA) relative to the current situation, which is described as 'the baseline'. The IA informs the government of the impacts the SPA extension could have on the UK economy and the site's environmental and social effects. It does not inform the decision to classify the site (which is based on the scientific justification set out in the Departmental Brief for the site). This is because European case law has established that economic and social impacts should not influence selection of SPAs or delineation of their boundaries[2]. Information provided in the IA on the type and level of activities taking place in and near the site may however be used to inform management of those activities in the site.

2.3. The structure and method used for this IA is based on government guidance[3]. Abbreviations used in the IA are presented in Appendix A.

## 3. Background

3.1. It is a priority for Government to establish and effectively manage a network of Marine Protected Areas (MPAs) that covers in excess of 25% of English waters The network will help deliver good environmental status (under the Marine Strategy Framework Directive[4]) and the government's vision of clean, healthy, safe, productive and biologically diverse oceans and seas in the UK. The protection that it provides to habitats and species will maintain the value of the marine environment to society[5]. The MPA network will comprise SPAs as well as Marine Conservation Zones (MCZs), Ramsar sites[6], Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs).

[1] A new SPA is 'classified' whereas other new protected areas are generally 'designated'

[2] Case C-44/95 [1996] (Regina v Secretary of State for the Environment ex parte Royal Society for the Protection of Birds). http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:61995CJ0044

[3] Department for Business Innovation and Skills, 2013; HM Treasury (2003)

[4] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:164:0019:0040:EN:PDF

[5] Defra (2012) available at: https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs

[6] Ramsar sites are wetlands of international importance designated under the Ramsar Convention (1971)

3.2. Though the site could be conserved under voluntary agreements or a national designation, such as a MCZ, this would not contribute to fulfilling the requirements of the Birds Directive and would significantly increase the risk of infraction proceedings from the European Commission.

3.3. As a current EU member state the UK is required to classify the most suitable territories of rare and vulnerable birds listed on Annex I of the Birds Directive[7] and regularly occurring migratory birds, as SPAs. The Birds Directive is transposed into UK law through the Wildlife & Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations 2017, The Conservation of Offshore Marine Habitats and Species Regulations 2017. The Teesmouth and Cleveland Coast SPA meets this definition of 'most suitable territory' as it has proven to be an important area for several Annex I and migratory species. Given its importance to a number of species, this proposed extension to the SPA is best placed to meet the requirements of the Birds Directive.

## 4. Rationale for government intervention

4.1. Many human activities degrade marine habitats and species and impose costs on society. This may include disturbance to rare or vulnerable bird species from human activities or degradation of their supporting habitats. This is an example of market failure, which occurs when the market has not and cannot in itself be expected to deliver an efficient outcome since the marine environment does not fully reflect the price for its use and some of the services it delivers[8]. Marine biodiversity is a public good[9], all people benefit but none bear the cost of its provision, and therefore have no individual incentive to protect it. Government intervention is therefore appropriate to ensure that marine biodiversity is conserved and its value is protected for future generations.

## 5. Problem under consideration

5.1. As set out in detail in the Teesmouth and Cleveland Coast pSPA Departmental Brief (outlines the scientific recommendations supporting the classification of the pSPA), Natural England has used the data from work by the Joint Nature Conservation Committee (JNCC), to identify the extension of the Teesmouth and Cleveland Coast as a "most suitable territory" for offshore foraging for breeding little tern and common tern *Sterna hirundo* and additional wetland areas important for other foraging and roosting waterbirds. In light of recent population increases within the SPA, it is also proposed to add three other new qualifying features to the site; pied avocet *Recurvirostra avosetta* (breeding), common tern *Sterna hirundo* (breeding) and non-breeding) ruff *Calidris pugnax*, Insufficient protection would be afforded to foraging areas for terns and the new features without the extension of the SPA being recommended.

5.2. The boundary of the proposed SPA covers an area from Castle Eden Dene mouth in the north to Marske-by-the Sea in the south and includes the River Tees up to the Tees Barrage resulting in a revised SPA area of 12,226.28ha (figure 1). The seaward boundary has been drawn to include waters out to around 3.5km from Castle Eden Dene to include the areas of greatest importance to the little terns at that colony and out to around 6km offshore further south to include the areas of

[7] Council Directive 2009/147/EC on the conservation of wild birds

[8] HM Treasury (2003) available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf

[9] Public goods are non-excludable (no one can be excluded from accessing the good) and non-rival (one person's use of the good does not prevent anyone else from also benefiting from it).

greatest importance to the common terns at the Saltholme colony. The seaward extension has been drawn to the mean high water mark as defined by the foraging behaviour of breeding common tern. Furthermore, it is proposed to extend the landward boundary of the SPA to include certain terrestrial areas which are also considered to be of importance to breeding common terns and several other existing features of the SPA.

5.3. The site including the proposed extensions (terrestrial and seaward) detailed in this Departmental Brief qualifies under Article 4 of the Birds Directive (2009/147/EC) for the following reasons:

- The site regularly supports more than 1% of the GB populations of pied avocet *Recurvirostra avosetta*, little tern, common tern *Sterna hirundo*, and ruff Calidiris pugnax species listed in Annex I of the EC Birds Directive.
- The site historically supported more than 1% of the GB population of Sandwich tern, listed in Annex I of the EC Bird Directive.
- The site historically supported more than 1% of the biogeographical population of two regularly occurring migratory species: red knot and common redshank.
- The site regularly supports more than 20,000 waterbirds.

5.4. It is also proposed to extend the existing Teesmouth and Cleveland Coast Ramsar site to include the additional terrestrial areas proposed as pSPA for breeding and non-breeding waterbirds. The extended terrestrial areas qualify under the Ramsar Convention for the following reasons:

- The site historically supported 1% of the biogeographical populations of three waterbird species (Sandwich tern, red knot and common redshank).
- The site regularly supports more than 20,000 waterbirds.

5.5. Although the Ramsar site is being extended both in terms of its boundary and the list of qualifying features, it is not included as part of the assessment. This is because the extended Ramsar boundary remains within the pSPA boundary and all qualifying features are also pSPA features. Therefore, there are no additional costs imposed due to the extension to the Ramsar site over and above those being incurred due to the pSPA extension.

5.6. It is government policy that all SPAs on land are underpinned by a SSSI[10]. Therefore proposals for additional areas are being developed for the terrestrial extension to the SPA (down to lowest astronomical tide) (figure 1).

[10] Sites of Special Scientific Interest can be on any area of land which is considered to be of special interest by virtue of its fauna, flora, geological or physiographical / geomorphological features. SSSIs may extend to the mean low water mark only and in England can include estuarine waters.

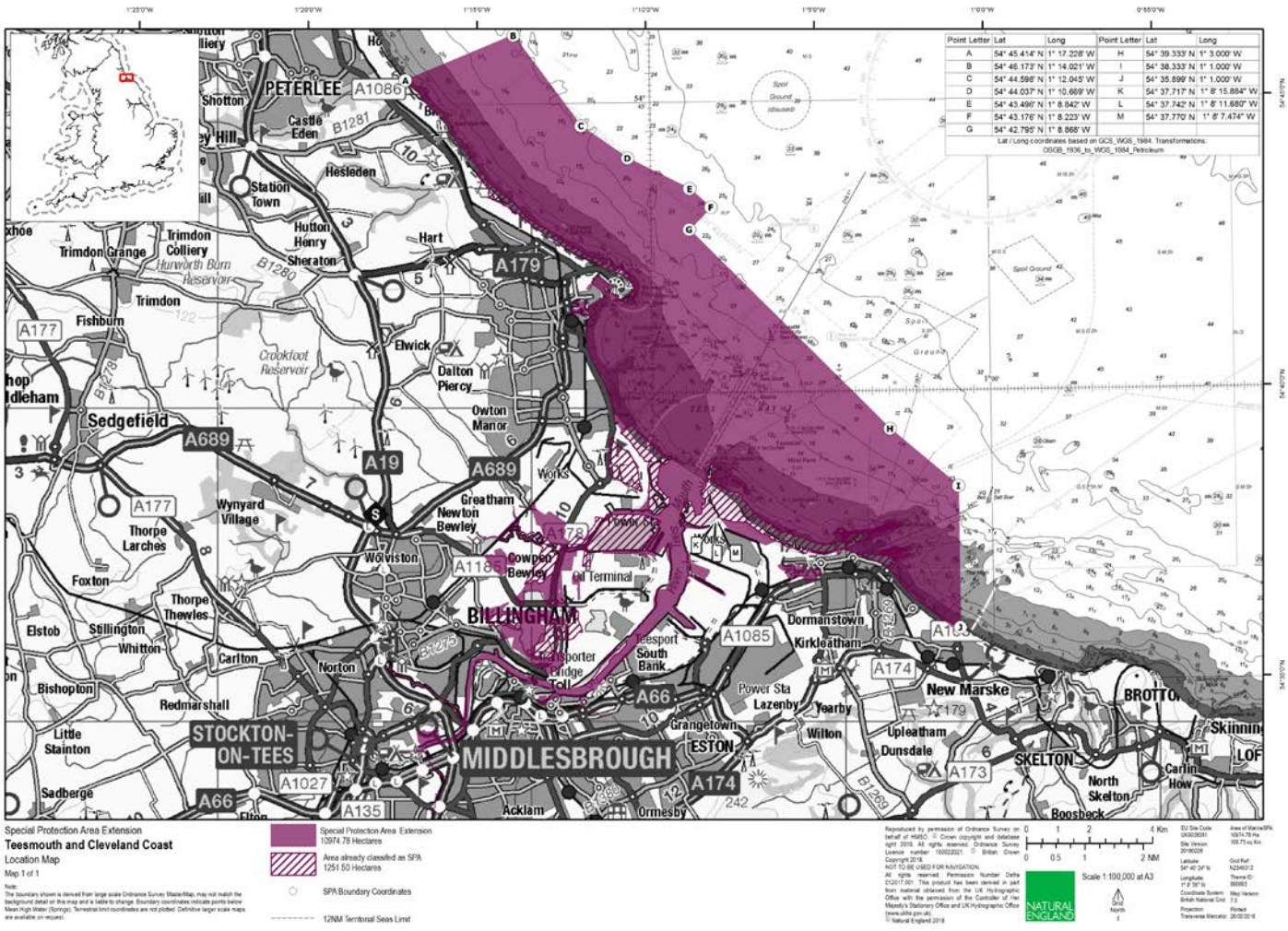


**Figure 1: Existing Teesmouth and Cleveland Coast SPA and proposed extension.**

## 6. Intervention objectives and intended effects

6.1. The objective of the intervention is to contribute towards fulfilling the UK government's obligations under the Birds Directive. The Birds Directive sets out the requirement for Member States to classify the 'most suitable territories' in number and size as SPAs for the conservation of rare or vulnerable bird species listed in Annex I of the Birds Directive as well as regularly occurring migratory birds and for Member States to take appropriate steps to avoid pollution or deterioration of habitats or any disturbances affecting the birds. Pied avocet, little tern, common tern, ruff and Sandwich tern are listed in Annex 1 as they are considered vulnerable within the European territory of EU Member States. This site has been identified as a most suitable area to be extended in order to meet the conservation objectives and we therefore have an obligation to classify the extension of the site as an SPA.

6.2. The Conservation of Habitats and Species Regulations (2017), which transposes the Birds Directive into UK law, states that a proposed plan or project can only be consented by the competent authority[11] when it has been ascertained it will have no adverse effect on the integrity of an SPA (further details provided in Annex C) and byelaws can be made to protect the site from damaging activities.

6.3. The proposed extension will therefore reduce the risk that the populations of pied avocet, ruff and breeding common terns will diminish over time as a result of human activities and development pressures. This will include the extent of their habitat and the abundance and distribution of their prey.

## 7. Description of the options considered

7.1. Only one option has been considered: to classify the boundary extension as an SPA under the Birds Directive. Other options are not considered here because Natural England is proposing the site as a necessary contribution by the UK to the SPA network.

7.2. The option to classify is assessed in this IA against the 'do nothing' option, whereby no changes would be made to the existing SPA boundaries or features, as described in section 5. This option will not provide adequate protection for these species.

## 8. Costs of the pSPA extension

### 8.1. Approach adopted to assess costs of preferred option

8.1.1. The IA assesses the impact of the proposed extension (both terrestrial and marine) of the SPA[12] (pSPA) on the UK economy and UK society, but significant local impacts have also been identified where these arise.

8.1.2. In the baseline, activities taking place within the pSPA are already subject to the management needed to mitigate impacts of human activities on the features protected by existing designations (which include the existing SPA[13],

[11] A competent authority is a public body or statutory undertaker that grants consents for regulated activities.

[12] SPAs are referred to as potential SPAs throughout the period from government approval to consult on the recommendation to classification (designation) of the site.

[13] For a Special Area of Protection the site's features of conservation of interest are the species of bird that the site is classified for under the Birds Directive, the birds' supporting habitats and species of prey.

Teesmouth and Cleveland Coast). Within the Teesmouth and Cleveland Coast SPA, the non-breeding Sandwich tern, redshank, knot, breeding little tern and waterbird assemblage are already protected within and adjacent to the current SPA, so appropriate management measures are already in place for these features.

8.1.3. Some of this protection contributes already to the management needed for the SPA extension. Bird species notified as features of the existing SPA are protected outside the SPA as well as within it. This means that if a plan or project outside the SPA could have an adverse effect on the integrity of the SPA, it is subject to the tests of the Conservation of Habitats and Species Regulations (2017) (as described in Annex C). Any additional costs from the pSPA will require the inclusion of the additional features proposed for the pSPA.

8.1.4. This IA is therefore only interested in the additional costs that will be incurred to manage the proposed extended areas as documented in Table 1. The proposed boundary extension would incorporate the foraging areas for common tern, pied avocet and ruff species for marine and terrestrial areas and therefore the IA covers these additional features.

8.1.5. The IA identifies common tern, pied avocet features and ruff which are vulnerable to pressures (detailed in section 8.1) that will be present in the site in the future. It therefore considers the impacts of the protection of these breeding species.

8.1.6. The site has pSPA status from the time that formal consultation begins. Because it is government policy that pSPAs have the same protection as fully classified SPAs, the Conservation of Habitats and Species Regulations (2017) will apply from then onwards. The IA assumes that the site will be classified during 2018 (following its submission to the European Commission (EC)) and that additional work managing the site will arise from then onwards. The IA assumes that once implemented management, as detailed in the Scenarios in Section 8 and 9, is effective and will be fully complied with. Impacts have been assessed in the IA over a time scale of 10 years based on government guidance[14]. Definitions of the terms used to communicate the level of confidence in information presented in the IA are presented in Appendix C. Figures used in the calculations have been rounded for presentation in the text and tables.

8.1.7. The level of analysis undertaken in the IA is proportionate to the magnitude of the anticipated social or economic impacts of the pSPA. All values are presented as real values in 2016 unless otherwise stated and projected values are given in constant prices. The present value (PV) of the costs and benefits has been calculated using a discount rate of 3.5%[15], as per HM Treasury Green Book[16] guidance.

8.1.8. In the absence of data on future trends that could be incorporated into the analysis, impacts on sectors are assessed relative to known levels of activities.

8.1.9. Costs are assessed here for existing activities compared with the extra costs associated with the proposed extension, known outstanding consents and

[14] Department for Business Innovation and Skills, 2013.

[15] Discounting is used to reflect society's preference to receive benefits now rather than later.

[16] https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent

permissions (which will be subject to Review of Consents) and known proposed projects (though these may not be funded or consented). This assessment does not pre-judge Review of Consents, Environmental Impact Assessments or Appropriate Assessments or licence decisions for specific plans and projects (which will be made within the marine licensing framework)

8.1.10. The assessment of costs of the pSPA considers additional costs that could arise relative to the 'do nothing scenario'. These are:

- surveys to assess the level of activity by users of the marine environment occurring in the proposed extension
- additional surveys to assess the foraging areas for breeding terns and impacts of activities (commercial and recreational) on features;
- developing and enforcing additional management and or mitigation that may be required for the pSPA extension; and
- the extra costs associated with the current monitoring programme that will assess the condition of the features of the pSPA.

8.1.11. It is anticipated that some users, both the public and private sector will incur additional costs as a result of the pSPA classification in the event that an Appropriate Assessment (AA) (under the Conservation of Habitats and Species Regulations) of a plan or project is required, these costs will vary with project specifics but are assumed to be *de minimis* (further detail is provided in the relevant Sections, this assumption will be tested during formal consultation).

8.1.12. An AA, as required Under Article 6 of the Directive[17], may already be required to assess the impacts of a plan or project on the interest features due to the existing nearby SPAs. However, the additional features of the pSPA will require inclusion in these assessments, such that the costs of this AA will be higher than in the absence of the pSPA. It is only the costs incurred due to the additional features that are of interest to this IA.

8.1.13. Many types of plans or projects are required to undergo comprehensive environmental assessment under existing legislation. Much of the evidence needed for the assessment of the new features will already be required as part of the wider environmental assessment.

8.1.14. As with other stages of the planning process developers will need to plan sufficient time for the regulator to undertake an AA and address any outcomes. The length of time this takes is reduced if the developer instigates appropriate consultation[18] at an early stage and provides a comprehensive ecological assessment to inform a Habitats Regulations Assessment (HRA).

8.1.15. Following classification the relevant authorities assess impacts arising from new human activities on the pSPA and determine whether management is required for the site. As the potential need for management is not known at this stage, the additional mitigation that is likely to be needed to address impacts of human activities on the pSPA features has been assessed using the best available information, specifically;

[17] Article 6 of Habitats Directive:
http://ec.europa.eu/environment/nature/natura2000/management/guidance_en.htm
[18] Consultation of nature conservation bodies, The Crown Estate, regulatory authorities, non-government organisations (NGOs) and other stakeholders.

- Discussion with local stakeholders to identify existing activities taking place within the pSPA and any relevant existing management and potential future development.
- A Vulnerability Assessment conducted by specialists, ornithologists and local staff in Natural England. This analysed the sensitivity of the interest features to different environmental pressures exerted by activities taking place within the pSPA and the level of exposure of the features to these pressures.
- Specialists in Natural England, drawing on their knowledge of existing management and licence conditions for plans and projects to develop management scenarios for those pressures to which the interest features are assessed as showing high and moderate vulnerability.

8.1.16. The Vulnerability Assessment highlighted that the breeding pSPA interest features (common tern, pied avocet and non-breeding ruff) show moderate vulnerability to both visual and noise disturbance (above and below water noise from piling specifically), changes in tidal regimes, habitat structure changes, siltation rate changes, physical loss of supporting habitat, abrasion of the surface of the seabed or the substrate below, and water flow changes, including sediment transport and pollution and organic enrichment. Some of these pressures may require additional monitoring as described in Sections 8 and 9.

8.1.17. Table 1 sets out the expected one-off and annual costs to be incurred, separated out by the relevant sectors and activities. Table 2 summarises the total expected public and private costs over 10 years. These costs are additional to any costs that would be expected to be incurred due to the existing SPA, regardless of whether the costs relate to activities within or outside the existing SPA. All private sector costs are included within the cost to business calculations in the summary sheets (pages 1-2). Where worst-case scenario figures are potentially significant but there is a lack of information on potential mitigation measures we have left these unquantified in sector specific rows in table 1. To estimate total figures (summary sheets, table 1 and 2) and figures in Appendix F we have assumed worst-case scenarios to equal the best estimate. Potential worst-case costs are therefore at least as great as the figures in these tables.

**Table 1** Summary of the Best Estimate costs as a result of classification of the extension of the Tees and Cleveland Coast pSPA[19].

| Impacted Sector(s) | Best Estimate extra Cost £s (frequency in brackets)<br><br>(**low - high**) | Description of Costs |
|---|---|---|
| **Managing and monitoring the SPA Extension** | | |
| Private sector | £35,000 (annual)<br>(£13,650 – £51,750) | **Managing and monitoring the extension of the SPA** – Total annual costs £60,000. The framework for the site is currently being collated as part of the Tees Estuary Partnership, made up of representatives from industry, regulatory authorities and non-governmental organisations (see Appendix D), as a result of the proposal to extend the current SPA. This was due to the proposed extension covering the estuary which encompasses numerous business sectors. The costs currently are mainly for Industry Nature Conservation Association (INCA) and NE which include industry engagement, MoU collation and publications, meetings and reporting (Table 3). These costs may reduce over time as the framework is developed and implemented. The annual costs to date have been used to assess potential ongoing costs of the pSPA and the split between private and public sectors (section 8.3). |
| Public sector | £25,000 (annual)<br>(£10,000 – £30,346) | |
| Private sector | £47,809 (annual)<br>(£0 - £60,000) | **Land management of additional terrestrial wet grass areas** – The total cost of £95,617 has been calculated through the relevant funds (Table 4). It is assumed that 50% of the costs will be funded through Countryside Stewardship so these costs have been split evenly between private and public sectors. Management costs may vary depending on the management intervention required (section 8.4). |
| Public sector | £47,809 (annual)<br>(£0 - £60,000) | |
| Public sector | £3,600 (one-off)<br>(£0 - £7,000) | **Initial (one-off) verification survey** –Survey includes duplication of verification survey, displacement and desk based disturbance review. It is an ambition of the Tees Estuary Partnership to continue annual surveys to assess the impacts of activities on other designated bird species in the future so these costs will not be a result of the new features therefore this is a one-off cost (section 9.12). |
| Private sector | £2,750 (annual)<br>(£1,500 - £3,500) | **Additional (annual) disturbance surveys** – There is the potential requirement for additional surveys in the future to fill gaps in evidence. It is anticipated that these costs will be split evenly between the private and public sector (section 9.12). |
| Public sector | £2,750 (annual)<br>(£1,500 - £3,500) | |
| Public sector | £25,000 (one off cost in 10 year | **Site monitoring - surveys to assess condition of** |

[19] Costs are based on best estimate management scenarios.

| | | |
|---|---|---|
| | period) | **qualifying features**<br>£25,000 in 2022 as part of the requirement to report on condition every 6 years, additionally it is expected that SSSI assessments will be required twice during a 10 year period at £21,422 per assessment (section 8.6).<br>The frequency of SSSI monitoring is now based on the sensitivity of the features. These costs are estimated based on other site survey costs and it is expected that these costs may reduce by using in-house surveyors/expertise. |
| Public sector | £42,844 (this cost includes 2 assessment periods at £21,422 per assessment)<br>(£21,422 – £64,266) | |
| Public sector | £4,000 (one-off)<br>(£0 – £40,000 one-off plus £20,000 annual) | **Recreation** -<br>A desk based survey is included within the additional survey work. This will identify any gaps in evidence which may need to be filled by additional survey work.<br>Expected that the current voluntary code of conduct will be extended to cover the pSPA areas. It is envisaged that this will incur costs to develop and implement. There are areas within the current SPA that may require inclusion within the current codes of conduct for activities such as bait collection and disturbance. Gap analysis may identify areas for management (section 9.13). |
| Public sector | N/A (Unquantified but expected to be negligible) | **Unquantified costs** – Competent authorities may incur one–off costs, which are unlikely to be significant, if they need to undertake the following as a result of the SPA extension:<br>• review outstanding or existing consents or permissions;<br>• undertake Appropriate Assessments for future plans and projects.<br>Natural England may incur costs in informing the above (section 8.7). |
| **Private sector total (undiscounted over 10 years)** | **£0.856m**<br>**(£0.152m - £1.153m)** | |
| **Public sector total (undiscounted over 10 years)** | **£0.831m**<br>**(£0.161m - £1.255m)** | |
| **Commercial Sectors** | | |
| Ports and harbours | £800 (one-off)<br>(£500 - £1,500) | *De minimis* costs for **maintenance dredging** associated with undertaking an ecological assessment to inform a Habitats Regulations Assessment (HRA) for cursory review of consent by the competent authority assumed to be within the year after classification (2019) (section 9.2). |
| | £1,200 (one-off) | **Review of Northern Gateway planning** |

| | | |
|---|---|---|
| | (£0 – significant costs) | **permission**. An ecological assessment to inform a Habitats Regulations Assessment will be required. Additional mitigation measures may be required to ensure no adverse effect to site integrity but these are currently unknown (section 9.2). |
| | £800 (one-off)<br>(£500 – £1,500) | **Review of Able Seaton Channel dredge licence**<br>*De minimis* costs associated with undertaking an ecological assessment to inform a Habitats Regulations Assessment (HRA) for cursory review of consent by the competent authority assumed to be within the year after classification (2019) (section 9.2). |
| Oil and gas processing | £800 (one-off)<br>(0 - £1,500) | **Review of the Liquid Natural Gas facility consent** will be required. The current agreed mitigation to ensure non-adverse effect of the development on the current SPA is proposed to be included in the proposed extended SPA area. An ecological assessment to inform a HRA will be required to assess the impacts of the development on new features (section 9.3). |
| Carbon Capture and Storage | £1,600 (one-off)<br>(£0 – significant costs) | **Review of proposed carbon capture and storage (CCS) exit tunnel**. An ecological assessment to inform a HRA will be required to assess the impacts of an exit tunnel which would allow for storage of carbon offshore (section 9.5) |
| Renewables | £800 (one-off)<br>(£0 – significant costs) | **Review of the MGT Teesside ltd biomass combined heat and power station**. An ecological assessment to inform a HRA will be required to assess the impacts of the development on new features (section 9.7). |
| Reassessment of control of major hazards contingency plans. | £70,000 (one-off)<br>(£70,000 – significant costs) | **Reassessment of Control Of Major Accident Hazards[20] (COMAH) contingency plans** –<br>It was communicated by stakeholders that the one-off assessment costs to include the changes in receptor boundaries as a result of the extension of the SPA will be a minimum of £70,000.<br>There is the potential that additional mitigation measures will be required as a result of this. During stakeholder dialogue industry have indicated that these costs may be significant but that industry required further information to quantify these costs. Evidence of these costs have not been presented and will be tested during formal consultation. See section 9.10 for more details) |
| **Private sector total (undiscounted over 10 years)** | **£0.076m**<br>**(£0.071m – >£0.078m)** | |

[20] COMAH Guidance: http://www.hse.gov.uk/comah/guidance/on-site-emergency-planning.pdf

| **Table 2** Summary of the Best Estimate costs (discounted and undiscounted), over 10 years, as a result of classification of the extension of the Tees and Cleveland Coast pSPA[21]. | | |
|---|---|---|
| **Sector / Activities** | **Discounted**<br>**(low – high)** | **Undiscounted**<br>**(low – high)** |
| **Public Sector** | | |
| Managing and monitoring the SPA Extension | £0.215m<br>(£0.086m – £0.261m) | £0.250m<br>(£0.100m – £0.303m) |
| Site surveys (condition and activity monitoring) | £0.091m<br>(£0.053m - £0.309m) | £0.103m<br>(£0.061m - £0.351m) |
| Land management of terrestrial areas | £0.412m<br>(£0.000m - £0.516m) | £0.478m<br>(£0.000m - £0.600m) |
| **Total** | **£0.718m**<br>**(£0.139m - £1.086m)** | **£0.831m**<br>**(£0.161m - £1.255m)** |
| **Private sector** | | |
| Managing and monitoring the SPA Extension | £0.301m<br>(£0.117m – £0.445m) | £0.350m<br>(£0.137m – £0.518m) |
| Site surveys (activity monitoring) | £0.024m<br>(£0.013m - £0.030m) | £0.028m<br>(£0.015m - £0.035m) |
| Land management of terrestrial areas | £0.412m<br>(£0.000m - £0.516m) | £0.478m<br>(£0.000m - £0.600m) |
| Commercial sector activities (Habitat Regulations Assessments and COMAH) | £0.076m<br>(£0.071m – >£0.078m) | £0.076m<br>(£0.071m – >£0.078m) |
| **Total** | **£0.812m**<br>**(£0.201m – >£1.070m)** | **£0.932m**<br>**(£0.223m – >£1.231m)** |

[21] Costs are based on best estimate management scenarios.

### 8.2. Costs in relation to managing the site

8.2.1. Alongside costs associated with the classification additional costs would occur for managing the extension. The costs to the UK economy are assessed below by sector. Calculation of the total costs is provided in Appendix D. The assessments are subject to considerable uncertainty because it is difficult to predict the exact management that will be required and the costs of complying with new management.

8.2.2. The management assumptions used within this impact assessment are specific to the requirements of the species which will be protected by the pSPA. Recent impact assessments for other designations in the area, such as Special Areas of Conservation and Marine Conservation Zones, are based on differing management assumptions which are relevant solely to those habitats and species which they seek to protect.

8.2.3. Costs have been estimated using a range of plausible hypothetical management scenarios. These scenarios reflect the uncertainty surrounding what management measures may be implemented once the site is classified. It is assumed that the true costs of any final management measures that are developed for the site will fall within the range stated. The management measures that are implemented will be determined by the relevant authorities (as described in Appendix B) and may differ from the hypothetical scenarios used for this analysis.

8.2.4. **Minimum Scenario**: This scenario involves the smallest change in activity and therefore the minimum costs that may plausibly be incurred as a result of the pSPA classification.

8.2.5. **Best Estimate Scenario:** This scenario is considered the most likely cost as a result of the pSPA classification. The best estimate is not a mathematical average of the minimum and worst case scenario but is based upon Natural England's judgement and represents the most likely scenario.

8.2.6. **Worst Case Scenario:** This scenario involves the maximum change in activities that could possibly be required as a result of the pSPA classification and the maximum potential cost. It assumes that the activities, plans and projects that could potentially impact upon interest features are deemed to have a Likely Significant Effect (LSE) and assumes that no mitigation could counteract the impact. It has not always been possible to estimate these costs in the absence of information on mitigation requirements.

### 8.3. Managing the SPA extension

8.3.1. Tees Estuary Partnership (TEP) was created in January 2016 in order to collate a framework for the area as a result of the proposed extension of the SPA. The Tees Estuary Framework will help create a partnership approach to avoid conflict and seek innovative solutions to benefit both nature and industry. This shared vision for the Tees Valley is to create an estuary that is an exemplar for nature conservation, with thriving habitats and populations of birds and animals, alongside sustainable economic growth and business investment. The partnership includes representatives from industry, regulatory authorities and non-governmental organisations (see Appendix D for a list of stakeholders).

8.3.2. The aim of the framework is to develop an action plan with targets for management of the extension and implementing this, for example through a

Memorandum of Understanding (MoU), working practices, habitat enhancement schemes (including the development of a habitat banking mechanism) and voluntary codes of conduct. The Tees MoU was launched on the 31st October 2017. Existing management policies may be extended to cover the pSPA extension; this will include revision of the existing voluntary code of conduct for the existing SPA (which encourages responsible pursuit of recreational activities) so that it covers the pSPA extension and dissemination of this to stakeholders. Additional evidence gathering such as bird surveys may be required to feed into the management strategy.

8.3.3. The TEP has been formed in order to collate a framework to help manage and monitor the site. Industry Nature Conservation Association[22] (INCA) are leading on the co-ordination of the project including engagement with industry and chair the TEP steering group. The TEP steering group representatives ensure that all stakeholders within Tees Estuary are engaged in the process and expectations are incorporated into the development of the framework. INCA are funded by industry and public bodies in order to develop the framework and therefore costs to manage the site are split into both public and private costs. INCA have held one to one meetings with industry in 2016 (£15,000) in order to alleviate industry concerns with regards to current activities continuing when the proposed extension is implemented. Also, industry costs are incurred through representation at TEP meetings and workshops.

8.3.4. The estimated cost to collate and maintain the TEP and framework including stakeholder input was £23,650 in 2015 and £82,096 in 2016 (Table 3). The majority of the cost categories are not expected to continue. The expected costs going forward are administration, management and planning and the public and private sector representative costs.

8.3.5. It is estimated that these annual costs will be £35,000 (private) and £25,000 (public). It is expected that these costs may reduce over time. However, additional one-off costs may also be incurred in the future, for example for one off stakeholder events. We have therefore assumed that any reductions to representative costs will be cancelled out by the one-off costs. The 2016 costs for the administration and representative cost categories are therefore used as the best estimate of the projected annual costs to manage the site (Table 1). Overall 2015 and 2016 costs are used as low and high estimates.

**Table 3** Managing the SPA overview costs[23]

| **Costs arising from the work of the Tees Estuary Partnership (INCA/NE)** | **One off costs 2015 (6 months costs only)** | **One off costs 2016 (inc estimates for remainder of year)** | **Expected recurring costs (£/year)** |
|---|---|---|---|
| Venue hire and refreshments (INCA) | £1,300 | £1,350 | |
| Venue hire and refreshments for stakeholder events (NE) | | £1,846 | |
| Consultant for 2015 stakeholder event | £4,350 | | |

[22] http://www.inca.uk.com/

[23] Costs based on workshop held by Natural England and INCA in 2015 and 2016. Costs include venue hire, facilitator and refreshments

| | | | |
|---|---|---|---|
| Administration, management and planning | £8,000 | £10,000 | £10,000 |
| Legal Advice | | £400 | |
| One to one meetings with industry (inc. admin costs) | | £15,000 | |
| NE innovation fund contribution | £10,000 | £1,500 | |
| National NE MPA management fund | | £2,000 | |
| Relevant/competent and industry representative costs due to attendance at TEP steering group, NE stakeholder events/working group meetings and input into development of framework (inc. travel/time/admin) | | £50,000<br><br>Based on 10 representatives at £5,000 per representative. It is expected that this cost will reduce over time due to the need for more input initially to develop the MoU and framework. It is estimated that costs have been incurred evenly by public and private costs (£25,000 each). | £50,000 |
| **Annual Total** | **£23,650**<br><br>(This is used as the low estimate in table 1) | **£82,096**<br><br>(This is used as the high estimate in table 1) | **£60,000**<br><br>(This is used as the best estimate in table 1) |

### 8.4. Costs of land management of the SPA terrestrial extension areas

8.4.1. The estimated costs of land management of the proposed wet grassland areas are documented in table 4. These costs will be incurred by the relevant landowners but it is expected that they will be eligible to apply for agri-environment schemes, thus ultimately could be funded through the Rural Development Programme for England (RDPE). In the absence of cost estimates, which may increase depending on potential management intervention requirements in the future (i.e. sluices, scrapes etc.), we have used agri-environment rates as the best estimate of the costs that will be incurred. We have assumed that 50% of these costs would be funded through the Countryside Stewardship (CS) scheme, thus the best estimate costs of £95,617 (see table 4) are split evenly between private and public sectors (£47,809 each), as set out in table 1.

8.4.2. There will be additional costs to manage other areas (Portrack and Coatham) which are not wet grassland areas and so are managed for other features, not only for the pSPA features therefore it is more difficult to quantify. From past agreements based on waterbird options, a best estimate annual cost was calculated to be £258 for Portrack and £1,375 for Coatham.

| **Table 4** Estimated annual costs of managing SPA wet grassland sites | | |
|---|---|---|
| **Site** | **Approximate area (ha)** | **CS maintenance (£/year based on £264/ha[24])** |
| Greatham Tank Farm | 25 | £6,600 |
| Number 5 brinefield | 3 | £792 |
| Number 4 Brinefield (SABIC) | 74 | £19,536 |
| Southern hald of Cowpen | 48 | £12,672 |
| Saltholme RSPB | 194 | £51,216 |
| Greatham North/Saltern Wetlands | 12 | £3,168 |
| Portrack | - | £258 |
| Coatham | - | £1,375 |
| **Total per year** | | **£95,617** |

### 8.5. Other costs of managing the SPA extension:

8.5.1. As a result of the pSPA extension, competent authorities may incur additional one-off costs. It is not anticipated that the costs will be significant, as most assessments are already required for the existing SPA and it is just the scope of the assessment that is increased slightly. In some cases consideration of the pSPA features has already been incorporated (e.g. York Potash). Natural England may also incur costs in providing advice to inform these processes.

8.5.2. If necessary, reviewing outstanding permissions, consents and other existing activities that may have impacts on features protected by the SPA extension. There will also be one-off costs to Natural England providing advice to inform this review.

8.5.3. If needed in future, undertake AA for proposed plans or projects that are likely to have a significant effect on the SPA extension's features.

8.5.4. Competent authorities will be responsible for 'compliance' monitoring in the site, to check that no unconsented activities, plans or projects are taking place and that activities that do occur are undertaken in accordance with the management scheme to avoid damage to qualifying features.

### 8.6. Site Monitoring

8.6.1. The monitoring strategy for the site has yet to be agreed and will depend on several factors such as a policy decision on the future of marine monitoring of birds and budget availability.

8.6.2. The monitoring of tern populations in the new pSPA will most likely not change as it will be based on nest counts within their colony SPA. The monitoring of the

[24] https://www.gov.uk/countryside-stewardship-grants/management-of-wet-grassland-for-breeding-waders-gs9

additional pSPA features; breeding pied avocet, breeding common terns, non-breeding ruff populations and water bird assemblage in the extended SPA will most likely be considered within the monitoring programme for the existing SPA. However, monitoring of how the birds use the extended site in the future may be required to inform an assessment of site condition over time.

8.6.3. JNCC and Natural England will face additional survey costs to assess the condition of interest features in the site given the requirement to report on the condition of the UK network of Marine Protected Areas on a 6-yearly basis under the Marine and Coastal Access Act 2009[25]. Natural England estimates these additional monitoring costs to be a maximum of £25,000 per assessment based on its experience of previous monitoring costs (we have assumed this maximum in Table 1). Additionally, it is expected that SSSI monitoring will be required twice within the 10 year period. Natural England estimates these costs at £21,422 per assessment based on the cost of these surveys at other sites (see also Table 1).

**8.7. Other unquantified costs of managing the SPA extension:**

8.7.1. The following costs to the public sector (which cannot be quantified) may also be incurred as a result of the SPA:

- Informing users of the marine environment about the site and any management measures that are required. This will include addition of the site to charts by the UK Hydrographic Office and communication through Notice to Mariners.
- If necessary, review by competent authorities of outstanding permissions and consents and other existing activities that may have impacts on the features protected by the pSPA. This will include Habitats Regulation Assessments undertaken as a result of potential development in the local area. There will also be one-off costs to Natural England for providing advice to inform this review.
- Enforcing management measures – It is not envisaged that additional enforcement costs will be required as a result of the pSPA as no additional management is expected at present. Any future fisheries management (i.e. bait collection) would be in the current SPA. Extension of the voluntary code of conduct would be managed by the relevant local authorities/NE.

8.7.2. At such time as any extension to the Teesmouth and Cleveland Coast SPA may be confirmed by the Secretary of State, the Environment Agency (EA) will carry out an assessment of existing permits as required under the Conservation of Habitats and Species Regulations 2017 in consultation with and taking advice from Natural England.

8.7.3. The EA will carry out initial screening, assess if any likely significant effect, alone or in combination, and if necessary carry out an appropriate assessment, in consultation with and taking advice from NE. EA will commence this work when it is reasonably practicable with agreement with NE.

8.7.4. During the informal consultation stage (including the extended stakeholder dialogue), stakeholders raised concerns about the impact of the pSPA extension on land prices. However, there is very little evidence of the impact of SPA designation on land values. Research has identified that the effect of

[25] http://www.legislation.gov.uk/ukpga/2009/23/schedule/13

designation of SSSIs on land values in England is variable, having positive, negligible and negative impacts depending on the context and land use (Beedell *et al.* 2011). In the absence of evidence to suggest an effect in either direction we have assumed no impact on land prices in this IA.

8.7.5. Stakeholders also raised concerns about the possible impact of the pSPA extension on future investment in the area and expansion of current development. The TEP framework, MoU and existence of the TEP aims to provide clarity and confidence for future investors.

8.7.6. Additionally, it was raised that there would be cost implications from the boundary extension in relation to control of major accident hazards (COMAH) contingency plans. Reassessment of scenarios would be required to include the changes in 'receptor boundaries and locations' (see section 9.10).

## 9. Costs associated with commercial sectors/activities

### 9.1. Summary of costs to commercial sectors

9.1.1. Costs to industry of the proposed SPA extension are set out in sections 9.2 to 9.10. These costs are not found to be significant for the following three reasons.

9.1.2. Firstly, the main costs relate to undertaking ecological assessments to inform HRAs. As HRAs have already been undertaken, or for new developments would be required, for the existing SPA this IA is only interested in the costs in relation to the additional features. This focus means the costs for these shadow HRAs are limited to a few hours work (typically estimated to be 1 to 2 days). Based on an assessment of recent tenders from environmental consultancies, Natural England estimates the cost of these to be around £800 per day.

9.1.3. Secondly, we have identified all circumstances where an ecological assessment to inform a HRA would be expected to be required and included these costs. In each case we expect the shadow HRA to be undertaken in 2018- 2019. As explained in section 8.1 this IA only focuses on developments which are known and likely to proceed so we do not assume additional ecological assessments will be required for other developments.

9.1.4. Finally, there is currently no evidence that additional mitigation measures will be required due to the new features of the pSPA so the best estimate does not include any mitigation costs. In the case that mitigation is required costs would be higher as explained in the worst-case scenarios.

9.1.5. These costs have been investigated during informal discussion with key stakeholders and after liaising with regulatory and relevant Government Departments (see Appendix E for a list of stakeholders). Cost estimates will be tested further during formal consultation.

### 9.2. Ports and shipping (including dredging of channels)

9.2.1. Appropriate Assessments are already required for coastal development within the pSPA due to the presence of the adjacent SPA for current features. All of the large ports and harbours in the vicinity of the pSPA fall adjacent to the existing SPA boundaries and therefore there is existing management and best practice in place within these sites. Therefore, no additional impacts will be incurred by the ports and shipping sector due to the extension of the SPA, with the possible exception of the following:

## Port development and dredging

9.2.2. Maintenance dredging of the Tees estuary and river channel is approximately 970,000m$^3$ (in 2015). This takes place in the area 185m downstream of the Tees barrage to the seaward limit of the port authority area. Dredging practices have remained unchanged during the period 2005 to 2015[26].

9.2.3. The vulnerability assessment flagged the potential for changes in suspended solids (water clarity) which may impact on foraging birds, changes in water flow, habitat structure changes, contamination and visual and noise disturbance from port development and dredging.

9.2.4. PD Ports have collated a dredging protocol which already documents the potential impacts/mitigation measure for the existing SPA features. The pSPA additional bird features need to be incorporated.

9.2.5. The **Minimum Scenario** assumes that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached.

9.2.6. The **Best Estimate Scenario** assumes that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require an ecological assessment to inform a Habitats Regulations Assessment that will be collated by the competent authority but a conclusion of no adverse effect will be concluded and no mitigation will be required. Consultants will be required to carry out an assessment. As an HRA has already been undertaken for the existing SPA this assessment will only need to focus on the additional features. It is estimated therefore that a maximum of 1 day will be required to carry out the shadow HRA assessment[27] at £800 per day (see Table 5).

9.2.7. The **Worst Case Scenario** assumes that additional survey work is required to assess the potential impacts (i.e. water clarity impacts on prey availability etc.) of maintenance dredging within the estuary. This outcome is very unlikely.

9.2.8. In the future there is the potential need to undertake a capital dredge in order to increase the depth of the river/channel to install new jetties etc. York Potash Limited considered the pSPA during the regulatory process and mitigated for any impacts for the loss of habitat, reduction in water quality etc.

9.2.9. PD Teesport received approval of a Harbour revision Order (HRO) and planning permission for the Northern Gateway Container Terminal in 2008. The HRO authorised a dredge to deepen, scour, cleanse, alter and improve the river bed, shores and channels. The marine elements of this project have not been completed as yet. PD Ports are seeking an extension to the HRO issued in 2008, for 15 years until May 2033. PD Ports have submitted an EIA scoping request to MMO proposing to use the 2006 Environmental Statement and produce a supplementary environmental report that will assess the impacts on the new features of the site. This authorisation will be reviewed by Marine Management Organisation to ensure that the marine works will not have an

[26] PD Ports dredging protocol

[27] The relevant authority will be required to review the consent and carry out an HRA assessment. The applicant must ensure there is enough information for a HRA to be completed. It is common practice for consultants to collate a shadow assessment. Costs will also be incurred for HRAs collated by the regulatory authority as part of review of consents but these costs are unquantified at present.

adverse effect on the pSPA. PD Ports expect that the assessment will be completed by classification (December 2018). If this is the case then a review of consents will not be required.

9.2.10. The **Minimum Scenario** assumes that a conclusion of no likely significant effect is reached during review of consents.

9.2.11. The **Best Estimate Scenario** assumes that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and no mitigation is required. Consultants will be required to carry out an assessment. As an HRA has already been undertaken for the existing SPA this assessment will only need to focus on the additional features. It is therefore estimated that a maximum of 1.5 days will be required to carry out the shadow HRA assessment at £800 per day.

9.2.12. Potential costs, not included in the best-estimate, could be incurred if there is a requirement for additional mitigation, delay in development due to review of consent timeline by competent authority or a need to alter an already agreed methodology. This will be tested at formal consultation.

9.2.13. The **Worst Case Scenario** assumes that the location, scale, timing and duration of the operation cannot be mitigated and there is the potential need to satisfy the test of imperative reasons of overriding public interest (IROPI) following which sufficient compensation for loss of habitat is required. This outcome is very unlikely. Costs associated with this scenario could be significant as a result of contractor fees and the potential requirement for compensatory measures if IROPI principles are met.

9.2.14. Able UK is located at Seaton Port and operates mainly in the decommissioning of offshore windfarms, ship recycling and oil platforms. In order to allow access to the port and berths dredging is required. Able currently have a 10 year licence issued in March 2017 until March 2027 to capital and maintenance dredge Seaton channel and a number of berths.

9.2.15. Able UK collated an Environmental Statement (ES) in 2012 which already documents the potential impacts/mitigation measure for the existing SPA features. The assessment of the pSPA additional bird features have not been assessed and need to be incorporated. A variation was requested by Able in December 2017 to add another berth to the licence. It was requested that a supplementary environmental report is collated as an addendum to the 2012 ES in order to assess the pSPA features of the site to inform the review of consents process by the MMO.

9.2.16. The **Minimum Scenario** assumes that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached.

9.2.17. The **Best Estimate Scenario** assumes that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require an ecological assessment to inform a Habitats Regulations Assessment that will be collated by the competent authority but a conclusion of no adverse effect will be concluded and no mitigation will be required. Consultants will be required to carry out an assessment. As an HRA has already been undertaken for the

existing SPA this assessment will only need to focus on the additional features. It is estimated therefore that a maximum of 1 day will be required to carry out the shadow HRA assessment[28] at £800 per day (see Table 5).

9.2.18. The **Worst Case Scenario** assumes that additional survey work is required to assess the potential impacts (i.e. water clarity impacts on prey availability etc.) of capital/maintenance dredging within the estuary. This outcome is very unlikely.

### 9.3. Oil and Gas Processing

9.3.1. The Central Area Transmission System (CATS) is an essential part of the UK's energy infrastructure. The pipeline systems takes gas from Central North Sea fields to the processing terminal on the north side of the river Tees and delivers it into the National Transmission System and also for use in local industry. Continued investment in this system provides and essential route for existing gas fields to land output and for the economical development of new offshore gas fields (Tees Valley Unlinited *pers.comms.*

9.3.2. There is the potential for this to increase in the future.

9.3.3. Conoco Philips is located within the pSPA which encompasses oil storage tanks which hold oil transported from the Norwegian sector of the North Sea by pipe and tankered out. There are 8 jetties in total. The pipeline infrastructure and jetties are fully in place and there is no ambition to develop in the foreseeable future.

9.3.4. There is the potential for pipe and jetty maintenance in the future which will require the relevant authorisations.

9.3.5. The Liquid Natural Gas (LNG) facility has consent for large storage tanks, a regasification plant and a potential power plant which may be developed in the future. The proposed LNG will result in permanent loss of areas used by breeding birds for roosting and limited feeding. To mitigate for these losses, it is proposed that an area of land less than 2km (Greatham Tank Farm) to the north-east of the development site will be converted from semi-improved pasture to permanent Hay Meadow and provide a suitable habitat for inland winter-feeding curlews and other waders such as Lapwing. The cost of this mitigation is included in the baseline so is not considered as part of the IA. However, the competent authority will need to review the current consent in order to assess the potential impacts on the additional bird features and determine whether additional mitigation is required.

9.3.6. The **Minimum Scenario** assumes that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached.

9.3.7. The **Best Estimate Scenario** assumes that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require Habitats Regulations Assessment but a conclusion of no adverse effect will be

[28] The relevant authority will be required to review the consent and carry out an HRA assessment. The applicant must ensure there is enough information for a HRA to be completed. It is common practice for consultants to collate a shadow assessment. Costs will also be incurred for HRAs collated by the regulatory authority as part of review of consents but these costs are unquantified at present.

concluded and that potential impacts assessed are already mitigated. Consultants will be required to carry out an assessment. As an HRA has already been undertaken for the existing SPA this assessment will only need to focus on the additional features. It is therefore estimated that a maximum of 1 day will be required to carry out the shadow HRA assessment at £800 per day (see Table 5). This will be tested at formal consultation.

9.3.8. The **Worst Case Scenario** assumes that additional survey work is required to assess the potential impacts of these developments on the additional bird features. This outcome is very unlikely.

### 9.4. Chemical

9.4.1. Tees Valley is home to 58% of the UK's chemical industry[29] and is the largest industrial area in the UK[30] with £26 billion in industry sales[31]. The area provides £12Bn GVA to the UK economy and there are approximately 1400 companies in the area with chemical plants within and adjacent to the proposed pSPA boundary extension with harbours and jetties servicing the plants[32]. There is ambition for this sector to increase in the future however potential developments are not at a stage to be included in this assessment at this stage.

9.4.2. INEOS nitriles have harbour frontage facilities including working jetties which will require potential expansion in the future.

9.4.3. SABIC have developed an ethane import facility on the north side of the river Tees. The ethane is imported from the US by ship, piped and stored onsite in the North Tees site. The ethane is then piped under the river Tees for use in the Cracker complex at Wilton International. This investment underlines the company's commitment to the area and can act as a catalyst for new process industry investment (Tees Valley Unlimited *per. comms)*. Due to uncertainty and a lack of evidence at this stage these potential costs have not been included in the IA at this stage.

### 9.5. Carbon capture and storage

9.5.1. It is an ambition in the future that carbon capture and storage will be developed within this area as there is adequate pipe infrastructure to capture carbon from industry onshore and offshore. An exit tunnel would be required to allow for storage of the carbon offshore which will have impacts on the pSPA and SPA. It is anticipated that this will occur within the next 10 years therefore has been included within this IA.

9.5.2. The **Minimum Scenario** assumes that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached.

[29] Tees Valley Economic Assessment, Tees Valley Unlimited https://teesvalley-ca.gov.uk/wp-content/uploads/2016/03/tees_valley_economic_assessment_2015_full.pdf
[30] Tees Valley Strategic Economic Plan https://www.lepnetwork.net/modules/downloads/download.php?file_name=37
[31] Department for International Trade
[32] Tees Valley Strategic Economic Plan https://www.lepnetwork.net/modules/downloads/download.php?file_name=37

9.5.3. The **Best Estimate Scenario** assumes that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed can be mitigated. It is likely that consultants will be required to carry out an Environmental Impact Assessment (EIA) to assess the potential impacts of the proposed development on the current bird features and additional features for the proposed extension area. In order to mitigate any impacts there may be a requirement to obtain additional evidence to ensure that any loss of habitat due to the need to install pipeline infrastructure may have on the features of the site. This assessment would be required anyway due to the existing SPA so any additional costs are only related to the need to assess the impacts on the additional bird features and the proposed extension of the seaward boundary of the site. It is estimated that an additional maximum of 2 days will be required for a consultant to carry out an EIA for these features at £800 per day. Potential costs due to the requirement for additional surveys (modelling potentially) to ensure mitigation is sufficient may be required and therefore additional costs may be incurred. This will be tested at formal consultation.

9.5.4. The **Worst Case Scenario** assumes that the location, scale, timing and duration of the operation cannot be mitigated and there is the potential need to satisfy the test of imperative reasons of overriding public interest, following which sufficient compensation for loss of habitat is required. This scenario is unlikely.

### 9.6. Nuclear

9.6.1. The EDF Hartlepool nuclear power station life has been extended until 2024 and it may run beyond this date. There is an ambition for a new nuclear power station to be developed with sufficient infrastructure in Hartlepool which will require an environmental impact assessment and will be classed as a nationally significant infrastructure project. It is not expected that this will be developed in the next 10 years.

### 9.7. Renewables

9.7.1. MGT Teesside Limited are currently building a biomass combined heat and power station. The original consent was given in 2010 by the Secretary of State and a variation to the consent was issued in 2015 to include a conveyor system from the Tees Dock berth which adjoins the power plant site. The berth will be refurbished by PD Ports and will require piling (Section 9.7). The total construction period will be 41 months. Works commenced in August 2016.

9.7.2. The **Minimum Scenario** assumes that a conclusion of no likely significant effect is reached during a Habitats Regulation Assessment.

9.7.3. The **Best Estimate Scenario** assumes that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed are already mitigated. Consultants will be required to carry out an assessment. As an HRA has already been undertaken for the existing SPA this assessment will only need to focus on the additional features. It is therefore estimated that a maximum of 1 day will be required to carry out the shadow HRA assessment at £800 per day (see Table 5).

9.7.4. The **Worst Case Scenario** assumes that additional survey work is required to assess the potential impacts of the operation. Costs associated with this scenario could be significant if additional requirements caused delay to the development and/or additional mitigation measures. This outcome is very unlikely.

9.7.5. EDF Teesside Offshore Windfarm (Round 1, consented in 2004, built in 2012. Consists of 27 turbines with a 64KW output). There is no scope to increase the footprint of this windfarm in the future. As a result of the development being fully operational[33] a review of consent will not be required.

9.7.6. Forewind has consent to develop a 80KW offshore windfarm (Dogger Bank) which will require a cable to connect to the grid which will potentially impact on the SPA and pSPA. There is the potential for this to be required in the next 10 years but this is not at the development stage yet so is not included in this assessment at this stage.

### 9.8. Coastal Defence

9.8.1. Hartlepool's North Pier protects the Marina and failure or loss of the Pier will clearly have a major impact on a key economic and leisure asset of the Borough. A business case is to be submitted to the Environment Agency for a £3.5m programme of works over a 6 year period. As part of the partnership funding regime contributions will be sought from businesses and other key stakeholders. We do not expect the pSPA will impact on this.

9.8.2. North Gare Breakwater – Hartlepool Borough Council is undertaking a joint study with PD Ports to upgrade the breakwater. Funding is provisionally set aside for 2019 subject to satisfactory preparation of a business case. These costs would be incurred anyway and would not be a result of the pSPA so no costs have been included.

### 9.9. Mineral extraction

9.9.1. Sand extraction has historically occurred at North Gare. Beach sand extraction ceased in 2012. Middlesbrough Council has informed us that there is no longer a licence from the Crown Estate for extraction at this site. The extension to the SPA may potentially result in amending or revoking planning permissions if they are deemed to be causing adverse effects on the designation. Natural England has requested in the past that the North Gare site undergo such a review. It is thought the planning permission for the extraction of sand has expired and therefore any proposal to resume operations would therefore require a new application. These costs would be incurred anyway and would not be a result of the pSPA.

9.9.2. A new brinefield will be required at the Northern end of No 4 Brinefield. Construction and operation will need to take account of the existing SPA features (principally the 20,000 waterbird assemblage) as well as the new breeding avocet, common tern and ruff features. It is considered that impacts can be well controlled by appropriate management of activities, for example

[33] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/525765/Final-Guidance_on_when_new_marine_Natura_2000_sites_should_be_taken_into_account_in_offshore_renewable_energy_consents_and_licences.pdf

sensitive timing of operations. This will be addressed through the Brinefield Management Group.

### 9.10. Other Industry

9.10.1. Control of Major Accident Hazards (COMAH) 2015 is enforced in Great Britain by the COMAH competent authority (CA). This authority comprises five public bodies working in partnership;

- the Environment Agency (EA);
- the Scottish Environmental Protection Agency (SEPA);
- Natural Resources Wales (NRW);
- the Health & Safety Executive (HSE); and
- the Office for Nuclear Regulation (ONR).

9.10.2. The aim of the CA is to 'protect people and the environment from, and limit the consequences of, major accidents occurring within establishments covered by COMAH 2015[34]'. Any organisation must comply with COMAH if they hold/produce dangerous substances in sufficient quantities that could potentially impact communities and the environment in the area in question. This is therefore relevant for Tees Estuary due to the presence of chemical, gas and nuclear industries.

9.10.3. Reassessment of COMAH contingency plans (section 9.10) due to the proposed extension of the SPA will require industry to firstly assess the potential risks of the revised receptor boundaries and locations and ensure that any additional risks are mitigated. It was communicated by stakeholders that the one-off assessment costs to include the changes would be a minimum of £70,000. There is the potential that additional mitigation measures will be required as a result of the assessment and that these costs may be significant but industry required further information to quantify these costs. Evidence of these costs have not been presented so different scenarios have not been included in this IA. This will be tested during formal consultation.

9.10.4. A new energy and technology park enterprise zone at seal sands has seen significant investment in recent years. Although the Air Products investment in a plasma gasification plant never reached full commercial capacity, it is hoped that this facility will achieve economic use in the future. The area has also seen the construction of a new 40MW BioMass power station which will utilise circa 325,000 of waste wood as a feedstock. (TVU *pers. comm.)*.

9.10.5. A new Tees road crossing is envisaged in the next 10 years. This will seek the relevant authorisations.

9.10.6. There is the potential that Northumbrian water will reopen the existing sewage works at Portrack Marsh and potentially extend the system in size which will impact on the pSPA but this proposal has not been sufficiently advanced to be included within this IA.

9.10.7. South Tees Development Corporation (STDC), launched its Master Plan on the regeneration of the former steel site on Teesside (890 hectares). Redcar & Cleveland Council will consult formally on the South Tees Master Plan

[34] http://www.hse.gov.uk/comah/authorityindex.htm

supplementary planning document late January/early February 2018 and a HRA will be required.

9.10.8. The Vision sees the creation of up to 20,000 new jobs with the area transformed into a hotbed of new industry and enterprise. The focus is on higher skilled sectors and occupations, centred on manufacturing innovation and advanced technologies. New development will aspire to deliver a high value, low carbon, diverse and inclusive circular economy for Tees Valley. It is also looking to improve the external perception of potential inward investors through promoting and encouraging environmental improvement and biodiversity.

9.10.9. The Master Plan area has been zoned with terrestrial environmental designated areas and proposed extended designated areas identified as a Coastal Community Zone within the Master Plan area. They are looking to achieve a balance here between optimised, beneficial recreational use of the area and the need to avoid adverse impact on environmental assets. The plan includes recognition of the need for an Open Space Strategy for the overall site so that there is creation of carefully designed areas of landscape and public open space together with connectivity between them.

9.10.10. The plan highlights the potential re-use of just over 1km of river frontage at South Bank Wharf currently dilapidated and non-usable. Indication of the first development on site at South Bank in 2018. This proposal has not been sufficiently advanced to be included within this IA.

### 9.11. Commercial fisheries

9.11.1. Teesmouth and Cleveland Coast pSPA is situated within 6 nautical miles (nm) of the coast and therefore is only fished by UK vessels. The main fishing methods used in this area are potting, trawling, netting and lining. Potting for lobster and edible crab is the predominant fishery in the area. Effort in the immediate vicinity of the pSPA is constrained within 4.5nm from shore as beyond this sediment becomes mostly mud. There are 33 active boats potting in this area and 62 registered boats. These vessels are based in Seaham, Hartlepool, Redcar and Saltburn.

9.11.2. The North Eastern Inshore Fisheries and Conservation Authority (NEIFCA) is responsible for marine fisheries and environmental management within the pSPA. They regulate fisheries through a series of byelaws and national and European fisheries legislation which places temporal/and or spatial restrictions on gears used and species landed, as well as minimum landing sizes for certain species.

9.11.3. Static and drift netting for salmon and sea trout is regulated by the Environment Agency. The Environment Agency also monitors the fish stocks as part Water Framework Delivery programme. Fish counts are taken during autumn and spring to gather information of species richness, abundance of species and to give an indication of the health of the water body (Figure 2). These methods provide a ‘snapshot’ of the health of the fish present at the time of netting.

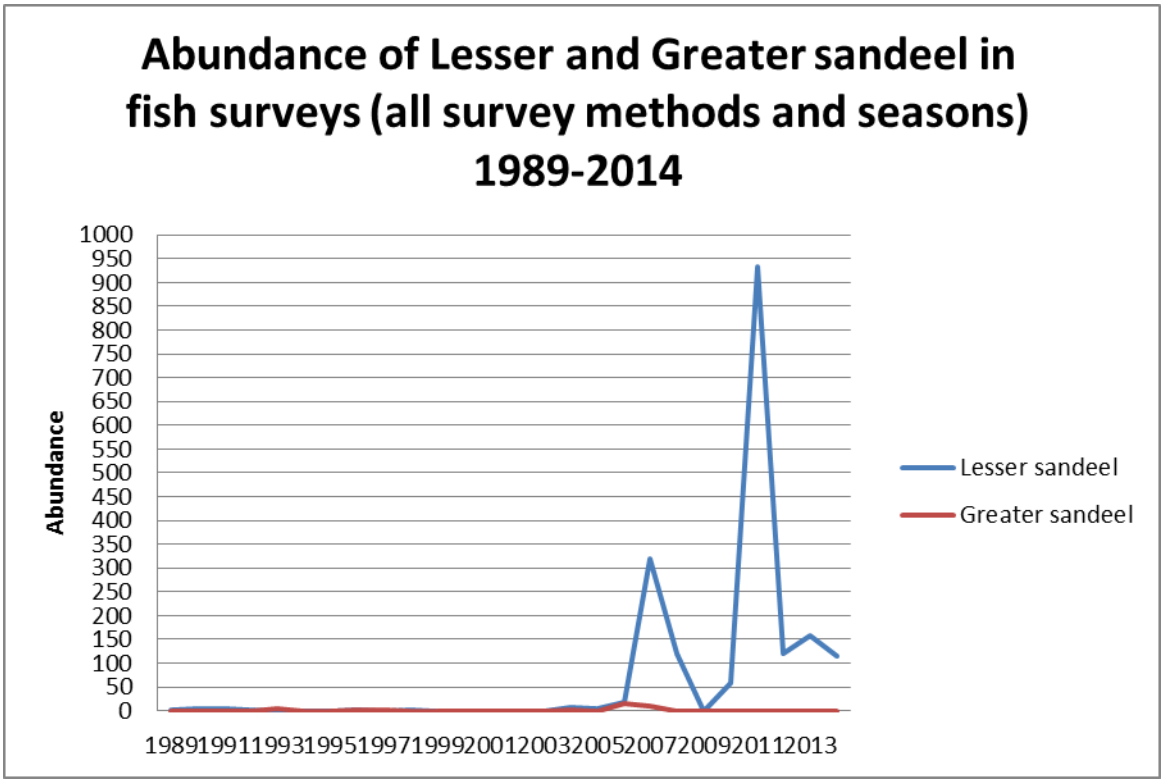


**Figure 2: Lesser and great sandeel abundance**

9.11.4. The Water Framework Directive assessment for the Tees is of good status which suggests that the Tees estuary is of an environmental quality that supports a diverse and abundant fish community.

9.11.5. The features of the site are vulnerable to visual and noise disturbance and entanglement in nets. Under the revised approach to fisheries in European Marine Sites[35], assessments have been carried out to assess the impacts of fishing activities on the features of the pSPA. These assessments have considered the tern foraging ranges and NEIFCA do not foresee any additional management being required as a result of the pSPA. No costs have been included for commercial fisheries therefore as no mitigation requirements are expected as survey costs have already been incurred.

9.11.6. Bait digging /shore collection occurs in the area, particularly around Bran Sands/South Gare, Greatham Creek and the north bank of Seaton Channel. These fishing activities will be assessed and management implemented (if required) in 2017 - 2018. These costs are incorporated into sections 9.12 (survey costs) and 9.13 (recreation) so no additional costs are included here.

### 9.12. Survey Costs (initial verification and annual disturbance)

9.12.1. In order to assess the utilisation of the main river channel, jetties and harbours of the Tees Estuary by the bird features and to monitor impacts on bird behaviour as a result of commercial and recreational disturbance an additional

[35] The revised approach to fisheries applies to all European Marine Sites (EMS), pSPAs and possible SACs in England. It ensures that fishing activities (including existing fishing activities), which could adversely affect EMSs are managed in a manner that secures compliance with the requirements of Article 6 of the Habitats Directive. The approach will ensure that all existing and potential commercial fishing activities are subject to an assessment of their impact on EMSs.

survey was commissioned and carried out by the Tees Estuary Partnership in the summer of 2016.

9.12.2. These surveys will allow regulators to make better informed decisions during the screening process in order to determine where future operations can take place and to determine the important areas required for bird protection.

9.12.3. The **Minimum Scenario** assumes that no surveys are carried out. The current evidence (from JNCC modelling and verification survey) is current best available evidence. Based on previous desk based studies looking at potential disturbance from recreational and fisheries activity, Natural England estimates an expected cost of £3,000 per year[36].

9.12.4. The **Best Estimate Scenario** assumes that an additional survey will be carried out and based on the findings these will continue annually in the future. This scenario involves a verification survey to identify/confirm tern foraging areas in summer during the chick-rearing period while also assessing disturbance. Additionally, a desk-based review of the current recreational disturbance survey work will be collated in order to identify gaps in evidence. It is envisaged that these annual surveys will continue to collate evidence with particular emphasis on the current bird features and mainly disturbance impacts for the proposed new features of the site.

9.12.5. Costs are based on the assumption that a PD Ports vessel is used and a combination of Natural England staff and students are used to carry out the disturbance surveys.

9.12.6. The cost of the initial (one-off) verification survey is estimated with high confidence at £3,600 (to the public sector) and £5,500 per year for additional (annual) disturbance surveys (split evenly between the public and private sectors).

9.12.7. The **Worst Case Scenario** assumes that the cost of a vessel to carry out the surveys and that a consultant is required to carry out the disturbance surveys. Total annual cost with high confidence would be £7,000 for both the initial and additional annual surveys.

### 9.13. Recreation

9.13.1. Within the pSPA there is low level of use by a variety of recreational vessels (sailing boats, wind-surfing, kite-surfing, power boats, jet skis and recreational fishing boats). There is extensive recreational use of all the beach areas, from Crimdon and North Sands to Seaton Sands, North Gare and Coatham Sands.

9.13.2. The vulnerability assessment flagged the potential for visual disturbance to interest features from recreational activity within the pSPA.

9.13.3. There is currently a Code of Conduct to help manage and regulate these activities. This will be extended to include the extended area, whilst there are areas within the current SPA which may also require inclusion, such as bait collection and disturbance, due to the additional features. These costs will be

[36] 'Recreational Disturbance on the Teesmouth & Cleveland Coast SPA' - Report ID INCA 201622

incorporated in the SPA management costs (table 2). It is estimated that costs to extend the current code of conduct will be £4,000[37].

9.13.4. A desk-based study to quantify the level of recreational activity and the potential visual and noise disturbance will be carried out in 2016. There is the potential that an additional survey will be required to assess the impacts of recreational activities in the future.

9.13.5. The **Minimum Scenario** assumes that the desk-based study of recreational activity levels shows no management measures are required.

9.13.6. The **Best Estimate Scenario** assumes that the recreational study shows that no restriction or prohibition of unlicensed recreational activities is required and voluntary codes of conduct, to encourage responsible use of the environment, are extended to cover the proposed extension at an expected cost of £4,000. We are highly confident that this scenario is most likely.

9.13.7. The cost of the initial study, as well as any potential additional surveys in the future to assess gaps in evidence on the impacts of recreational activities in certain areas, are encompassed in the survey detailed in Section 9.12. Therefore, no additional survey costs are included here.

9.13.8. The **Worst Case Scenario** assumes that the recreational study shows that activity levels have the potential to impact the interest features of the pSPA and the creation of a byelaw to restrict or prohibit certain unlicensed recreational activities is required. Total costs are estimated as £220,000 over the 10 years based on £20,000 (annual) in order to warden the site and £20,000 (one-off) to implement management measures[38].

9.13.9. At this stage we do not know if the recreational study will lead to any requirements for limitations to recreational activities, or which recreational activities would be affected and to what extent. Voluntary codes of conduct to encourage responsible use of the environment would be considered prior to the worst case scenario. The restriction of any recreational activity would be a last resort and consultation with interested parties would be sought before any decision on the best management measure is made. The cost is therefore not quantified in this IA but consultation might help to collate information about any costs.

### 9.14. Unquantified costs

9.14.1. As noted in section 8.1, this IA does not include costs for plans or projects which are unknown, or highly uncertain. Any future developments in the vicinity of the pSPA will incur costs due to the need for a HRA to be undertaken. Therefore, if there are additional developments in future, over and above those outlined in section 9.1 to 9.13, the total costs associated with this designation would be greater than estimated in this IA. However, as explained in relation to the known projects above, see for example section 9.2, we would expect the costs attributable to the pSPA to be minimal as the HRA would be required anyway due to the existing SPA.

[37] Costs based on the development of the Berwickshire and North Northumberland Coast EMC http://www.xbordercurrents.co.uk/management/northumberland-boating-code-of-conduct/

[38] Costs are based on annual salary of a European Management Scheme Officer funded in partnership between INCA, Natural England and the EU Life Project.

### 9.15. Key sectors/activities that will not be impacted on negatively

9.15.1. Work for the IA has identified the following categories of activities that occur within or adjacent to the area covered by the SPA extension. Although in some cases these activities are being impacted by the existing SPA our assessment, as set out in sections 8 and 8.1, has led to the conclusion that none of these activities are likely to be impacted on negatively by the pSPA (assuming that the activities continue at their current levels):

- commercial fishing (including gill netting of salmonids and seafish; trawling; long lining and potting (annex 1);
- transit of commercial and recreational vessels;
- cables and pipelines;
- dredged material disposal;
- marine and coastal recreation;
- farming and agricultural activities;
- house building;
- oil and gas operations;
- proposals for subsea mine exploration;
- defence activities;
- research and education;
- maintenance of jetties;
- mineral extraction;
- coastal defence; and
- nuclear.

## 10. Benefits of the SPA

### 10.1. Summary of benefits

10.1.1. The benefits of the SPA are described below in terms of the ecological impacts and economic benefits.

10.1.2. The Birds Directive aims to promote the maintenance of biodiversity by conserving all wild birds through a number of provisions. The European Directive and corresponding domestic legislation demonstrate that society in the UK seeks to conserve rare and vulnerable birds. This could reflect a range of values such as social, political, moral as well as economic. The Directive and UK legislation recognise that the natural environment has intrinsic value[39] (which means that it has value 'in itself' or 'for its own sake', independent of other things, including people) and seeks to maintain or improve the environment's status.

### 10.2. Ecological impacts

10.2.1. Classification of the pSPA extension will reduce the risk that the size of the populations of common tern and avocet will decrease in the future. This will include the extent of their habitat and the abundance and distribution of their prey. Classification of the site reduces the risk that new human activities and changes to existing activities could have an adverse effect on the bird populations, their habitats and prey. It will also improve the ability to influence the consenting of activities through, for example, recommending the

[39] As is explained in Defra (2007) "While it is recognised that the natural environment has intrinsic value i.e. is valuable in its own right, such non-anthropocentric value is, by definition, beyond any human knowledge".

introduction of effective mitigation measures. Furthermore, classification of the pSPA will provide a monitoring and management mechanism to identify non-anthropogenic changes over time.

### 10.3. Economic benefits

10.3.1. Quantification of the site-specific economic benefits of the proposed extension would require an in-depth valuation study. The effort and resources required for this would be disproportionate to the expected scale of the impacts and therefore benefits are described in qualitative terms.

10.3.2. The pSPA extension may result in benefits through wildlife watching if it encourages people to start this activity, increases the number of wildlife watching visits people make, or improves the visitors' experience. For some of these visitors this wildlife watching could be a contribution to formal education. The Teesmouth Field Centre caters for 3 – 4,000 educational visits to the SPA per year[40]. Although there is moderate confidence that these benefits will occur they are not quantified in this IA[41]. However as an example of the importance of wildlife watching to local economies, it is worth noting that the Teesmouth National Nature reserve attracts 25,000 visitors a year and RSPB Saltholme reserve attracts in excess of 80,000 visitors[42].

10.3.3. The Government's impact assessments associated with the Marine and Coastal Access Act showed that the benefits of a coherent Marine Protected Area network (including marine Natura 2000 sites) would be 5 to 26 times higher than the costs, not including non-use benefits; and the value of the Lundy Marine Nature Reserve to its visitors (as distinct from the UK population as a whole) is estimated to be between £1.4 and 2.8 million a year[41].

10.3.4. In August 2010 the RSPB published the results of research into the economic impact of seabirds to local communities[43]. *'In the 2009 projections, an estimated income of over ...£750,000 coming into the local area was attributable directly to seabirds. This equates to 21.5 FTE jobs being supported by seabirds in the region, or over 5%... of all employed people in the Bempton Parish Council area'.*

10.3.5. Classification of the site extension could potentially provide a stimulus for research in the Tees and Cleveland Coast SPA that increases understanding of the proposed species and their habitat and interaction with industry sectors such as ports and offshore wind.

10.3.6. The pSPA extension may provide access to new opportunities and encourage new collaborations for improved monitoring and research by NGOs, universities and industry on bird species and associated habitats in the area.

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[40] Hartlepool Borough Council 'Teesmouth Field Centre' – See https://hartlepool.fsd.org.uk/kb5/hartlepool/fsd/organisation.page?id=z4LIjpByiJA

[41] For the SPA to have an impact at national scale, an overall increase in the contribution that wildlife watching makes to visitors" wellbeing would need to arise. This is because the contribution that the SPA makes to visitors" wellbeing may substitute for the contribution made by visits to alternative locations in the UK.

[42] RSPB Reserves and Local Economies- See https://www.rspb.org.uk/Images/reserves_localeconomies_tcm9-290937.pdf

[43] The Local Value of Seabirds: Estimating Spending by Visitors to RSPB Coastal Reserves and Associated Local Economic Impact – See http://www.rspb.org.uk/Images/localvalueseabirds_tcm9-258550.pdf

10.3.7. Some people benefit from the knowledge that seabirds and waterbirds are protected and therefore present in higher numbers in an SPA (this is known as existence value). There is no research specific to the pSPA and its interest features, but McVittie and Moran (2008) found significant values for marine production in general. They also gain from having the option to benefit in future from species in the pSPA, even if they do not currently benefit from them (option value). Extra economic evidence for any studies aimed at assessing economic benefits of marine protected areas (both nationally and internationally) will be sought during consultation even though it is expected that these will be treated as indicative estimates.

## 11. Summary of costs and benefits

11.1. In summary, the known costs of the proposed boundary extension arise mainly due to managing and monitoring the site as well as the land management of the terrestrial areas (see section 8). There will also be some costs to assess and if necessary mitigate impacts from some sectors but costs will be minimal to industry (see section 9). Assumptions have been made especially with regards to projecting land management costs for terrestrial areas and therefore projected costs may not be truly represented. Due to the area being highly industrialised it is difficult to predict future development over the 10 year projection period. Costs have only been included for known development so additional costs for HRAs and mitigation measures may be incurred for additional developments.

11.2. The benefits arise through impacts on the populations of redshank, knot, pied avocet, common tern, little tern, Sandwich tern and the waterbird assemblage and their supporting habitat. Classification will provide a mechanism through which anthropogenic impacts on these populations can be identified, monitored and if necessary addressed as well as providing opportunities for research and collaborations. Further benefits include additional wildlife watching opportunities and non-use or existence values.

11.3. If the pSPA is classified, it will provide an important component of the UK's marine protected area network. This could increase the resilience of the marine ecosystem to environmental change, particularly in the context of climate change and market failures in the marine environment.

**Table 5** Summary of total undiscounted costs and benefits of the SPA extension over 10 years

| | **Best Estimate Scenario** | **Minimum Scenario** | **Worst Case Scenario** |
|---|---|---|---|
| **Total 10 year undiscounted costs (£s)** | | | |
| Managing the SPA (Tees Estuary Partnership) (section 8.3) | £600,000<br>Based on the expected recurring costs (from 2016) for the Tees Estuary Partnership (£60,000 per year) | £236,500<br>Based on Tees Estuary Partnership costs for 2015 (£23,650 per year) | £820,960<br>Based on Tees Estuary Partnership costs for 2016 (£82,096 per year) |
| Land management of terrestrial wet grassland areas | £956,000<br>Based on the estimated annual costs of managing SPA wet grassland sites (£95,617 per year). | £0<br>There is the potential for landowners to let out grazing areas which would result in | £1,200,000<br>These costs would arise if significant infrastructure requirements/maintenance i.e. Fencing etc. is required. |

| | | | |
|---|---|---|---|
| (section 8.4) | | minimal costs. | |
| Initial (one-off) verification survey (section 9.12) | £3,600<br>Assumes that a one-off additional survey will be carried out which can use a PD Ports vessel and be undertaken by students | £0<br>Assumes the proposed survey will not be carried out | £7,000<br>Includes the cost of a vessel to carry out the surveys and that a consultant is required to carry out the disturbance surveys |
| Additional (annual) disturbance surveys (section 9.12) | £55,000<br>It is envisaged that these annual surveys will collate evidence with particular emphasis on the current bird features and mainly disturbance impacts for the proposed new features of the site.<br><br>Costs are based on the assumption that a PD Ports vessel is used and a combination of Natural England staff and students are used to carry out the disturbance surveys at £5,500 per year | £30,000<br>Assumes that desk studies to look at potential disturbance from recreational and fisheries activity are undertaken at £3,000 per year | £70,000<br>Assumes that the cost of a vessel to carry out the surveys and that a consultant is required to carry out the disturbance surveys at £7,000 per year |
| Surveys to assess condition (section 8.6) | £67,844<br><br>It is assumed that there will be a one-off cost of £25,000 to assess condition.<br><br>Additionally, for terrestrial sites it is assumed with moderate confidence that a condition assessment will be required twice within the 10 years at a cost of £21,422 per assessment (total of £42,844) | £46,422<br><br>It is assumed that the minimal cost to assess the condition of qualifying marine areas will be the same but that terrestrial sites will only need assessment once in the 10 year timeframe. | £89,266<br><br>It is assumed that the worst case cost to assess the condition of qualifying marine areas will be the same but that terrestrial sites will need assessment at least three times in the 10 year timeframe. |
| Recreation (section 9.13) | £4,000<br>It is assumed with high confidence that the recreational study shows that no restriction or prohibition of unlicensed recreational activities is required and voluntary codes of conduct, to | £0<br>Assumed that the desk-based study of recreational activity levels shows no management measures are required. | £220,000<br><br>Based on £20,000 (annual) in order to warden the site and £20,000 (one-off) to implement management measures.<br><br>Assumed that the recreational study shows that activity |

| | | | |
|---|---|---|---|
| | encourage responsible use of the environment, are extended to cover the proposed extension. The cost of the study is encompassed in the survey detailed in Section 9.3. | | levels have the potential to impact the interest features of the pSPA and the creation of a byelaw to restrict or prohibit certain unlicensed recreational activities is required. |
| Ports and Harbours – maintenance dredging (section 9.2) | £800<br>Assumed that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require a one-off ecological assessment to inform a Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed can be mitigated. Consultants will be required to carry out an assessment. It is estimated that a maximum of 1 day will be required to carry out the assessment (£800 per day). | £500<br>Assumed that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached. | £1,500<br>Assumed that additional survey work is required to assess the potential impacts (i.e. water clarity impacts on prey availability etc.) of maintenance dredging within the estuary. This outcome is very unlikely. |
| Ports and Harbours – Review of Northern Gateway planning permission (section 9.2) | £1,200<br>Assumed that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require a one-off ecological assessment to inform a Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed can be mitigated. Consultants will be required to carry out an assessment. It is estimated that a maximum of 1.5 days will | £0<br>Assumed that a conclusion of no likely significant effect is reached during review of consents | Worst case scenario costs could be significant.<br>These costs will include costs to contractors for delay in operations and costs to create compensatory measures if IROPI principles are met.<br>Assumed that the location, scale, timing and duration of the operation cannot be mitigated and there is the potential need to satisfy the test of imperative reasons of overriding public interest, following which sufficient compensation for loss of habitat is required. |

| | | | |
|---|---|---|---|
| | be required to carry out the assessment (£800 per day for principal consultant review) | | |
| Ports and Harbours – Review of maintenance and capital dredging (section 9.2) | £800<br>Assumed that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require a one-off ecological assessment to inform a Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed can be mitigated. Consultants will be required to carry out an assessment. It is estimated that a maximum of 1 day will be required to carry out the assessment (£800 per day). | £500<br>Assumed that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached. | £1,500<br>Assumed that additional survey work is required to assess the potential impacts (i.e. water clarity impacts on prey availability etc.) of maintenance dredging within the estuary. This outcome is very unlikely. |
| Oil and Gas (section 9.3) | £800<br>Assumed that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require a one-off ecological assessment to inform a Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed are already mitigated or can be mitigated. Consultants will be required to carry out an assessment. It is estimated that a maximum of 1 day will be required to carry out the assessment (£800 per day). This will be tested | £0<br>Assumed that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached. | £1,500<br>Assumed that additional survey work is required to assess the potential impacts within the estuary. This outcome is very unlikely. |

| | | | |
|---|---|---|---|
| | further during consultation. | | |
| Carbon Capture and Storage (section 9.5) | £1,600<br>Assumes that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require a one-off ecological assessment to inform a Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed can be mitigated. It is likely that consultants will be required to carry out an Environmental Impact Assessment (EIA). It is estimated that an additional maximum of 2 days will be required for a consultant to carry out an EIA for these features (£800 per day for principal consultant review). This will be tested further during consultation. | £0<br>Assumes that the assessment of the potential impacts assessed for the other features of the SPA is adequate for the additional bird features (terns/avocet/ruff) and a conclusion of no likely significant effect is reached. | Worst case scenario costs could be significant.<br><br>Assumes that the location, scale, timing and duration of the operation cannot be mitigated and there is the potential need to satisfy the test of imperative reasons of overriding public interest, following which sufficient compensation for loss of habitat is required. This scenario is unlikely. |
| Renewables (section 9.7) | £800<br>Assumed that the assessment of the additional bird features (foraging terns, pied avocet and ruff) will require a one-off ecological assessment to inform a Habitats Regulations Assessment but a conclusion of no adverse effect will be concluded and that potential impacts assessed are already mitigated or can be mitigated. Consultants will be required to carry out an assessment. It is | £0<br>Assumed that a conclusion of no likely significant effect is reached during a Habitats Regulation Assessment. | Worst case scenario costs could be significant.<br><br>Assumed that additional survey work is required to assess the potential impacts within the estuary, which could cause significant costs due to delaying the development. This outcome is very unlikely. |

| | | | |
|---|---|---|---|
| | estimated that a maximum of 1 day will be required to carry out the assessment (£800 per day). | | |
| Reassessment of control of major hazards contingency plans (section 9.10) | £70,000<br>It is anticipated that current measures that are required within 12 nautical miles will be sufficient and no additional costs will be required.<br><br>This will be tested during formal consultation. | £70,000 | During stakeholder engagement stakeholders have anticipated that these costs could be significant but need additional information on review periods in order to quantify costs.<br><br>This will be tested during formal consultation. |
| Other unquantified costs of managing the SPA (section 9.14) | Cost of informing users of the site including incorporating the site onto nautical charts and into relevant publications.<br>Other costs to competent and relevant authorities as a result of:<br>• reviewing outstanding or existing consents or permissions;<br>• undertaking Appropriate Assessment for future plans and projects.<br>Natural England may incur additional costs in informing the above. | | |
| **Benefits** | | | |
| Ecological | Reduced risk to the population and habitats of the proposed species from human activities and the provision of a monitoring and management mechanism to identify non-anthropogenic changes over time | | |
| Education | Increased opportunities to educate the public on the proposed species and wider marine conservation issues. | | |
| Research | Stimulus for research to increase understanding of the proposed species and their habitat and interaction with industry sectors such as offshore wind and aggregates. Classification of the pSPA may also provide new opportunities for collaboration. | | |
| Recreational wildlife watching | Protection of and the potential for increased numbers of qualifying and other marine bird species will preserve and potentially improve the quality of bird watching. | | |
| Non-use values | May benefit the (unknown) proportion of the UK population that values conservation of waterbirds and/or the marine environment (estimated with medium confidence). | | |

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# Appendices

A. Abbreviations
B. Definitions of levels of confidence and uncertainty
C. Consents in SPAs within 12nm (as of May 2010)
D. Tees Estuary Partnership steering group list
E. Stakeholders engaged during informal consultation stage
F. Spreadsheets used for the calculations

# A. Abbreviations

| | |
|---|---|
| Defra | Department for Environment, Food and Rural Affairs |
| EC | European Commission |
| EU | European Union |
| HRA | Habitats Regulations Assessment |
| JNCC | Joint Nature Conservation Committee |
| IA | Impact Assessment |
| MCZ | Marine Conservation Zone |
| MPA | Marine Protected Area |
| NE | Natural England |
| pSPA | potential Special Protection Area |
| SAC | Special Area of Conservation |
| SPA | Special Protection Area |
| SSSI | Site of Special Scientific Interest |

# B. Definitions of levels of confidence and uncertainty

The definitions used are based on Intergovernmental Panel on Climate Change (2005).

A level of confidence is used in the IA to describe uncertainty that is based on expert judgment (in terms of the correctness of an analysis or a statement). Definitions of the terms used to communicate this are provided in Table A.1.

**Table A. 1** Definition of terms used to communicate confidence in information

| Terminology | Degree of confidence in being correct |
|---|---|
| Very High confidence | At least 9 out of 10 chance of being correct |

| | |
|---|---|
| High confidence | About 8 out of 10 chance |
| Medium confidence | About 5 out of 10 chance |
| Low confidence | About 2 out of 10 chance |
| Very low confidence | Less than 1 out of 10 chance |

Descriptions of likelihood are used in the IA to provide a probabilistic assessment of an outcomes occurring. The terms used to describe this in the IA are provided in Table A.2.

**Table A. 2** Definition of terms used to communicate the likelihood of outcomes

| Terminology | Likelihood of the occurrence or outcome |
|---|---|
| Virtually certain | More than 99% probability of occurrence |
| Very likely | More than 90% probability |
| Likely | More than 66% probability |
| About as likely as not | 33 to 66% probability |
| Unlikely | Less than 33% probability |
| Very unlikely | Less than 10% probability |
| Exceptionally unlikely | Less than 1% probability |

# C. Consents in SPAs within 12nm (as of May 2010)

Statutory nature conservation advisors[44] in each UK country specify the conservation objectives for an SAC or SPA and provide advice on operations that may take place or are planned which affect the site. These Conservation Objectives and Advice on Operations inform management of activities within the site.

Where a new plan or project requires consent or permission and which affects an SAC or SPA, the regulator, known as the competent authority[45], must make an assessment under the Conservation of Habitats and Species Regulations 2010 and Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended 2009), often known as a Habitats Regulations Assessment (HRA). These transpose the Habitats and Wild Birds Directives into UK law and so form the legal basis for their implementation in the UK's offshore waters, which covers waters beyond 12nm, within British Fishery Limits and the seabed and subsoil within the UK Continental Shelf Designated Area.

The competent authority, will assess whether the new plan or project is directly connected with or necessary to the management of the site for conservation purposes and if not, whether there is likely to be a significant effect[46] on the qualifying features in the SAC or SPA either alone or in combination with other plans or projects. For SPAs, the species for which the site is designated will be taken into account as well as the supporting habitat and prey species. The conservation objectives of the site must be considered as well as the dynamics of the habitats, species and ecology.

The assessment is based on information provided and paid for by the applicant, and may be supplemented by additional information requested by the competent authority. This could involve collecting and processing additional data (see below).

An Environmental Impact Assessment (EIA) is required for most plans and projects and the information may overlap with the Habitats Regulations Assessment (HRA). However, the HRA must be documented separately to the EIA. The information that is required for the assessment of a plan or project proposed within or near a proposed SAC or SPA is likely to differ from that required for an EIA in an area that is not designated as follows:

[44] Natural England is the adviser to the government on nature conservation in England (out to 12 nm), the Countryside Council for Wales is the adviser on nature conservation in Wales (out to 12 nm), and the JNCC advises the government on UK and international nature conservation (beyond 12nm).

[45] A competent authority is a public body that grants consents for regulated activities, for example, the Department of Energy and Climate Change (DECC) is the competent authority for wind farm and oil and gas licensing. Competent authorities are usually a public body or statutory undertaker of any kind. They include all relevant authorities with local powers or functions which have, or could have, an impact in the marine area within or adjacent to a European Marine Site, for example local authorities, harbour authorities or sea fisheries committees. Relevant authorities also have powers to establish a management scheme for a European Marine Site and have a general duty under the legislation to exercise their functions so as to further the conservation of marine SACs and SPAs.

[46] The decision over significance of effect should be precautionary; be determined on a case by case basis in relation to the specific features and environmental conditions of the protected site, and based on assessment of the likelihood of impacts on the site's conservation objectives. The likelihood of the effect occurring should consider various factors including the nature, size and location of a project and resilience of the receiving environment.

- More detailed information on the area and the wider marine environment is likely to be required to set the site in context and to enable monitoring of environmental impacts;
- Plans and projects that cause permanent and physical damage to the seabed may be subject to higher scrutiny by the regulators (though this is not necessarily the case). Developers are expected to justify their proposals and demonstrate that no satisfactory alternatives exist.

If the developer consults appropriately at an early stage and the plan or project has no likely 'significant effect' there will be little or no additional delay arising.

If the plan or project is likely to have a significant effect, the competent authority must undertake an Appropriate Assessment (AA)[47] to consider its implications for the SAC or SPA in view of that site's conservation objectives. They must consult the statutory nature conservation adviser(s) on the AA and have regard to their advice. The statutory nature conservation adviser(s) may advise on the information that is required to inform the assessment (which may include undertaking a baseline survey). Where there is more than one competent authority for a proposed activity the statutory nature conservation adviser(s) may advise that a lead competent authority be nominated to undertake the assessment on behalf of the other competent authorities. The plan or project proponent is responsible for providing and paying for the information required. In the AA the competent authority, with advice from the statutory nature conservation adviser(s) as necessary, will consider whether it is possible to ascertain that the plan or project will not adversely affect the integrity[48] of the SAC or SPA, and will have regard to the manner in which the developer proposes to carry it out. This includes any conditions or restrictions to the consent or permissions which can be applied. If it is not possible to ascertain that there is no adverse effect on the integrity of the site, then the project or plan cannot proceed although this is subject to the provisions of Article 6(4) of the Habitats Directive.

The financial costs of undertaking the Appropriate Assessment fall on the public sector so are not a direct cost to businesses. However, there could be delays to starting the plan or project which are likely to incur costs to the developer. For example, the start may need to be delayed until such time as the Secretary of State is satisfied that the operators have implemented appropriate mitigation strategies to ensure the activities will not adversely affect the integrity of the site. Restrictions may also be placed on the timing or manner in which the plan or project can be implemented, with associated cost implications for the developer. Habitats Directive case examples from across Europe clearly demonstrate that early and open dialogue between the developer, competent authorities and conservation

[47] The Appropriate Assessment is a recorded and reasoned assessment of the implication of the proposal in relation to the conservation objectives of each qualifying feature of the SAC or SPA. Considering all likely and reasonably foreseeable effects, the competent authority has to ascertain that the proposal will **not** have an adverse effect on the integrity of the SAC or SPA before granting permission. The scope and content of the assessment should be appropriate to the nature, location, duration and scale of the proposal and the qualifying features of the site. All aspects of the proposal that can by themselves or in combination with other plans and projects affect the conservation objectives of the site must be identified in light of the best scientific knowledge in the field. In making their assessment, the competent authority may, if it wishes, consult the public or other stakeholders. Although not strictly required, there may be benefits of the Appropriate Assessment considering possible alternative solutions and mitigation measures in terms of the efficiency of the overall Conservation of Habitats and Species Regulations and Offshore Marine Regulations assessment process.

[48] The integrity of an SAC or SPA site is 'the coherence of ecological structure and function across its whole area, that enables it to sustain the habitats (in the case of an SAC) or levels of populations (in the case of an SPA) for which it was classified'.

bodies, can facilitate efficient assessments and successful outcomes for both developers and conservation, and should therefore be regarded as best practice.

When assessing plans and projects that could potentially impact on an SAC or SPA the legislation requires that competent authorities apply the precautionary principle. When advising on the assessment of impacts on SACs and SPAs from human activities, statutory nature conservation advisers will use the best available scientific information. However, when damaging impacts on a site is both potentially significant and uncertain, it is necessary to enact the precautionary principle. Government guidance[49] describes this as follows:

> *"All forms of environmental risk should be tested against the precautionary principle which means that where there are real risks to the site, lack of full scientific certainty should not be used as a reason for postponing measures which are likely to be cost effective in preventing such damage. It does not however imply that the suggested cause of such damage must be eradicated unless proven to be harmless and it cannot be used as a licence to invent hypothetical consequences. Moreover, it is important, when considering whether the information available is sufficient, to take account of the associated balance of likely cost, including environmental costs, and benefits".*

This effectively places the burden of proof on applicants and regulators to objectively demonstrate the absence of effects, rather than requiring those opposing a scheme to show that there would be an effect. This is an important distinction and greatly enhances the protection of habitats under the Habitat Regulations compared with other legislation where a prior approval procedure does not exist. Competent authorities can consent to a plan or project if they can ascertain at the screening stage that there will be no significant effect on an SAC or SPA; or, if an Appropriate Assessment is required, if they can ascertain from that assessment that there will be no adverse effects on the integrity of SACs and SPAs.

A plan or project must be refused if the competent authority cannot demonstrate that there will be no adverse effect on the integrity of the SAC or SPA.

Derogations for limited circumstances are put in place through Article 6(4) of the Habitats Directive which allows that a plan or project with the potential to adversely affect an SAC or SPA may be permissible for 'imperative reasons of over-riding public interest' (IROPI), provided there are no alternative solutions and compensatory measures can be secured. This is for the Secretary of State to decide. An opinion may be sought from the EC. Consent on grounds of IROPI is most likely for activities that are of regional or national strategic importance. Assessment of the grounds for IROPI entails additional costs. If the development is given permission to go ahead despite a negative assessment, the Secretary of State is responsible for ensuring that the developer meets the cost of the compensatory measures required for damage caused to the SAC or SPA in order to protect the overall coherence of the Natura 2000 network. Such costs are likely to be significant and so IROPI should not be regarded as an easy option.

Outstanding decisions, permissions, consents and other authorisations that are not yet completed and that are likely to have a significant effect on an SAC or SPA (either

[49] DETR & The Welsh Office, 1998.

individually or in combination with other plans or projects)[50] and that are not directly connected with or necessary to the management of the site are subject to a review of existing permissions. For an SAC this occurs when the site becomes a candidate SAC (when Defra recommends the site to the European Commission) and for an SPA this occurs when the Secretary of State classifies the site as an SPA and informs the European Commission of this. This review is done under the Habitats and Offshore Marine Regulations by the competent authority responsible for each type of consent, with advice from the statutory nature conservation bodies, and follows a very similar process to that previously outlined for new plans and projects. If the review determines that activities are likely to have a significant effect then an Appropriate Assessment will have to be carried out. If that assessment is not able to ascertain that there will not be an adverse effect on the qualifying features in the site, the permissions may need to be amended or revoked (and in some circumstances, compensation may be paid). In general, plans and projects that do not result in pressures, to which the features are sensitive or that are determined not to have an adverse effect on features in the site may continue though this is not necessarily the case.

*Determining the management measures required for the site*

The management measures required for plans and projects that are relevant to a site will be determined through the processes set out above for plans and projects.

An activity that does not qualify as a 'plan or project' (as referred to in Regulation 61 of the Conservation of Habitats and Species Regulations) still requires management if it is likely to prevent the conservation objectives of the sites from being achieved. The management of such activities, often referred to generically as 'on-going activities', and of which recreation is often an example, is the responsibility of the competent authorities of the site. The competent authorities use the advice on operations and the conservation objectives, to inform their decisions on which activities will require management. The competent authorities are then responsible for implementing the management measures necessary to ensure that the conservation objectives of the sites are met. Stakeholder consultation will ensure that the necessary management measures both protect the features of the sites and account for socio-economic considerations.

[50] For example, licensed areas for aggregate extraction, a wind farm that has been consented but not constructed or an oil well has been consented but not yet drilled.

# D. Tees Estuary Partnership steering group list

Table D.1 Companies/Organisations engaged in the Tees Estuary Partnership

| Company/Organisation |
|---|
| Industry & Nature Conservation Association |
| Northumbria Water Limited |
| North East of England Process Industry Cluster |
| Environment Agency |
| Natural England |
| Stockton Borough Council |
| Redcar & Cleveland Borough Council |
| Hartlepool Borough Council |
| Tees Valley Combined Authority |
| York Potash |
| Tees Valley Wildlife Trust |
| Marine Management Organisation |
| Able UK |
| ConocoPhillips |
| SABIC |
| RSPB |
| MGT Teesside |
| PD Ports |
| Tees and Hartlepool Port Users' Association |

## E. Stakeholders engaged during informal consultation stage

| Company/Organisation |
|---|
| Able UK |
| AC Projects |
| Air Products |
| Augean Plc |
| BOC |
| C L Prosser & Co Ltd |
| Canal River Trust |
| Casper Shipping |
| CF Fertilisers |
| Chair of Teesside Federation of Small Businesses |
| Conoco Phillips |
| Container Ships |
| Cory |
| Deep Ocean UK |
| Denholm |
| Denholm Wilhelmsen |
| EDF Energy |
| Environment Agency |
| Exwold |
| Fairhurst Solicitors |
| Fine Organics |
| FMC |
| Frutarom |
| GAC Shipping UK Ltd |
| Graypen Ltd |
| Greenergy |
| Harbour Management Solutions |
| Hartlepool Borough Council |
| Head of Policy & Campaigns North East Chamber of Commerce |
| Huntsman Pigments |
| Huntsman Polyurethanes |
| ICL (Cleveland Potash) |
| INCA |
| Industrial Chemicals Ltd |
| Ineos Nitriles |
| Inter Terminals |
| KRS Marine |
| LG Maritime |
| Lotte Chemicals |

| |
|---|
| Lucite |
| LV Shipping |
| MGT Power |
| Middlesbrough Council |
| MMO |
| MPI Offshore |
| Navigator Terminals |
| NEPIC |
| North Tees Ltd |
| Northumbrian Water |
| PD Ports (Deputy harbourmaster) |
| Portrack Seafreight |
| PX Limited |
| Readman Steels |
| Recyc-Oil Ltd |
| Redcar & Cleveland Borough Council |
| Redcar Bulk Terminal |
| RSPB |
| SABIC |
| SembCorp |
| Sirius Minerals |
| Stockton Borough Council |
| Svitzer Marine |
| Tata Steel |
| Tees Licensed Foyboatmen's Assoc. |
| Tees Pilots |
| Tees Rivers Trust |
| Tees Valley Nature Partnership Officer |
| Tees Valley Tourism Alliance (Discover Tees Valley) |
| Tees Valley Unlimited |
| Tees Valley Wildlife Trust |
| Teesmouth Bird Club |
| UK Marine Surveys |
| Univar |
| Vertellus |
| Wilton Group |
| Wood Group |

# F. Spreadsheets used for the calculations

## Private and Public sector total and discounted cost splits[51]

| Option 1 | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Appraisal Year** | **0** | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | | |
| | **Year** | **2018** | **2019** | **2020** | **2021** | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** | | |
| | **Discount Factor** | **1** | **0.966184** | **0.933511** | **0.901943** | **0.871442** | **0.841973** | **0.813501** | **0.785991** | **0.759412** | **0.733731** | | |
| | (Add extra collumns if using a time period longer than 10 years and extend formulas) | | | | | | | | | | | | |
| **Private Business Costs** | Note: Fill in numbers exactly in £. and rename Annual Cost 1 etc. to what they are e.g. **Lost Dredger Income**. Low and high ranges are optional if you have the data and know the uncertainties. | | | | | | | | | | | ***Total Costs*** | **Average Annual** |
| **Transitional Costs** | Low | | | | | | | | | | | *£0* | £0 |
| | High | | | | | | | | | | | *£0* | £0 |
| | **Best** | | | | | | | | | | | ***£0*** | **£0** |
| **Managing and monitoring SPA Extension** | Low | £13,650 | £13,650 | £13,650 | £13,650 | £13,650 | £13,650 | £13,650 | £13,650 | £13,650 | £13,650 | *£136,500* | £13,650 |
| | High | £51,750 | £51,750 | £51,750 | £51,750 | £51,750 | £51,750 | £51,750 | £51,750 | £51,750 | £51,750 | *£517,500* | £51,750 |
| | **Best** | **£35,000** | **£35,000** | **£35,000** | **£35,000** | **£35,000** | **£35,000** | **£35,000** | **£35,000** | **£35,000** | **£35,000** | ***£350,000*** | **£35,000** |
| **Land management of additional terrestrial areas** | Low | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | *£0* | £0 |
| | High | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | *£600,000* | £60,000 |
| | **Best** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | ***£478,090*** | **£47,809** |
| **Annual survey costs** | Low | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | *£15,000* | £1,500 |
| | High | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | *£35,000* | £3,500 |
| | **Best** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | ***£27,500*** | **£2,750** |
| **COMAH assessment costs** | Low | £70,000 | | | | | | | | | | *£70,000* | £7,000 |
| one-off | High | £70,000 | | | | | | | | | | *£70,000* | £7,000 |
| | **Best** | **£70,000** | | | | | | | | | | ***£70,000*** | **£7,000** |
| **Commercial sectors (shadow HRAs)** | Low | £1,000 | | | | | | | | | | *£1,000* | £100 |
| | High | £8,100 | | | | | | | | | | *£8,100* | £810 |
| | **Best** | **£6,000** | | | | | | | | | | ***£6,000*** | **£600** |
| ***Total Private Costs*** | *Low* | *£86,150* | *£15,150* | *£15,150* | *£15,150* | *£15,150* | *£15,150* | *£15,150* | *£15,150* | *£15,150* | *£15,150* | *£222,500* | £22,250 |
| | *High* | *£193,350* | *£115,250* | *£115,250* | *£115,250* | *£115,250* | *£115,250* | *£115,250* | *£115,250* | *£115,250* | *£115,250* | *£1,230,600* | £123,060 |
| | ***Best*** | ***£161,559*** | ***£85,559*** | ***£85,559*** | ***£85,559*** | ***£85,559*** | ***£85,559*** | ***£85,559*** | ***£85,559*** | ***£85,559*** | ***£85,559*** | ***£931,590*** | **£93,159** |
| ***Total Discounted Costs*** | *Low* | *£86,150* | *£14,638* | *£14,143* | *£13,664* | *£13,202* | *£12,756* | *£12,325* | *£11,908* | *£11,505* | *£11,116* | *£201,406* | £20,141 |
| | *High* | *£193,350* | *£111,353* | *£107,587* | *£103,949* | *£100,434* | *£97,037* | *£93,756* | *£90,585* | *£87,522* | *£84,562* | *£1,070,136* | £107,014 |
| | ***Best*** | ***£161,559*** | ***£82,666*** | ***£79,870*** | ***£77,169*** | ***£74,560*** | ***£72,038*** | ***£69,602*** | ***£67,249*** | ***£64,974*** | ***£62,777*** | ***£812,465*** | **£81,247** |

| **Public Costs** | Note: Fill in numbers exactly in £. and rename Annual Cost 1 etc. to what they are e.g. **IFCA Enforcement Costs**. Low and high ranges are optional if you have the data and know the uncertainties. | | | | | | | | | | | ***Total Costs*** | **Average Annual** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Transitional Costs (surveys)** | Low | £0 | | | | | | | | | | *£0* | £0 |
| | High | £7,000 | | | | | | | | | | *£7,000* | £700 |
| | **Best** | **£3,600** | | | | | | | | | | ***£3,600*** | **£360** |
| **Managing and monitoring SPA Extension** | Low | £10,000 | £10,000 | £10,000 | £10,000 | £10,000 | £10,000 | £10,000 | £10,000 | £10,000 | £10,000 | *£100,000* | £10,000 |
| | High | £30,346 | £30,346 | £30,346 | £30,346 | £30,346 | £30,346 | £30,346 | £30,346 | £30,346 | £30,346 | *£303,460* | £30,346 |
| | **Best** | **£25,000** | **£25,000** | **£25,000** | **£25,000** | **£25,000** | **£25,000** | **£25,000** | **£25,000** | **£25,000** | **£25,000** | ***£250,000*** | **£25,000** |
| **Land management of additional terrestrial areas** | Low | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | *£0* | £0 |
| | High | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | £60,000 | *£600,000* | £60,000 |
| | **Best** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | **£47,809** | ***£478,090*** | **£47,809** |
| **Condition surveys** | Low | £10,711 | | | | | £25,000 | £10,711 | | | | *£46,422* | £4,642 |
| | High | £32,133 | | | | | £25,000 | £32,133 | | | | *£89,266* | £8,927 |
| | **Best** | **£21,422** | | | | | **£25,000** | **£21,422** | | | | ***£67,844*** | **£6,784** |
| **Annual survey costs** | Low | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | £1,500 | *£15,000* | £1,500 |
| | High | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | £3,500 | *£35,000* | £3,500 |
| | **Best** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | **£2,750** | ***£27,500*** | **£2,750** |
| **Recreation** | Low | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | *£0* | £0 |
| | High | £40,000 | £20,000 | £20,000 | £20,000 | £20,000 | £20,000 | £20,000 | £20,000 | £20,000 | £20,000 | *£220,000* | £22,000 |
| | **Best** | **£4,000** | **£0** | **£0** | **£0** | **£0** | **£0** | **£0** | **£0** | **£0** | **£0** | ***£4,000*** | **£400** |
| ***Total Public Costs*** | *Low* | *£22,211* | *£11,500* | *£11,500* | *£11,500* | *£11,500* | *£36,500* | *£22,211* | *£11,500* | *£11,500* | *£11,500* | *£161,422* | £16,142 |
| | *High* | *£172,979* | *£113,846* | *£113,846* | *£113,846* | *£113,846* | *£138,846* | *£145,979* | *£113,846* | *£113,846* | *£113,846* | *£1,254,726* | £125,473 |
| | ***Best*** | ***£104,581*** | ***£75,559*** | ***£75,559*** | ***£75,559*** | ***£75,559*** | ***£100,559*** | ***£96,981*** | ***£75,559*** | ***£75,559*** | ***£75,559*** | ***£831,034*** | **£83,103** |
| ***Total Discounted Costs*** | *Low* | *£22,211* | *£11,111* | *£10,735* | *£10,372* | *£10,022* | *£30,732* | *£18,069* | *£9,039* | *£8,733* | *£8,438* | *£139,462* | £13,946 |
| | *High* | *£172,979* | *£109,996* | *£106,276* | *£102,683* | *£99,210* | *£116,905* | *£118,754* | *£89,482* | *£86,456* | *£83,532* | *£1,086,273* | £108,627 |
| | ***Best*** | ***£104,581*** | ***£73,004*** | ***£70,535*** | ***£68,150*** | ***£65,845*** | ***£84,668*** | ***£78,894*** | ***£59,389*** | ***£57,380*** | ***£55,440*** | ***£717,886*** | **£71,789** |

| **Total Costs** | Note: Please leave this table. | | | | | | | | | | ***Total Costs*** | **Average Annual** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Transitional Costs** | Low | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | *£0* | £0 |
| | High | £7,000 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | *£7,000* | £700 |
| | **Best** | £3,600 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | £0 | ***£3,600*** | **£360** |
| **Total Annual Costs** | Low | £108,361 | £26,650 | £26,650 | £26,650 | £26,650 | £51,650 | £37,361 | £26,650 | £26,650 | £26,650 | *£383,922* | £38,392 |
| | High | £359,329 | £229,096 | £229,096 | £229,096 | £229,096 | £254,096 | £261,229 | £229,096 | £229,096 | £229,096 | *£2,478,326* | £247,833 |
| | **Best** | £262,540 | £161,118 | £161,118 | £161,118 | £161,118 | £186,118 | £182,540 | £161,118 | £161,118 | £161,118 | ***£1,759,024*** | **£175,902** |
| ***Total Costs*** | *Low* | *£108,361* | *£26,650* | *£26,650* | *£26,650* | *£26,650* | *£51,650* | *£37,361* | *£26,650* | *£26,650* | *£26,650* | *£383,922* | £38,392 |
| | *High* | *£366,329* | *£229,096* | *£229,096* | *£229,096* | *£229,096* | *£254,096* | *£261,229* | *£229,096* | *£229,096* | *£229,096* | *£2,485,326* | £248,533 |
| | ***Best*** | *£266,140* | *£161,118* | *£161,118* | *£161,118* | *£161,118* | *£186,118* | *£182,540* | *£161,118* | *£161,118* | *£161,118* | ***£1,762,624*** | **£176,262** |
| ***Total Discounted Costs*** | *Low* | *£108,361* | *£25,749* | *£24,878* | *£24,037* | *£23,224* | *£43,488* | *£30,393* | *£20,947* | *£20,238* | *£19,554* | *£340,869* | £34,087 |
| | *High* | *£366,329* | *£221,349* | *£213,864* | *£206,631* | *£199,644* | *£213,942* | *£212,510* | *£180,067* | *£173,978* | *£168,095* | *£2,156,409* | £215,641 |
| | ***Best*** | ***£266,140*** | ***£155,670*** | ***£150,405*** | ***£145,319*** | ***£140,405*** | ***£156,706*** | ***£148,496*** | ***£126,637*** | ***£122,355*** | ***£118,217*** | ***£1,530,351*** | **£153,035** |

[51] Where worse-case scenario figures are potentially significant but have been unquantified due to a lack of information on potential mitigation measures (see sections 8-9) we have assumed it to equal the best estimate in the tables in Appendix F. Potential worse-case costs are therefore at least as great as the figures in these tables.

# Business Improvement Target (BIT) Assessment Calculator

(NB: For information purposes only)

| Percentage impact on business | Direct impact on business? YES/NO | Option 1 Year | Description of cost or benefit | FIGURES ENTERED IN £M FOR EACH 12 MONTH PERIOD FOLLOWING DATE COSTS / BENEFITS BEGIN 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Transition Costs** | | | | | | | | | | | | |
| 100% | NO | **Transition Cost - Best Estimate** | Initial surveys | 0.004 | | | | | | | | | |
| | | Low | | | | | | | | | | | |
| | | High | | 0.007 | | | | | | | | | |
| | **Annual Costs** | | | | | | | | | | | | |
| 100% | YES | **Annual Cost 1 - Best Estimate** | Managing and monitoring SPA Extension | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 | 0.035 |
| | | Low | | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 | 0.014 |
| | | High | | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 | 0.052 |
| 100% | YES | **Annual Cost 2 - Best Estimate** | Land management of additional terrestrial areas | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 |
| | | Low | | | | | | | | | | | |
| | | High | | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 |
| 100% | YES | **Annual Cost 3 - Best Estimate** | Annual survey costs | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 |
| | | Low | | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | High | | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| 100% | YES | **Annual Cost 4 - Best Estimate** | COMAH assessment costs | 0.070 | | | | | | | | | |
| | | Low | | 0.070 | | | | | | | | | |
| | | High | | 0.070 | | | | | | | | | |
| 100% | YES | **Annual Cost 5 - Best Estimate** | Commercial sectors (shadow HRAs) | 0.006 | | | | | | | | | |
| | | Low | | 0.001 | | | | | | | | | |
| | | High | | 0.008 | | | | | | | | | |
| 0% | NO | **Annual Cost 6 - Best Estimate** | Managing and monitoring SPA Extension | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 | 0.025 |
| | | Low | | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 | 0.010 |
| | | High | | 0.030 | 0.030 | 0.030 | 0.030 | 0.030 | 0.030 | 0.030 | 0.030 | 0.030 | 0.030 |
| 0% | NO | **Annual Cost 7 - Best Estimate** | Land management of additional terrestrial areas | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 | 0.048 |
| | | Low | | | | | | | | | | | |
| | | High | | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 | 0.060 |
| 0% | NO | **Annual Cost 8 - Best Estimate** | Condition surveys | 0.021 | | | | | 0.025 | 0.021 | | | |
| | | Low | | 0.011 | | | | | 0.025 | 0.011 | | | |
| | | High | | 0.032 | | | | | 0.025 | 0.032 | | | |
| 0% | NO | **Annual Cost 9 - Best Estimate** | Annual survey costs | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 | 0.003 |
| | | Low | | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| | | High | | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 | 0.004 |
| 0% | NO | **Annual Cost 10 - Best Estimate** | Recreation | 0.004 | | | | | | | | | |
| | | Low | | | | | | | | | | | |
| | | High | | 0.040 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 | 0.020 |

**Option 1, overview page:**

| Net Benefit (Present Value (PV)) (£m) | | | | | |
|---|---|---|---|---|---|
| Low: | -2.16 | High: | -0.34 | Best Estimate | -1.53 |

| Costs | Total Transition (constant price) | years | Average Annual (excl. Transition, constant price) | Total Cost (present value) |
|---|---|---|---|---|
| Low | 0.0 | | 0.0 | 0.3 |
| High | 0.0 | | 0.2 | 2.2 |
| Best Estimate | 0.0 | | 0.2 | 1.5 |

| Benefits | Total Transition (constant price) | years | Average Annual (excl. Transition, constant price) | Total Benefit (present value) |
|---|---|---|---|---|
| Low | 0.0 | | 0.0 | 0.0 |
| High | 0.0 | | 0.0 | 0.0 |
| Best Estimate | 0.0 | | 0.0 | 0.0 |

| Direct impact on business (Equivalent Annual) £m: | | | | | |
|---|---|---|---|---|---|
| Costs: | 0.1 | Benefits: | 0.0 | Net: | -0.1 |

| Cost of Option | | | |
|---|---|---|---|
| **Total Net Present Value** | **Business Net Present Value** | **Net direct cost to business per year** (EANDCB: 2014 prices; 2015 present value) | **BIT Score** |
| -1.53 | -0.81 | 0.1 | 0.5 |

| NPV / Business NPV Base Years | |
|---|---|
| Price Base Year | 2016 |
| PV Base Year | 2018 |
| Appraisal period | 10 |