Angus Council

Angus Shoreline Management Plan SMP2

Appendix I – Habitats Regulations Appraisal Report

Seaton Cliffs, Arbroath, 2012

Contents Amendment Record

This report has been issued and amended as follows:

Version	Date	Description	Created by	Verified by	Approved by
0	10/10/2012	Draft HRA Screening Report	Ailsa Collins/ Corinna Morgan	Dorian Latham	Jackie Young
1	08/11/2012	Draft HRA Report	Corinna Morgan	Dorian Latham	Sam Box
2	June 2013	HRA report	Corinna Morgan	Dorian Latham	Jackie Young
3	March 2014	Final HRA Report	Corinna Morgan	Dorian Latham	Jackie Young
4	January 2015	HRA with SNH comments	Corinna Morgan	Dorian Latham	Jackie Young
5	February 2016	HRA for SNH final comment	Katie Born	Sam Box	Sam Box
6	March 2016	Final HRA Report for consultation	Katie Born	Sam Box	Sam Box
7	October 2016	Final	Katie Born	Sam Box	Sam Box

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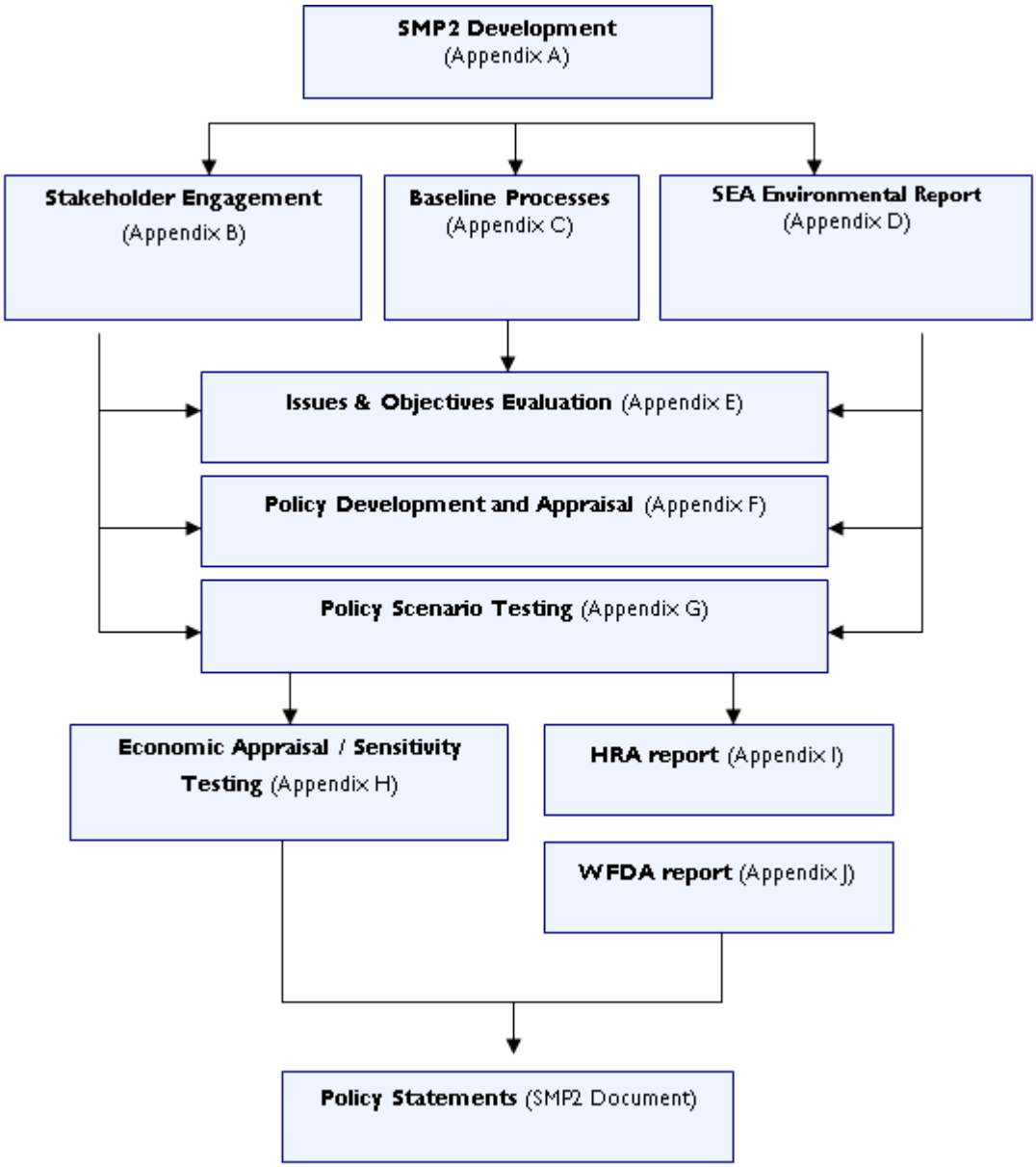
The Supporting Appendices

These appendices and the accompanying documents provide all of the information required to support the Shoreline Management Plan. This is to ensure that there is clarity in the decision-making process and that the rationale behind the policies being promoted is both transparent and auditable. The appendices are:

A: SMP2 Development	This reports the history of development of the SMP, describing more fully the plan and policy decision-making process.
B: Stakeholder Engagement	All communications from the stakeholder process are provided here, together with information arising from the consultation process.
C: Baseline Process Understanding	Includes baseline process report, defence assessment, NAI and WPM assessments and summarises data used in assessments.
D: Strategic Environmental Assessment (SEA) Environmental Report	This report identifies and evaluates the baseline environmental features (human, natural, historical and landscape) and presents an overview of the environmental assessment process, showing how the requirements of the EU Council Directive 2001/42/EC (the Strategic Environmental Assessment Directive) are met.
E: Issues & Objectives Evaluation	Provides information on the issues and objectives identified as part of the Plan development, including appraisal of their importance.
F: Policy Development and Appraisal	Presents the consideration of generic policy options for each frontage, identifying possible acceptable policies, and their combination into 'scenarios' for testing. Also presents the appraisal of impacts upon shoreline evolution and the appraisal of objective achievement.
G: Policy Scenario Testing	Presents the policy assessment and appraisal of objective achievement towards definition of the Preferred Plan (as presented in the Shoreline Management Plan document).
H: Economic Appraisal and Sensitivity Testing	Presents the economic analysis undertaken in support of the Preferred Plan.
I: Habitat Regulations Assessment	Presents an assessment of the effect the plan will have on European sites.
J: Water Framework Directive Assessment	Presents the Water Framework Directive assessment of the potential hydromorphological changes and consequent ecological impact of the preferred SMP2 policies.
K: Metadatabase and Bibliographic database	All supporting information used to develop the SMP2 is referenced for future examination and retrieval.

Within each appendix cross-referencing highlights the documents where related appraisals are presented. The broad relationships between the appendices are illustrated below.



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Annex

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1 Introduction and Background

1.1 Introduction

This Habitat Regulations Appraisal (HRA) Report (including Appropriate Assessment) has been prepared by Halcrow Group Limited (a CH2M HILL company), on behalf of Angus Council.

Its purpose is to assess the potential impact of the Angus Shoreline Management Plan (SMP) 2 on the Natura 2000 (European) Sites of nature conservation interest, designated under the EU Birds Directive[1] and Habitats Directive[2] (and sites designated under the Ramsar Convention on wetlands[3]) within the SMP zone of influence. These sites will be referred to collectively as Natura sites henceforth in this report.

The purpose of this report is to provide sufficient information on the SMP2, and the HRA methodology, to enable Scottish Natural Heritage (SNH), to form a view on the impacts of the scheme on Natura sites – see Table 1.1 'Setting the Context of the HRA'.

This HRA Report has been prepared in accordance with:

- EU Habitats Directive (Council Directive 92/43/EEC)
- EU Birds Directive (Council Directive 2009/147/EC)
- Scottish Executive Guidance on Appropriate Assessment
- EC Guidance on Appropriate Assessment
- Habitats Regulation Appraisal of Plans: Guidance for Plan Making Bodies in Scotland (Scottish Natural Heritage (SNH) 2015)
- Current best practice and SNH's recommended approach to methodology and reporting.

SNH has been involved in the development of the SMP2 (and associated Strategic Environmental Assessment) and has been formally consulted on a draft HRA with regard to the condition of and associated pressures on the relevant Natura sites. This report provides the updated HRA (based on comments received from SNH) including an Appropriate Assessment.

[1] Council Directive 2009/147/EC on the Conservation of Wild Birds (the 'Birds Directive').
[2] Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Fauna and Flora (the 'Habitats Directive')
[3] www.ramsar.org

Table 1.1: Setting the Context of HRA

Responsible Authority	Angus Council
Plan Title	Angus Shoreline Management Plan (SMP) 2
Purpose	Habitat Regulation Appraisal (HRA) to enable SNH to form a view on whether the SMP 2 will have no adverse effect on site integrity of *Natura* sites.
Description	A SMP provides a large scale assessment of the risks associated with coastal evolution and presents a policy framework to address those risks in a sustainable manner, with respect to people, and the developed, human and natural environment. A SMP is a non-statutory, policy document for coastal flood and erosion risk management planning.
Background	The original SMP (Angus SMP – Angus Council 2004) was developed for a period of 50 years on the information available at the time. The SMP needs to be updated to take into consideration new climate change adaptation information, information from coastal monitoring, changes in environmental designations, land use, the natural environment, historical and archaeological features, and how these features may be affected by flooding or erosion over the next 100 years.
Frequency of Updates	At the time of the original SMP studies, Defra guidance suggested that SMPs be reviewed and, if necessary, updated approximately every five years after adoption.
Area Covered	The Angus coastline extends from Milton Ness in the North to the Broughty Ferry Castle in the South. The SMP2 boundary extends slightly beyond the Angus coast; to ensure coastal processes that influence management recommendations are incorporated rather than being fixed by local authority boundaries. The Angus coast has been sub-divided into eight Coastal Process Units (CPUs): • Milton Ness to Montrose Harbour • Montrose Basin • Scurdie Ness to Rickle Craig • Rickle Craig to Lang Craig • Lang Craig to Whiting Ness • Whiting Ness to West Haven • West Haven to Buddon Ness • Buddon Ness to Broughty Castle
***Natura* Sites**	Barry Links Special Area of Conservation (SAC) Montrose Basin Special Protection Area (SPA) and Ramsar site Firth of Tay and Eden Estuary SAC, SPA and Ramsar site Moray Firth SAC Isle of May SAC River South Esk SAC

2 Habitat Regulations Appraisal (HRA) procedure

2.1 Requirements of the EC Habitats Directive

HRA, incorporating appropriate assessment, is required where any plan or project, alone or 'in combination' with other plans or projects, could have an adverse effect on the integrity of designated or candidate Natura Sites (i.e. Special Protection Areas (SPAs) designated under the EC Birds Directive and Special Areas of Conservation (SACs) designated under the EC Habitats Directive). The UK is also party to the International Convention on Wetlands[4], and 'Ramsar sites', like SPAs and SACs, are approved by Scottish Ministers. Most Ramsar sites are also classified as SPAs or SACs but, for those sites which qualify for designation only under the Ramsar Convention (and not as SAC or SPA), the Scottish Executive has chosen as a matter of policy to apply the same considerations to their protection as if they were classified as SPAs.

In accordance with the Guidance for Plan Making Bodies on HRA of Plans (David Tydesley guidance/SNH 2010), Ramsar sites have also been considered in this HRA, *''Paragraph 136 of the consolidated Scottish Planning Policy refers to the fact that all Ramsar sites are also European sites and / or Sites of Special Scientific Interest. Where the interest features of Ramsar sites overlap with those of European sites it is Scottish Government policy to afford them the same protection. The Ramsar interests should be adequately protected by consideration of the effects of plans on the European sites defined above.''*

Consequently, although the Ramsar Convention has worldwide coverage, the sites relevant to this project are all referred to under the term 'Natura sites'.

Plans or projects that should be subject to the Appropriate Assessment process are described in Article 6(3) of the EC Habitats Directive:

Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public.

In Scotland, the Habitats Regulations[5] aim to transpose the requirements of the Habitats Directive and Birds Directives into domestic legislation.

[4] The Convention on Wetlands of International Importance especially as Waterfowl Habitat, Ramsar 1971.

[5] Conservation (Natural Habitats, &c.) Regulations 1994 (as amended in Scotland).

In Scotland, Natura Sites are often underpinned by notification as Sites of Special Scientific Interest (SSSI). Appropriate assessment relates specifically and exclusively to the qualifying interests of Natura sites and not to the broader conservation interests or requirements under other SSSIs. However, the conservation objectives for Natura sites often relate to the SSSIs that underpin the European designations.

2.2 The HRA process

2.2.1 Introduction

HRA promotes a hierarchy of avoidance, mitigation and compensatory measures. First, the project or plan should aim to avoid any negative impacts on Natura sites by identifying possible impacts early in the project or plan development, and altering the project or plan in order to avoid such impacts. These possible significant impacts should be identified during the screening phase, and adverse effects on the integrity of Natura sites should be identified in the appropriate assessment stage.

In SNH's HRA of Plans Guidance (SNH 2010), 13 stages are advised for the HRA process of plans, as shown in Table 2.1.

Table 2.1: Stages to HRA for Plans (SNH 2010)

Stage	Description
1	Decide whether plan is subject to HRA
2	If plan is subject to appraisal, identify European sites that should be considered in the appraisal
3	Gather information about the European sites
4	Discretionary consultation on the method and scope of the appraisal
5	Screen the plan for likely significant effects on a European site
6	Apply mitigation measures
7	Re-screen the plan after mitigation measures applied
8	If significant effects still likely, undertake an Appropriate Assessment in view of conservation objectives
9	Apply mitigation measures until there is no adverse effect on site integrity
10	Prepare a draft record of the HRA
11	Consult SNH (& other stakeholders and the public, if appropriate) on draft HRA
12	Screen any amendments for likely significant effects and carry out Appropriate Assessment if required, re-consult SNH if necessary on amendments
13	Modify HRA record in light of SNH representations and any amendments to the plan and complete and publish final/revised HRA record with clear conclusions

2.2.2 Screening assessment (Stages 1 – 7)

The first consideration in the screening assessment is whether the plan or project is directly connected with or necessary to site management for nature conservation and then whether it is likely to have a significant effect (either individually or in combination with other plans or projects) on the conservation objectives for which the Natura sites have been designated, taking into account advice from SNH. Chapter 4 of this report presents the findings of the screening assessment stage.

In accordance with Stages 5 and 6 of the Guidance for Plan Making Bodies (David Tydesley guidance/SNH 2010), mitigation measures to eliminate or reduce significant impacts have been identified that would be implemented at the project level (construction stage). These have been built into the overall screening process, with the likelihood of significant impact being ruled out, where appropriate, on the basis of objective information. Where impacts cannot be mitigated, the SMP policies have been 'screened in' to the Appropriate Assessment.

2.2.3 Appropriate Assessment (Stages 8 and 9)

Where the screening assessment concludes that the plan or project is likely to cause significant impacts on any Natura site, the plan or project has been subject to a full Appropriate Assessment. The implications of the plan or project must then be assessed in view of the site's conservation objectives, so as to ascertain whether the plan or project will not adversely affect the integrity of the site. Chapter 6 of this report presents the Appropriate Assessment.

2.2.4 Recording HRA process (Stage 10)

This report provides our draft record of the HRA, which we are now seeking agreement to from SNH.

2.2.5 Mitigation measures and alternative solutions

Article 6(4) of the Habitats Directive discusses alternative solutions, the Imperative Reasons of Overriding Public Interest (IROPI) test and compensatory measures:

If, in spite of a negative assessment of the implications for the site and in the absence of alternative solutions, a plan or project must nevertheless be carried out for imperative reasons of overriding public interest, including those of social or economic nature, the Member State shall take all compensatory measures necessary to ensure that the overall coherence of Natura 2000 is protected. It shall inform the Commission of the compensatory measures adopted.

Mitigation measures should be applied during the process to manage predicted adverse impacts on the site(s) remain. However, if the plan or project has an adverse effect on the integrity of the sites, and no further practicable mitigation is possible to manage residual impacts, permission can only be granted if the Scottish Government is satisfied that:

a) there are no available alternative solutions;

b) the plan is required for imperative reasons of over-riding public interest (the IROPI test); and

c) compensatory measures are implemented (e.g. compensatory habitat creation) to maintain the coherence of the Natura 2000 network.

All three clauses must be satisfied.

2.3 Approach to and scope of this assessment

It has been established that this HRA assessment will be undertaken in two phases – an initial screening phase (Chapter 4) and, a subsequent, more detailed, Appropriate Assessment phase (Chapter 6). The likely effects of the implementation of policies identified in the draft Angus SMP2 on site integrity of the European sites are considered alone and in-combination with other plans and projects. This report is based on an examination of Natura Site descriptions and Natura 2000 Standard Data Forms.

As SMPs are high level studies, and due to the fact that they are about Policy setting, rather than proposing specific options at a scheme level, where specific details about construction or engineering proposals will be detailed, it is very difficult to determine the exact effects any proposal would have on the integrity of a European Site, especially in the long term. Also, there are uncertainties regarding future coastal processes. However, as part of the HRA, we have recommended specific additional studies (namely monitoring studies) that will provide further information for later stages of the coastal works strategic framework process, and enable specific mitigation measures to be developed at these later stages.

This HRA indicates where mitigation is likely to be required, to avoid Likely Significant Effects or Adverse Effects on Integrity, and to take a precautionary approach where effects are uncertain. A commitment to the proposed mitigation is provided by including the measures in the SMP's Management Unit Action Plans included at the end of each Policy Statement (in the main SMP2 document).

3 The Angus Shoreline Management Plan (SMP) 2

3.1 SMP2 background

The SMP2 provides a large-scale assessment of the risks associated with coastal erosion and tidal flooding giving a policy framework to manage these risks to people and the developed, natural and historic environment in a sustainable manner over the next 100 years. The Angus SMP2 is an update of the original Angus SMPs (Angus Council, 2004) covering the area from Milton Ness in the North to Broughty Castle, Broughty Ferry in the South, adopted in 2004.

This SMP2 was developed and produced in accordance with the latest Procedural Guidance (PG) for the production of SMPs (Defra, 2006). The SMP2 was initiated in March 2012, with this draft for consultation finalised in February 2016.

Angus Council, as Lead Authority was responsible for the financial management of the project and overall project administration. Angus Council had overall responsibility for the delivery of the SMP2 and was involved throughout the life cycle of the SMP2. As well as initiating the development process and defining the scope and extent of the SMP2, the council was responsible for managing the development of the SMP2 through guidance and review of the work undertaken. The council will also oversee implementation of the SMP2.

Development of this revision of the SMP2 has been led by a Client Steering Group (CSG) including representatives from SNH. The CSG was involved throughout the life cycle of the SMP2 development. As well as providing expert knowledge and information, the CSG was involved in a series of workshops, which included discussing and approving the preferred policies presented in the draft SMP2.

3.2 SMP2 Policy Options

3.2.1 Four main policy options

Four generic policy options were considered as part of the SMP2 and these are listed in Table 3.1. The shoreline management policies considered are those defined by Defra (2006).

Table 3.1 SMP Policy Options

SMP Policy Option	Description
Hold the line (HTL)	Maintain or upgrade the level of protection provided by defences. **Maintenance of existing defences:** is likely to take the form of inspections, monitoring and repairs on a like for like basis. Further details will be developed in agreement with SNH at scheme level. **Upgrading of existing defences**: is likely to involve the replacement (or partial replacement) of the existing defences, taking into consideration increasing forces acting on them over time (as a result of climate change etc). It is not possible to say at this high level SMP stage whether it would be on a like for like basis; this would be determined through optioneering and consultation with SNH at scheme level.
Advance the line (ATL)	Build new defences seaward of the existing defence line.
Managed realignment (MR)	Allowing retreat of the shoreline, with management to control or limit movement. In some areas, managed realignment would involve managing the rate of retreat of a cliff or realignment to higher ground.
No active intervention (NAI)	A decision not to invest in providing or maintaining defences.

3.2.2 Other management techniques

In addition to these generic policies used in the SMP2, SMP1 included a policy of Limited Intervention through dune management for example. Definitions for Limited Intervention and other management techniques referred to in this document are included below:

Limited Intervention - Limited Intervention is described as reducing risk through working with natural processes to allow for natural coastal change (Angus Council, 2004). This may range from measures which attempt to slow down rather than stop coastal erosion, such as dune management, to measures which may include repairing existing defences when damaged but not investing in further capital works to maintain or upgrade or standard of protection.

Dune Management / Stabilisation - Dune management is undertaken to help stabilise dune systems to maintain the flood and coastal defence properties of the dunes and enhance the environmental and social value of the dune system. Dune management measures can include adaptation of backshore management/ uses, access management; dune stabilisation; morphological modification; public awareness and monitoring.

Beach Restoration - Beach Restoration includes adaptation techniques to help restore a beach in response to beach erosion to restore its flood defence properties and/or maintain the amenity value of the beach. Approaches include beach re-nourishment or beach recharge which involves the artificial addition of sediment of suitable quality to a beach area.

3.3 The Preferred Plan

Table 3.2 presents the preferred policy scenarios for the Angus SMP2 (see Figure 3.1), which were selected based on an environmental, technical and economic appraisal of alternative options.

Table 3.2 Existing and Preferred Policy Scenarios for the SMP2 Coastline

Management Units	Existing Policy (and coastal defence type)	Preferred Policy Scenarios		
		Short-term (0-20 years)	Medium-term (20-50 years)	Long-term (50 – 100 years)
Scenario Area 1: Montrose Bay				
MU 1/1 Montrose Bay (Milton Ness to Montrose Links)	**NAI of beach and limited dune stabilisation** along northern section of Montrose Bay	**NAI –** continue to allow the undefended coastline to evolve naturally.		
MU 1/2 Montrose Golf Links	**NAI** in north with **selective HTL** using rock armour around three golf tees	**MR**		
MU 1/3 (a) Splash (The Faulds)	**HTL –** Piled Splash seawall with rock armour toe, rock flank protection and rock groyne	**HTL**	**HTL**	**MR**
MU 1/3 (b) South Links Holiday Park	**HTL –** Rock revetment	**HTL**	**HTL**	**MR**
MU 1/4GlaxoSmithKline	**HTL –**Rock revetment, rock groynes and beach renourishment. Reinstated dunes behind revetment.	**HTL**		
Scenario Area 2: Montrose Basin				

Management Units	Existing Policy (and coastal defence type)	Preferred Policy Scenarios		
		Short-term (0-20 years)	Medium-term (20-50 years)	Long-term (50 – 100 years)
MU 2/1 (a) Montrose Port (north bank – Glaxo to A92 bridge)	**HTL –** Seawalls and revetments	**HTL** - through maintenance e.g. monitoring, inspections and repairs to existing defences. Replacement with similar structures at end of serviceable life. This may mean raising structure crest levels in the future to manage flood risk.		
MU 2/1 (b) Montrose Port (south bank –A92 bridge to Ferryden)	**HTL -** Seawalls and revetments	**HTL** - through maintenance e.g. monitoring, inspections and repairs to existing defences. Replacement with similar structures at end of serviceable life. This may mean raising structure crest levels in the future to manage flood risk.		
MU 2/2 (a) Montrose West (A92 Bridge to the end of railway defences)	**HTL -** Seawalls and revetments	**HTL** - through maintenance e.g. monitoring, inspections and repairs to existing defences. Replacement with similar structures at end of serviceable life to ensure that the risk of flooding and erosion is managed to an appropriate level. This may mean raising structure crest levels in the future to manage flood risk.		
MU 2/2 (b) Montrose West (Railway defences to Tayock River)	**Limited intervention** – railway asset is set back from shoreline, no intervention unless railway at risk from erosion of grassy foreshore.	**HTL** - through maintenance e.g. monitoring, inspections and repairs on a like for like and upgrading the existing defences (e.g. replacement or partial replacement), to ensure that the risk of flooding and erosion is managed. This may mean raising structure crest levels in the future to manage flood risk.		
MU 2/3 (a) Tayock (Tayock village)	**HTL** – masonry walls, gabions, ad hoc defences	**HTL-** through maintenance e.g. monitoring, inspections and repairs on a like for like basis and upgrading the existing defences (e.g. replacement or partial replacement), to ensure that the risk of flooding and erosion is managed. This may mean raising structure crest levels in the future to manage flood risk.		
MU 2/3 (b) Tayock (Tayock Cemetery)	**HTL** – masonry wall, gabions	**HTL-** through maintenance e.g. monitoring, inspections and repairs on a like for like basis and upgrading the existing defences (e.g. replacement or partial replacement), to ensure that the risk of flooding and erosion is managed. This may mean raising structure crest levels in the future to manage flood risk.		

Management Units	Existing Policy (and coastal defence type)	Preferred Policy Scenarios		
		Short-term (0-20 years)	Medium-term (20-50 years)	Long-term (50 – 100 years)
MU 2/4 (a) West Montrose Basin (west of Tayock)	**HTL –** earth embankments	**HTL-** through maintenance e.g. monitoring, inspections and repairs on a like for like basis and upgrading the existing defences (e.g. replacement or partial replacement), to ensure that the risk of flooding and erosion is managed. This may mean raising embankment crest levels in the future to manage flood risk.		
MU 2/4 (b) West Montrose Basin (Bridge of Dun)	**HTL –** earth embankments	**MR -** Construct a new set back defence and then maintain these new defences to ensure that the risk of flooding is managed.		
MU 2/4 (c) West Montrose Basin (Old Montrose)	**HTL –** earth embankments	**HTL-** through maintenance e.g. monitoring, inspections and repairs on a like for like basis and upgrading the existing defences (e.g. replacement or partial replacement), to ensure that the risk of flooding and erosion is managed. This may mean raising embankment crest levels in the future to manage flood risk.		
MU 2/5 Old Montrose to Railway Bridge	**NAI**	**NAI –** Continue to allow the undefended and eroding coastline to evolve naturally.		
MU 2/6 Rossie Island to A92	**HTL –** low concrete seawall, gabions and timber breastwork	**HTL-** through maintenance e.g. monitoring, inspections and repairs to existing defences, with replacement at the end of their serviceable lives, to ensure that the risk of flooding and erosion is managed.		
MU 2/7 Ferryden	**HTL** - Rock armour and concrete seawall on rock platform	**HTL -** through maintenance e.g. monitoring, inspections and repairs to existing defences, with replacement at the end of their serviceable lives, to ensure that the risk of flooding and erosion is managed.		
MU 2/8 Ferryden to Scurdie Ness	**NAI** -rock platform, shingle beaches and dunes	**NAI** – continue to allow the undefended coastline to evolve naturally		
Scenario Area 3: Scurdie Ness to Rickle Craig				
MU 3/1 Scurdie Ness to Rickle Craig	**HTL** - cliff toe protection at Rickle Craig to protect railway **NAI** - Cliff headland and rock platform, with sand/shingle beaches	**NAI** – continue to allow the undefended coastline to evolve naturally		
Scenario Area 4: Lunan Bay				
MU 4/1 Lunan Bay	**NAI** – beach and dune system	**NAI –** continue to allow the undefended coastline to evolve naturally		

Management Units	Existing Policy (and coastal defence type)	Preferred Policy Scenarios		
		Short-term (0-20 years)	Medium-term (20-50 years)	Long-term (50 – 100 years)
MU 4/2 Corbie Knowe	**HTL –** ad hoc seawalls and revetments (limited formal defence structures)	**NAI**		
Scenario Area 5: Lang Craig to Whiting Ness				
MU 5/1 Lang Craig to Whiting Ness	**NAI –** coastal cliffs and isolated sand/shingle beaches	**NAI** – continue to allow the undefended coastline to evolve naturally		
Scenario Area 6: Arbroath to West Haven				
MU 6/1 (a) Victoria Park	**HTL** – concrete sea wall with rock platform, limited areas of sandy beach	**HTL** by maintaining, sustaining or improving the rock platform and seawall		
MU 6/1 (b) Seagate	**HTL** – shingle beach with masonry property boundary walls	**HTL** by maintaining, sustaining or improving the masonry boundary walls		
MU 6/2 Arbroath Harbour	**HTL** – masonry seawall and breakwater and masonry quay walls in outer/inner harbour	**HTL** by maintaining, sustaining or improving the quay walls, seawalls and breakwaters		
MU 6/3 Inchcape Park to Westway Road	**HTL** – rock armour revetments, concrete and masonry seawalls with rock platform and sandy beaches	**HTL** by maintaining, sustaining or improving the rock armour and seawalls		
MU 6/4 (a) West Links to East Haven	**Selective HTL** – rock armour at sewage treatment plant, masonry wall at railway asset. Otherwise, sandy beach fronted by rock platform	**HTL** by monitoring and maintenance of existing limited defences, repairing as necessary and replacement at end of serviceable life.		
MU 6/4 (b) East Haven	**Limited intervention –** monitoring of sandy beach backed by low dunes, no formal works	**MR –** allow the coastline to evolve naturally; encourage adaptation and resilience measures for properties at risk of flooding; an adaptation plan will be developed allowing the community to continue with the managed realignment policy.		
MU 6/4 (c) East Haven to West Haven	**NAI –** rock platform with sand beach and frontal dunes	**NAI** – continue to allow the undefended coastline to evolve naturally		
Scenario Area 7: Carnoustie				
MU 7/1 West Haven to Carnoustie Station	**Selective HTL** – rock armour protection at isolated properties and pumping station	**HTL** by monitoring and inspections of defences, repairing as necessary. Replacement of assets at the end of their serviceable lives (assuming they are still		

Management Units	Existing Policy (and coastal defence type)	Preferred Policy Scenarios		
		Short-term (0-20 years)	Medium-term (20-50 years)	Long-term (50 – 100 years)
		required), probably on a like for like basis. Increases in crest level may be required to mitigate climate change effects.		
MU 7/2 Carnoustie Station to Barry Burn	**HTL** – rock armour revetment and wall along raised crest line	**HTL** monitoring and inspections of defences, repairing as necessary. Replacement of assets at the end of their serviceable lives (assuming they are still required), probably on a like for like basis. Increases in crest level may be required to mitigate climate change effects.		
Scenario Area 8: Buddon Ness				
MU 8/1 Barry Sands East	**HTL** – rock armour revetment	**HTL** - periodic maintenance (e.g. monitoring, inspections and repairs to rock revetment). Limited intervention is anticipated rather than upgrading of defences.		
MU 8/2 Barry Buddon & Barry Sands West	**NAI**- sand beach with dune system	**NAI** - continue to allow the undefended dune system to evolve naturally		
Scenario Area 9: Monifieth to Broughty Ferry				
MU 9/1 MoD Boundary to west Tayview Caravan Park	**HTL/Limited Intervention** – limited intervention as the shoreline accretes at this location. There is a buried rock armour revetment and timber groynes.	**HTL –** continue to monitor the beaches which currently bury the revetment, i.e. limited intervention. If revetment becomes exposed, regular inspections and repairs as necessary. Replacement at the end of its serviceable life.		
MU 9/2 Monifieth West	**HTL –** small section of rock armour revetment, timber breastwork and timber groynes.	**HTL** - through maintenance e.g. monitoring, inspections and repairs of rock armour revetment, breastwork and groynes on a like for like basis. Replacement of defences at the end of their serviceable lives, probably on a like for like basis. Increases in crest level may be required to mitigate climate change effects. NAI along sand beach and dune system along majority of frontage		
MU 9/3Barnhill to the Esplanade	**HTL** – rock armour revetments, timber breastwork/groynes, gabions	**HTL** - through maintenance e.g. monitoring, inspections and repairs of existing rock armour revetment, breastwork and groynes. Replacement of defences at the end of their serviceable lives, most likely on a like for like basis. Increases in crest level may be required to mitigate climate change effects.		
MU 9/4 Broughty Ferry	**HTL** – timber groynes and concrete wall	**HTL** - through limited intervention in a		

Management Units	Existing Policy (and coastal defence type)	Preferred Policy Scenarios		
		Short-term (0-20 years)	Medium-term (20-50 years)	Long-term (50 – 100 years)
East	behind dune system, some rock armour	small area and dune management along the majority of the frontage. Replacement of defences at the end of their serviceable lives, most probably on a like for like basis. Increases in crest level may be required to mitigate climate change effects.		
MU 9/5 Broughty Ferry	**HTL** – rock revetment; concrete and masonry seawall, fronted by dune system	**HTL** through maintenance e.g. monitoring, inspections and repairs of concrete and masonry wall on a like for like basis, along with dune management. Replacement of defences at the end of their serviceable lives – this may require an increase in structure crest level to mitigate the effects of climate change.		

Figure 3.1 SMP Area

4 HRA Screening

4.1 Decide whether plan is subject to HRA (Stage 1)

The SMP2 is not necessary for the management of any of the Natura Sites in the plan area and it has been confirmed with SNH that the SMP2 should be subject to an HRA (Stage 1).

The purpose of this chapter is, therefore, to determine the potential for significant effects of the SMP2 on Natura sites.

4.2 Background Information about Natura Sites (Stages 2 – 3)

4.2.1 Relevant Natura Sites

The following Natura sites have been considered, as part of the HRA Screening process:

- Barry Links Special Area of Conservation (SAC)
- Firth of Tay and Eden Estuary SAC
- Firth of Tay and Eden Estuary SPA and Ramsar site
- Montrose Basin SPA and Ramsar site
- Moray Firth SAC
- Isle of May SAC
- River South Esk SAC

Following consultation with SNH in 2016 and the formation of the draft marine SPAs, a European site was assessed as requiring a 'shadow' HRA:

- Outer Firth of Forth and St Andrews Bay Complex proposed SPA (pSPA).

The locations and extent of the designated sites are shown on the figures (except Moray Firth and the Isle of May, which are located over 30km from the SMP area and the pSPA) in Annex A, and the features for which they are designated are summarised in Table 4.1.

4.2.2 Barry Links SAC

Barry Links SAC covers an area of 790ha and comprises a mixture of habitats including salt marshes, salt pastures, salt steppes, coastal sand dunes, sand beaches, inland water bodies, heath, scrub, broad-leaved deciduous woodland, coniferous woodland and other land uses.

The current condition of the dune system (Table 4.1) is understood to be a result of undergrazing, scrub encroachment and natural pressures on the dune features (e.g. erosion in some areas and the changing courses of burns, which are considered an integral component of the dynamic sand dune system).

Table 4.1 Barry Links SAC: Qualifying Interest Features

Qualifying Interest Features (Scientific Name)	Condition
Habitat types listed in Annex I of Council Directive 92/43/EEC (* = priority habitat)	
Atlantic decalcified fixed dunes *(Calluno-Ulicetea)**	Unfavourable recovering
Embryonic Shifting dunes	Unfavourable recovering
Fixed coastal dunes with herbaceous vegetation ('grey dunes)*	Unfavourable no change
Humid dune slacks	Unfavourable no change
Shifting dunes along the shoreline with *Ammophilia arenaria* ('white dunes')	Unfavourable recovering

Conservation Objectives

- To avoid deterioration of the qualifying habitats (listed below) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features; and
- To ensure for the qualifying habitats that the following are maintained in the long term:
    - Extent of the habitat on site
    - Distribution of the habitat within site
    - Structure and function of the habitat
    - Processes supporting the habitat
    - Distribution of typical species of the habitat
    - Viability of typical species as components of the habitat
    - No significant disturbance of typical species of the habitat

4.2.3 Firth of Tay and Eden Estuary SAC

The Firth of Tay and Eden Estuary SAC covers an area of 15,413ha and comprises a mixture of habitats including tidal rivers, estuaries, intertidal habitats, sand beaches, sea cliffs, shingle and inland water bodies.

This SAC supports a nationally important breeding colony of harbour seal Phoca vitulina, which is part of the east coast population of harbour seals that typically utilise sandbanks. There has been an 85% decline in harbour seals in the Firth of Tay between 2000 and 2011 believed to be as a result of coastal and marine activities (SNH 'Seals on Scotland's East Coast').

The qualifying features of the SAC are shown in Table 4.2.

Table 4.2 Firth of Tay and Eden Estuary SAC: Qualifying Interest Features

Qualifying Interest Features (Scientific Name)	Condition
Habitat types listed in Annex I of Council Directive 92/43/EEC (* = priority habitat)	
Estuaries	Favourable - maintained
Habitat types listed in Annex I that are present as a qualifying feature, but not a primary reason for selection of the site	

Qualifying Interest Features (Scientific Name)	Condition
Habitat types listed in Annex I of Council Directive 92/43/EEC (* = priority habitat)	
Mudflats and sandflats not covered by seawater at low tide	Favourable - maintained
Sandbanks, which are slightly covered by seawater all of the time	Favourable - maintained
Species listed in Annex II of Council Directive 92/43/EEC	
Harbour Seal *Phoca vitulina*	Unfavourable declining

Conservation Objectives

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.
- To ensure for the qualifying species that the following are maintained in the long term:
    - Population of the species as a viable component of the site
    - Distribution of the species within site
    - Distribution and extent of habitats supporting the species
    - Structure, function and supporting processes of habitats supporting the species
    - No significant disturbance of the species
- To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying interests.
- To ensure for the qualifying habitats that the following are maintained in the long term:
    - Extent of the habitat on site
    - Distribution of the habitat within site
    - Structure and function of the habitat
    - Processes supporting the habitat
    - Distribution of typical species of the habitat
    - Viability of typical species as components of the habitat
    - No significant disturbance of typical species of the habitat

4.2.4 Firth of Tay and Eden Estuary SPA and Ramsar site

The Firth of Tay and Eden Estuary SPA and Ramsar site covers an area of 6,923ha. For most of its length, the main channel of the estuary lies close to the southern shore and the most extensive intertidal flats are on the northern side, west of Dundee. In Monifieth Bay, the substrate becomes sandier and there are also Mussel Mytilus edulis beds. The south shore consists of fairly steeply shelving mud and shingle. The Inner Tay Estuary is particularly noted for the continuous dense stands of Common Reed Phragmites australis along its northern shore. These reedbeds, inundated during high tides, are amongst the largest in Britain. There are areas of saltmarsh further east. The site is important in summer months for breeding terns and Marsh Harrier Circus aeruginosus, and there are major concentrations of waterbirds (see Table 4.3), especially waders, sea-ducks and geese in the overwintering and migratory periods.

Table 4.3 **Firth of Tay and Eden Estuary SPA and Ramsar site: Qualifying Interest Features**

Qualifying Interest Features (Scientific Name)	Condition
SPA	
Populations of European importance of regularly occurring Annex 1 bird species (under Article 4.1 of Directive 209/147/EC)	
Marsh harrier *Circus aeruginosus* (breeding)	Favourable maintained
Little tern *Sterna albifrons* (breeding)	Unfavourable, no change
Bar tailed god-wit *Limosa lapponica* (overwintering – non-breeding)	Favourable maintained
Populations of European importance of migratory bird species (under Article 4.2 of Directive 209/147/EC)	
Greylag Goose *Anser anser* (non-breeding)	Favourable declining
Pink-footed goose *Anser brachyrhynchus* (non-breeding)	Unfavourable, no change
Redshank *Tringa totanus* (non-breeding)	Favourable maintained
Populations of European importance of regularly occurring overwintering bird species (under Article 4.2 of Directive 209/147/EC)	
Velvet Scoter *Melanitta fusca*, Pink-footed Goose *Anser brachyrhynchus*, Greylag Goose *Anser anser*, Redshank *Tringa totanus*, Cormorant *Phalacrocorax carbo,* Shelduck *Tadorna tadorna*, Eider *Somateria mollissima*, Bar-tailed Godwit *Limosa lapponica*, Common Scoter *Melanitta nigra*, Black-tailed Godwit *Limosa limosa islandica*, Goldeneye *Bucephala clangula*, Red-breasted Merganser *Mergus serrator*, Goosander *Mergus merganser*, Oystercatcher *Haematopus ostralegus*, Grey Plover *Pluvialis squatarola*, Sanderling *Calidris alba*, Dunlin *Calidris alpina alpina*, Long-tailed duck *Clangula hyemalis*.	
Internationally important assemblage of birds (under Article 4.2 of Directive 209/147/EC)	
Regularly supporting at least 20,000 waterfowl	
Ramsar site	
Ramsar Criterion 5: Assemblages of international importance	
Species with peak counts in winter: 27028 waterfowl (5 year peak mean 1998/99-2002/2003)	Favourable maintained

Qualifying Interest Features (Scientific Name)	Condition
Ramsar Criterion 6: Species/populations occurring at levels of international importance.	
Common redshank *Tringa totanus tetanus* (peak counts in spring/autumn)	Favourable maintained
Pink-footed goose , *Anser brachyrhynchus* (peak counts in winter)	Favourable recovered
Greylag goose , *Anser anser anser* (peak counts in winter)	Favourable declining
Bar-tailed godwit , *Limosa lapponica lapponica* (peak counts in winter)	Favourable maintained
Species/populations identified subsequent to designation for possible future consideration under criterion 6.	
Goosander , *Mergus merganser merganser* (peak counts in winter)	-

Conservation Objectives

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.
- To ensure for the qualifying species that the following are maintained in the long term:
    - Population of the species as a viable component of the site
    - Distribution of the species within site
    - Distribution and extent of habitats supporting the species
    - Structure, function and supporting processes of habitats supporting the species
    - No significant disturbance of the species

4.2.5 Montrose Basin SPA and Ramsar site

Montrose Basin SPA and Ramsar site is an enclosed tidal basin covering an area of 985ha. The designated sites comprise areas of mud-flat, marsh and agricultural land, and Dun's Dish, a small eutrophic loch. It is a good natural example of an estuary, relatively unaffected by development, with high species diversity in the intertidal zone and supporting a large population of wintering waterbirds (see Table 4.4).

Table 4.4 Montrose Basin SPA and Ramsar site: Qualifying Interest Features

Qualifying Interest Features (Scientific Name)	Condition
SPA	
Populations of European importance of regularly occurring migratory bird species (under Article 4.2 of Directive 209/147/EC)	
Greylag goose , *Anser anser anser*	Unfavourable no change
Knot *Calidris canutus*	Favourable maintained
Pink-footed goose *Anser brachyrhynchus*	Favourable maintained
Redshank *Tringa totanus*	Favourable maintained
Internationally important assemblage of birds (under Article 4.2 of Directive 209/147/EC)	
Regularly supporting at least 20,000 waterfowl. Over winter, the area regularly supports 54,917 individual waterfowl (5 year peak mean 1991/2 - 1995/6) including: Dunlin *Calidris alpina alpina*, Oystercatcher *Haematopus ostralegus*, Eider *Somateria mollissima*, Wigeon *Anas penelope*, Shelduck *Tadorna tadorna*, Redshank *Tringa totanus*, Knot *Calidris canutus*, Greylag Goose *Anser anser*, Pink-footed Goose *Anser brachyrhynchus*.	

Qualifying Interest Features (Scientific Name)	Condition
SPA	
Populations of European importance of regularly occurring migratory bird species (under Article 4.2 of Directive 209/147/EC)	
Ramsar site	
Ramsar Criterion 1:	
A particularly good example of an estuary, being relatively unaffected by land-claim, industrial development or pollution. Montrose Basin has a remarkably high species diversity in the intertidal zone when compared with other sites. The site hydrology is unusual, although the main mudflat is exposed for a long period during each tidal cycle, it remains wet, and therefore supports this high diversity. The complete exchange of water in the Basin with each tide gives the site a high overall water quality. Intertidal mudflats and sandflats are in favourable maintained condition.	
Ramsar Criterion 5: Assemblages of international importance	
Species with peak counts in winter: 29116 waterfowl (5 year peak mean 1998/99-2002/2003)	Favourable maintained
Ramsar Criterion 6: Species/populations occurring at levels of international importance.	
Common redshank *Tringa totanus tetanus* (peak counts in spring/autumn)	Favourable maintained
Pink-footed goose , *Anser brachyrhynchus* (peak counts in winter)	Favourable maintained
Greylag goose , *Anser anser anser* (peak counts in winter)	Unfavourable no change

Conservation Objectives

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained.
- To ensure for the qualifying species that the following are maintained in the long term:
    - Population of the species as a viable component of the site
    - Distribution of the species within site
    - Distribution and extent of habitats supporting the species
    - Structure, function and supporting processes of habitats supporting the species
    - No significant disturbance of the species

4.2.6 Moray Firth SAC

Moray Firth SAC covers an area of 151,347ha and its outer (eastern) boundary is approximately 94km west of Fraserburgh, at Lossiemouth. The designated site is entirely marine, its habitats comprising a large shallow inlet, estuary

and sandbanks which are covered by seawater all the time. The main interest feature of the site is its resident population of 101-250 bottlenose dolphins Tursiops truncatus, which is considered to be rare in a European context. It is also the last remaining resident population in the North Sea and one of only two populations in the UK. The dolphins have long life spans and reproduce slowly. The Moray Firth population is also relatively small and isolated. These factors make the population vulnerable. They are listed in two groups according to whether they qualify under Article 3.1 of Council Directive 92/43/EEC, as habitat types listed in Annex 1 or species listed in Annex 2 (see Table 4.5). All features of European importance are listed (both primary and non-primary) in accordance with the note in the site details6.

Table 4.5 Moray Firth SAC: Qualifying Interest Features

Qualifying Interest Features (Scientific Name)	Condition
Habitat types listed in Annex I of Council Directive 92/43/EEC	
Sandbanks which are slightly covered by sea water all the time (Category C: significant representation)	Favourable - maintained
Species listed in Annex II of Council Directive 92/43/EEC	
Bottlenose dolphin *Tursiops truncatus*	Favourable recovered

Conservation Objectives

- To avoid deterioration of the habitats of qualifying species (Bottlenose dolphins, Tursiops truncatus), or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving Favourable Conservation Status (FCS) for each of the qualifying features.
- To ensure for the qualifying species that the following are established then maintained in the long term:
    - Population of the species (including range of genetic types where relevant) as a viable component of the site
    - Distribution of the species within site
    - Distribution and extent of habitats supporting the species
    - Structure, function and supporting processes of habitats supporting the species
    - No significant disturbance of the species
- To avoid deterioration of the qualifying habitat (sandbanks which are slightly covered by sea water all the time) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving FCS for each of the qualifying features.
- To ensure for the qualifying habitat that the following are maintained in the long term:
    - Extent of the habitat on site

[6] http://jncc.defra.gov.uk/protectedsites/sacselection/sac.asp?EUcode=UK0019857 (Accessed 02/08/2012)

- Distribution of the habitat within the site
- Structure and function of the habitat
- Processes supporting the habitat
- Distribution of typical species of the habitat
- Viability of typical species as components of the habitat
- No significant disturbance of typical species of the habitat

4.2.7 Isle of May SAC

The Isle of May SAC is 357ha area, lying at the entrance to the Firth of Forth comprising sea inlets, saltmarshes, shingle and seacliffs. The SAC supports reefs and a breeding colony of grey seals Halichoerus grypus (see Table 4.6). The site is the largest east coast breeding colony of grey seals in Scotland and the fourth-largest breeding colony in the UK, contributing approximately 4.5% of the annual UK pup production.

Table 4.6 Isle of May SAC: Qualifying Interest Features

Qualifying Interest Features (Scientific Name)	Condition
Annex 1 habitats present as a qualifying feature, but not a primary reason for selection of the site	
Reefs	Favourable - maintained
Species listed in Annex II of Council Directive 92/43/EEC (primary reason for selection of site)	
Grey Seal *Halichoerus grypus*	Favourable - maintained

Conservation Objectives

- To avoid deterioration of the qualifying habitat (Reefs) thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for the qualifying interests; and
- To ensure for the qualifying habitat that the following are maintained in the long term:
    - Extent of the habitat on site
    - Distribution of the habitat within site
    - Structure and function of the habitat
    - Processes supporting the habitat
    - Distribution of typical species of the habitat
    - Viability of typical species as components of the habitat
    - No significant disturbance of typical species of the habitat
- To avoid deterioration of the habitats of the qualifying species (Grey seal Halichoerus grypus) or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features.
- To ensure for the qualifying species that the following are maintained in the long term:
    - Population of the species as a viable component of the site

- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species
- No significant disturbance of the species

4.2.8 River South Esk SAC

The River South Esk SAC is a 479ha area, comprising tidal rivers, estuaries, mudflats and sandflats, lagoons, inland water bodies, bogs, marshes, heath and scub, humid and mesophile grassland, improved grassland, arable land, woodland and urban land uses.

The qualifying features of the SAC are shown in Table 4.7.

Table 4.7 River South Esk SAC: Qualifying Interest Features

Qualifying Interest Features (Scientific Name)	Condition
Species listed in Annex II of Council Directive 92/43/EEC (primary reason for selection of site)	
Freshwater pearl mussel *Margaritifera margaritifera*	Unfavourable declining
Atlantic salmon *Salmo salar*	Unfavourable recovering

Conservation Objectives

- To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, this ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable condition status for each of the qualifying features, and
- To ensure for the qualifying species that the following are maintained in the long term:
    - Population of the species, including range of genetic types for salmon, as a viable component of the site
    - Distribution of the species within the site
    - Distribution and extent of habitats supporting the species
    - Structure, function and supporting processes of habitats supporting the species
    - No significant disturbance of the species
    - Distribution and viability of freshwater pearl mussel host species
    - Structure, function and supporting processes of habitats supporting freshwater pearl mussel host species.

The presence of a healthy population of Atlantic salmon, on which the freshwater pearl mussel relies for part of its life cycle is important in maintaining the population and distribution of the freshwater pearl mussel. Freshwater pearl mussel larvae ('glochidia') are released by the females in summer and a small proportion of these attach themselves to salmon where they live as ectoparasites before dropping off and settling on the substrate the following spring.

4.2.9 Outer Firth of Forth and St Andrews Bay Complex pSPA

The Outer Firth of Forth and St Andrews Bay Complex proposed SPA (pSPA) is a large estuarine/ marine site with a total area of 2720km^{2,} stretching from Arbroath to St Abb's Head and encompassing SMP2 management units MU6-9. It

consists of the outer sections of the adjacent Firth of Forth and Tay, including St Andrew's Bay, together with adjacent marine waters, to the east of the Isle of May. The Firth of Forth and St. Andrew's Bay area attracts one of the largest and most diverse concentrations of marine sea birds in Scotland. It lies adjacent to existing SPAs in the Firth of Forth and Firth of Tay and Eden Estuary, and its marine habitats supports Annex 1 birds and migratory populations of European importance (Table 4.8).

Table 4.8 pSPA: Proposed Qualifying Interest Features

Qualifying Interest Features (Scientific Name)
Populations of European importance of regularly occurring Annex 1 bird species (under Article 4.1 of Directive 209/147/EC)
Red-throated diver (*Gavia stellata*)
Little gull (*Larus minutus*)
Common tern (*Sterna hirundo*))
Arctic tern (*Sterna paradisaea*)
Slavonian grebe (*Podiceps auritus*)
Populations of European importance of migratory bird species (under Article 4.2 of Directive 209/147/EC)
Common eider (*Somateria mollissima mollissima*), Long-tailed duck (*Clangula hyemalis*), Common scoter (*Melanitta nigra*), Velvet scoter (*Melanitta fusca*), Common goldeneye (*Bucephala clangula*), Red-breasted merganser (*Mergus serrator*), Northern gannet (*Morus bassanus*), Manx shearwater (*Puffinus puffinus*), European shag (*Phalacrocorax aristotelis*), Black-legged kittiwake (*Rissa tridactyla*), Common guillemot (*Uria aalge*), Razorbill (*Alca torda*), Atlantic puffin (*Fratercula arctica*), Black-headed gull (*Chroicocephalus ridibundus*), Common gull (*Larus canus*), Herring gull (*Larus argentatus*).

4.3 Consultation with SNH (Stage 4)

SNH has been consulted with regard to the HRA method and scope of appraisal and a copy of comments received together with actions on how the responses have been addressed, is provided in Annex B.

A meeting was also held with SNH on 23 May 2013 to discuss the conclusions of the HRA Screening stage and to discuss the scope and content of the Appropriate Assessment. There has also been consultation with SNH in 2015 during the development of the HRA, and February 2016 to discuss the HRA findings and policy modifications to reduce potential impacts on Natura 2000 sites.

4.4 Screening the Plan for Likely Significant Effects (Stages 5 and 6)

4.4.1 Anticipated impacts of implementation of the SMP2

The preferred SMP2 policies were assessed for potential Likely Significant Effects upon the qualifying features of the Natura 2000 sites. Where applicable, these have been described in Table 4.8 'Assessment of Significant Effects on Natura Sites', and summarised in section 4.4.2.

Table 4.8: Screening for Likely Significant Effects on Natura Sites

Natura Site	**Barry Links Special Area of Conservation (SAC)**			
Location	This SAC lies within Policy Scenario Area 8 'Buddon Ness' (Management Units (MU) 8/1 and 8.2)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
8/1 Barry Sands East	**Hold the line** – maintenance and limited intervention (e.g. monitoring, inspections and repairs on a like for like basis) to ensure that the risk of flooding and erosion is managed. Buddon Ness is used by the MoD as a training area and firing range. The MoD land is identified as a key policy driver, where continued protection is required.	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) Embryonic shifting dunes Fixed coastal dunes with herbaceous vegetation ('grey dunes') Humid dune slacks Shifting dunes along the shoreline with *Ammophilia arenaria*	Constraint of natural dynamism of the dunes. Potential loss of qualifying sand dune habitats in MU8/2 as a result of HTL in MU8/1 through erosion at the end of the fixed defences. Loss of qualifying sand dune habitats if the footprint of defences increase due to maintenance works	Continuing to hold the line has the potential to constrain natural processes from the continued presence of a defence in front of the dune system. There is also the potential to exacerbate dune erosion to a small part of MU8/2 through cut-back immediately to the southern end of the defences. Maintenance works will be designed appropriately to avoid footprint losses, reduce any damage to dune habitats and avoid significant effects on the SAC. Mitigation for works will include: - works area minimised and traffic routed to avoid sensitive dune habitats; and - consultation with SNH to confirm the need for HRA which will prescribe project-level mitigation measures including dune habitat monitoring (if required) when specific details of the scale and nature of the maintenance works are known. The HRA should conclude 'no adverse effects'. Because of the uncertainty regarding the effect on the natural dynamism of the dunes, it is concluded **potential Likely Significant Effects** on the qualifying interest features within the dune system of the SAC**.**

Natura Site	Barry Links Special Area of Conservation (SAC)			
Location	This SAC lies within Policy Scenario Area 8 'Buddon Ness' (Management Units (MU) 8/1 and 8.2)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
8/2 Barry Buddon and Barry Sands West	**No Active Intervention** – continue to allow the dune system to evolve and retreat naturally	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*) Embryonic shifting dunes Fixed coastal dunes with herbaceous vegetation ('grey dunes') Humid dune slacks Shifting dunes along the shoreline with *Ammophilia arenaria*	No impacts identified as a result of NAI.	Mainly, the changes to the dune habitats will be a result of natural change and not the SMP2. However, continuing to hold the line in adjacent MU8/1 has the potential to exacerbate dune erosion to a small part of MU8/2 through cut-back immediately to the southern end of the defences. Overall, it is not anticipated that the dunes will be affected assuming current conditions continue, as the current trend is for the sediment to accrete in this management unit. **No significant effects** on any of the qualifying interest features within the dune system of the SAC**.**

Natura Site	Firth of Tay and Eden Estuary Special Area of Conservation (SAC)			
Location	This SAC lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1, 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
8/1 Barry Sands East	**Hold the line** – periodic maintenance and limited intervention (e.g. monitoring, inspections and repairs crest or toe damage to rock revetment) to ensure that the risk of flooding and erosion is managed.	Estuaries Mudflats and sandflats not covered by seawater at low tide Sandbanks, which are slightly covered by seawater all of the time	Loss of habitat through coastal squeeze (due to rising sea levels), against fixed defences Loss of habitat during maintenance works	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat against the fixed sea defences. Maintenance works will be designed appropriately to avoid footprint losses, reduce any damage to habitats and avoid significant effects on the SAC. Consultation with SNH to confirm the need for HRA which will prescribe project level mitigation measures including dune habitat monitoring (if required) when specific details of the scale and nature of the works are known. The HRA should conclude 'no adverse effects'. **Potential for significant effects** on the estuaries, mudflats and sandflats, and sandbanks of the SAC from coastal squeeze impacts.
		Harbour Seal (*Phoca vitulina*)	Noise and visual disturbance during construction can affect seal behaviour and their distribution	There are no harbour seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). However, as harbour seals are known to use the coast within this management unit, any works will be timed to avoid the seal breeding season (i.e. avoiding works between June to August), and thus avoid exacerbating the current trend in decline of this species. **No significant effects** on harbour seals of the SAC.

Natura Site	Firth of Tay and Eden Estuary Special Area of Conservation (SAC)			
8/2 Barry Buddon and Barry Sands West	**No Active Intervention** – continue to allow the dune system to evolve and retreat naturally	Estuaries Mudflats and sandflats not covered by seawater at low tide Sandbanks, which are slightly covered by seawater all of the time	None identified as a result of NAI.	Any changes to these habitats will be a result of natural change and not a result of the SMP2. **No significant impacts** on the estuaries**,** mudflats and sandflats of the SAC. [The natural inland migration of the intertidal habitats are likely to be beneficial for the designated site].
		Harbour seal (*Phoca vitulina*)	None identified as a result of NAI.	There are no harbour seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). Any changes to habitats supporting harbour seals will be a result of natural change and not a result of the SMP2. **No significant impacts** on harbour seals in the SAC**.**
9/1 MoD Boundary to west Tayview Caravan Park	**Hold the line** through maintenance of existing defences (e.g. monitoring, inspections and repairs on a like for like basis) and limited intervention.	Estuaries, mudflats and sandflats not covered by seawater at low tide Sandbanks, which are slightly covered by seawater all of the time	Loss of habitat through coastal squeeze (due to rising sea levels), against fixed defences	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat against the fixed sea defences. **Potential for significant effects** on the estuaries, mudflats and sandflats, and sandbanks of the SAC
		Harbour seal (*Phoca vitulina*)	Noise and visual disturbance during construction can affect seal behaviour and their distribution	There are no harbour seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). However, as harbour seals are known to use the coast within this management unit, any works will be timed to avoid the seal breeding season (i.e. avoiding works between June to August), and thus avoid exacerbating the current trend in decline of this species.

Natura Site	Firth of Tay and Eden Estuary Special Area of Conservation (SAC)			
				No significant effects on harbour seals of the SAC.
9/2 Monifieth West	**Hold the line** through maintenance (e.g. monitoring, inspections and repairs on a like for like basis) and upgrading the existing defences (e.g. replacement or partial replacement) and restoring / stabilising the upper beach.	Estuaries Mudflats and sandflats not covered by seawater at low tide Sandbanks, which are slightly covered by seawater all of the time	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences, and in the footprint of any defence upgrading	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat against the fixed sea defences. Intertidal habitat may also be lost in the footprint of any upgrading defences. **Potential for significant effects** on the estuaries, mudflats and sandflats, and sandbanks of the SAC
		Harbour Seal (*Phoca vitulina*)	Noise and visual disturbance during construction can affect seal behaviour and their distribution	There are no harbour seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). However, as harbour seals are known to use the coast within this management unit, any works will be timed to avoid the seal breeding season (i.e. avoiding works between June to August), and thus avoid exacerbating the current trend in decline of this species. **No significant effects** on harbour seals of the SAC.
9/3 Barnhill to the Esplanade	**Hold the line** through maintenance (e.g. monitoring, inspections and repairs on a like for like basis), and upgrading the existing defences (e.g. replacement or partial replacement).	Estuaries Mudflats and sandflats not covered by seawater at low tide Sandbanks, which are slightly covered by seawater all of the time	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences, and in the footprint of any defence upgrading	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat against the fixed sea defences. Intertidal habitat may also be lost in the footprint of any upgrading defences. **Potential for significant effects** on the estuaries, mudflats and sandflats, and sandbanks of the SAC
		Harbour Seal (*Phoca vitulina*)	Noise and visual disturbance during construction can affect seal behaviour and their	There are no harbour seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). However, as harbour seals are known to use the coast within this

Natura Site	Firth of Tay and Eden Estuary Special Area of Conservation (SAC)			
			distribution	management unit, any works will be timed to avoid the seal breeding season (i.e. avoiding works between June to August), and thus avoid exacerbating the current trend in decline of this species. **No significant effects** on harbour seals of the SAC.
9/4 Broughty Ferry East	Continue to **Hold the line** through limited intervention and dune management.	Estuaries Mudflats and sandflats not covered by seawater at low tide Sandbanks, which are slightly covered by seawater all of the time	Potential loss of habitat through coastal squeeze (due to rising sea levels), against fixed defences however the existing groyne field has deteriorated.	Limited intervention works and dune management will not constrain natural processes and not cause coastal squeeze of the intertidal habitat. Dune management is likely to benefit the nature conservation site. **No significant impacts** on the estuaries**,** mudflats and sandflats, and sandbanks of the SAC.
		Harbour Seal (*Phoca vitulina*)	Noise and visual disturbance during maintenance and dune management activities can affect seal behaviour and their distribution	There are no harbour seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). However, as harbour seals are known to use the coast within this management unit, any works will be timed to avoid the seal breeding season (i.e. avoiding works between June to August), and thus avoid exacerbating the current trend in decline of this species. **No significant effects** on harbour seals of the SAC.
9/5 Broughty Ferry	**Hold the line** through maintenance (e.g. monitoring, inspections and repairs on a like for like basis, of existing defences), limited intervention and dune management.	Estuaries Mudflats and sandflats not covered by seawater at low tide Sandbanks, which are slightly covered by seawater all of the time	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat against the fixed sea defences. **Potential for significant effects** on the estuaries, mudflats and sandflats, and sandbanks of the SAC

Natura Site	Firth of Tay and Eden Estuary Special Area of Conservation (SAC)			
		Harbour Seal (*Phoca vitulina*)	Noise and visual disturbance during construction can affect seal behaviour and their distribution	There are no harbour seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). However, as harbour seals are known to use the coast within this management unit, any works will be timed to avoid the seal breeding season (i.e. avoiding works between June to August), and thus avoid exacerbating the current trend in decline of this species. **No significant effects** on harbour seals of the SAC.

Natura Site	Firth of Tay and Eden Estuary Special Protection Area (SPA) and Ramsar site			
Location	This SPA lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
8/1 Barry Sands East	**Hold the line** – maintenance and limited intervention (e.g. monitoring, inspections and repairs on a like for like basis) to ensure that the risk of flooding and erosion is managed.	**Annex 1 Breeding Birds** Marsh harrier (*Circus aeruginosus*)	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences. Loss of habitat during maintenance works	The feeding, nesting and breeding ability of Marsh harriers will not be affected by the loss of intertidal habitat, as they use marshy farmland and reedbed habitats for these activities. **No significant effects** on Marsh harriers.
		Annex 1 Breeding Birds Little tern (*sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar tailed god-wit *Limosa*	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences. Loss of habitat during maintenance works	The hold the line policy has the potential to constrain natural processes and there is potential for maintenance works affect habitats. This may result in the loss of intertidal habitat, which may be used by the birds for feeding, nesting and breeding. Maintenance works will be designed appropriately to avoid

Natura Site	Firth of Tay and Eden Estuary Special Protection Area (SPA) and Ramsar site			
Location	This SPA lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
		lapponica **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds** **Ramsar birds including internationally important assemblages of waterfowl**		footprint losses to avoid significant effects on the SPA and routing of construction traffic to avoid the loss of sensitive habitats used by the qualifying species. Consultation with SNH to confirm the need for HRA which will prescribe project level mitigation measures including monitoring (if required) when specific details of the scale and nature of the works are known. The HRA should conclude 'no adverse effects'. **Potential for significant effects** on SPA and Ramsar birds from coastal squeeze impacts.
			Noise and visual disturbance during construction can affect bird nesting and their distribution.	The following appropriate mitigation measures will be applied, to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - works during the winter will be avoided in areas known to be used by overwintering birds (i.e. between 1 October and 31 March). The distribution and population of wintering birds will be identified at project level - nesting areas of Little terns will be identified at the project level and avoided **No significant effects** on SPA and Ramsar birds
8/2 Barry Buddon and Barry Sands West	**No Active Intervention** – continue to allow the dune system to evolve and retreat naturally.	**Annex 1 Breeding Birds** Marsh harrier (*Circus aeruginosus*) and Little tern (*sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar	None identified as a result of NAI.	Any changes to habitats supporting these species will be a result of natural change and not a result of the SMP2. **No significant impacts** on SPA and Ramsar birds**.** [The natural inland migration of the intertidal habitats is likely to be beneficial for the SPA and Ramsar birds].

Natura Site	Firth of Tay and Eden Estuary Special Protection Area (SPA) and Ramsar site			
Location	This SPA lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
		tailed god-wit *Limosa lapponica* **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds** **Ramsar birds including internationally important assemblages of waterfowl**		
9/1 MoD Boundary to west Tayview Caravan Park	**Hold the line** through maintenance of existing defences (e.g. monitoring, inspections and repairs on a like for like basis) and limited intervention.	**Annex 1 Breeding Birds** Marsh harrier (*Circus aeruginosus*)	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences	The feeding, nesting and breeding ability of marsh harriers will not be affected by the loss of intertidal habitat, as they use marshy farmland and reedbed habitats for these activities. **No significant effects** on Marsh harriers.
		Annex 1 Breeding Birds Little tern (*sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar tailed god-wit *Limosa lapponica* **Overwintering migratory species** Greylag goose	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat against the fixed sea defences, which may be used by the birds for feeding, nesting and breeding. **Potential for significant effects** on SPA and Ramsar birds
			Noise and visual	The following appropriate mitigation measures will be

Natura Site	Firth of Tay and Eden Estuary Special Protection Area (SPA) and Ramsar site			
Location	This SPA lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
		(*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds** **Ramsar birds including internationally important assemblages of waterfowl**	disturbance during construction can affect bird nesting and their distribution.	applied to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - works during the winter will be avoided in areas known to be used by overwintering birds (i.e. between 1 October and 31 March). The areas of usage will be identified at the project level, - known nesting areas of Little terns will be avoided. **No significant effects** on SPA and Ramsar birds
9/2 Monifieth West	**Hold the line** through maintenance (e.g. monitoring, inspections and repairs on a like for like basis), upgrading the existing defences (e.g. replacement or partial replacement) and restoring / stabilising the upper beach.	**Annex 1 Breeding Birds** Marsh harrier (*Circus aeruginosus*)	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences. Loss of habitat if the footprint of the defences increases during upgrading works	The feeding, nesting and breeding ability of marsh harriers will not be affected by the loss of intertidal habitat, as they use marshy farmland and reedbed habitats for these activities. **No significant effects** on Marsh harriers.
		Annex 1 Breeding Birds Little tern (*sterna albifrons)* **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds**	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences. Loss of habitat if the footprint of the defences increases during upgrading works	The hold the line policy has the potential to constrain natural processes, and there is potential for the upgrading works to encroach onto the habitats if the footprint of the defences increases. This may result in the loss of intertidal habitat, which may be used by the birds for feeding, nesting and breeding. **Potential for significant effects** on SPA and Ramsar birds
			Noise and visual disturbance during construction can affect bird nesting and their distribution.	By applying the following appropriate mitigation measures at this screening stage, significant noise and visual disturbance effects on qualifying birds can be avoided: - avoiding works during the winter in areas known to be

Natura Site	Firth of Tay and Eden Estuary Special Protection Area (SPA) and Ramsar site			
Location	This SPA lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
				used by overwintering birds (i.e. between 1 October and 31 March), - avoiding known nesting areas of Little terns **No significant effects** on SPA and Ramsar birds
9/3 Barnhill to the Esplanade	**Hold the line** through maintenance (e.g. monitoring, inspections and repairs on a like for like basis) and upgrading the existing defences (e.g. replacement or partial replacement).	**Annex 1 Breeding Birds** Marsh harrier (*Circus aeruginosus*)	Loss of habitat through coastal squeeze (due to rising sea levels), against fixed defences. Loss of habitat if the footprint of the defences increases during upgrading works	The feeding, nesting and breeding ability of marsh harriers will not be affected by the loss of intertidal habitat, as they use marshy farmland and reedbed habitats for these activities. **No significant effects** on Marsh harriers.
		Annex 1 Breeding Birds Little tern (*sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar tailed god-wit *Limosa lapponica* **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds** **Ramsar birds including**	Loss of habitat through coastal squeeze (due to rising sea levels), against fixed defences. Loss of habitat if the footprint of the defences increases during upgrading works	The hold the line policy has the potential to constrain natural processes and there is potential for the upgrading works to encroach onto the habitats if the footprint of the defences increases. This may result in the loss of intertidal habitat, which may be used by the birds for feeding, nesting and breeding. **Potential for significant effects** on SPA and Ramsar birds
			Noise and visual disturbance during construction can affect bird nesting and their distribution.	The following appropriate mitigation measures will be applied to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - avoiding works during the winter in areas known to be used by overwintering birds (i.e. between 1 October and 31 March), - avoiding known nesting areas of Little terns **No significant effects** on SPA and Ramsar birds

Natura Site	Firth of Tay and Eden Estuary Special Protection Area (SPA) and Ramsar site			
Location	This SPA lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
		internationally important assemblages of waterfowl		
9/4 Broughty Ferry East	Continue to **Hold the line** through limited intervention and dune management.	**Annex 1 Breeding Birds** Marsh harrier (*Circus aeruginosus*) and Little tern (*sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar tailed god-wit *Limosa lapponica* **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)* **Internationally important assemblages of SPA birds** **Ramsar birds including internationally important assemblages of waterfowl**	Noise and visual disturbance during dune management may affect bird nesting and bird distribution.	The following appropriate mitigation measures will be applied to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - avoiding works during the winter in areas known to be used by overwintering birds (i.e. between 1 October and 31 March), - avoiding known nesting areas of Little terns **No significant effects** on SPA and Ramsar birds

Natura Site	Firth of Tay and Eden Estuary Special Protection Area (SPA) and Ramsar site			
Location	This SPA lies in Policy Scenario Area 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
9/5 Broughty Ferry	**Hold the line** through maintenance of existing defences (e.g. monitoring, inspections and repairs on a like for like basis), limited intervention and dune management.	**Annex 1 Breeding Birds** Marsh harrier (*Circus aeruginosus*)	Loss of habitat through coastal squeeze (due to rising sea levels), against fixed defences	The feeding, nesting and breeding ability of marsh harriers will not be affected by the loss of intertidal habitat, as they use marshy farmland and reedbed habitats for these activities. **No significant effects** on Marsh harriers.
		Annex 1 Breeding Birds Little tern (*sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar tailed god-wit *Limosa lapponica* **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds** **Ramsar birds including internationally important assemblages of waterfowl**	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat against the fixed sea defences, which may be used by the birds for feeding, nesting and breeding. **Potential for significant effects** on SPA and Ramsar birds
			Noise and visual disturbance during construction can affect bird nesting and their distribution.	The following appropriate mitigation measures will be applied to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - avoiding works during the winter in areas known to be used by overwintering birds (i.e. between 1 October and 31 March), - avoiding known nesting areas of Little terns **No significant effects** on SPA and Ramsar birds

Natura Site	Montrose Basin SPA and Ramsar site			
Location	This SPA lies within Policy Scenario Area 2 (MU 2/2a, 2/2b, 2/3a, 2/3b, 2/4a, 2/4b, 2/4c, 2/5, 2/6)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
2/2a Montrose West (A92 Bridge to the end of railway defences) 2/2b Montrose West (Railway defences to Tayock River) 2/3a Tayock (Tayock village) 2/3b Tayock (Tayock Cemetery) 2/4a West Montrose Basin (west of Taycock) 2/4c West Montrose Basin (Old Montrose) 2/6 Rossie Island to A92	**Hold the line** through maintenance (e.g. monitoring, inspections and repairs on a like for like basis) and upgrading the existing defences (e.g. replacement or partial replacement), to ensure that the risk of flooding and erosion is managed. Defences to the west, in front of designated freshwater assets will be maintained.	**Waterfowl assemblage non-breeding** **Overwintering species** Greylag goose (*Anser anser)*, Knot (*Calidris canutus),* Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Ramsar birds including internationally important assemblages of waterfowl**	Loss of mudflats and sandflats through coastal squeeze (due to rising sea levels), against fixed defences Loss of habitat if the footprint of the defences increases during upgrading works	The hold the line policy has the potential to constrain natural processes and there is potential for the upgrading works to encroach onto key habitats if the footprint of the defences increases. This may result in the loss of intertidal habitat against the fixed sea defences or terrestrial habitats, which may be used by the birds for feeding and roosting. **Potential for significant effects** on SPA and Ramsar birds

Natura Site	Montrose Basin SPA and Ramsar site			
Location	This SPA lies within Policy Scenario Area 2 (MU 2/2a, 2/2b, 2/3a, 2/3b, 2/4a, 2/4b, 2/4c, 2/5, 2/6)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
2/4b West Montrose Basin (Bridge of Dun)	**Managed Realignment:** Construct a new set back defence within the non-designated land (currently agricultural), and maintain these new defences to ensure that the risk of flooding is managed. A set back defence would be constructed and the area allowed to inundate through the failure of defences, a breached or Regulated Tidal Exchange (RTE), reverting to a more natural environment and creating new intertidal areas. The area of realignment has not yet been defined but could comprise between 10ha and 30ha, dependent on landowner agreement, further discussion with SNH at the project level and the existing value of any potential realigned areas to the SPA and Ramsar qualifying interest features.	**Waterfowl assemblage non-breeding** **Overwintering migratory species** Greylag goose (*Anser anser)*, Knot (*Calidris canutus),* Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Ramsar birds including internationally important assemblages of waterfowl**	Habitat change due to breaching or removal of defences for managed realignment.	Creation of between 10ha and 30ha of intertidal habitat through a managed realignment scheme on non-designated land (currently, agricultural) at the Bridge of Dun. Potential loss of SPA designated intertidal habitat due to scouring or reduced water quality during the initial breach has the potential to affect the qualifying bird species. Potential loss of habitat outside the SPA/Ramsar site that may be used by SPA/Ramsar bids for feeding and high tide roosts – uncertain due to lack of information on the potential value of the site to qualifying interest features. **Potential for significant effects** on the SPA and Ramsar birds [Managed realignment is also likely to result in between 10ha and 30ha of intertidal habitat creation that can be used by feeding and roosting birds in the basin. This has the potential to increase the available resource, providing a net benefit].
2/5 Old Montrose to Railway Bridge	**No active intervention:** Allow the undefended and eroding coastline to continue to evolve naturally.	**Waterfowl assemblage non-breeding** **Overwintering migratory Species** Greylag goose (*Anser anser)*, Knot (*Calidris canutus),*	None identified as a result of NAI.	Any changes to these habitats will be a result of natural change and not a result of the SMP2. **No significant impacts** on SPA and Ramsar sites**.** [The natural inland migration of the intertidal habitats is

Natura Site	Montrose Basin SPA and Ramsar site			
Location	This SPA lies within Policy Scenario Area 2 (MU 2/2a, 2/2b, 2/3a, 2/3b, 2/4a, 2/4b, 2/4c, 2/5, 2/6)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
		Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Ramsar birds including internationally important assemblages of waterfowl**		likely to be beneficial for the SPA and Ramsar birds.]

Natura Site	River South Esk SAC			
Location	The River South Esk SAC is upstream of West Montrose Basin (MU 2/4 a, b and c)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
2/4a West Montrose Basin (west of Taycock) 2/4c West Montrose Basin (Old Montrose)	**Hold the line** through maintenance (e.g. monitoring, inspections and repairs on a like for like basis) and upgrading the existing defences (e.g. replacement or partial replacement), to ensure that the risk of flooding and erosion is managed. Defences to the west, in front of designated freshwater assets will be maintained.	Freshwater pearl mussel *Margaritifera margaritifera*	None identified	The potential loss of intertidal habitat from coastal squeeze impacts against the fixed sea defences, or from habitat loss from upgrading works do not have the potential to impact salmon migration (freshwater pearl mussels upstream of Montrose Basin rely on salmon during the parasitic stage of their life cycle). **No significant impacts** on SPA and Ramsar sites.
		Atlantic salmon *Salmo salar*	Noise and vibration	The maintenance and upgrading works would be carried out on land, away from habitat supporting Atlantic salmon. No underwater noise or vibration would therefore be generated by construction of the new embankment. **No significant effects** on SAC Atlantic salmon.
2/4b West Montrose Basin (Bridge of Dun)	**Managed Realignment:** Construct a new set back defence and then maintain these new defences to ensure that the risk of flooding is managed. A set back defence would be constructed and the current embankments allowed to fail (or perhaps breached), leading to an area of previously reclaimed land reverting to a more natural environment and creating new intertidal areas.	Freshwater pearl mussel *Margaritifera margaritifera*	Habitat change (physical loss or gain of habitat)	The potential loss of intertidal habitat due to scouring if the defences are breached and associated temporary impacts on salmon movements and water quality (i.e. increased siltation during any potential breaching of defences) have the potential to temporarily affect salmon migrating in and out of Montrose Basin and the River South Esk. As freshwater pearl mussels upstream of Montrose Basin rely on salmon during the parasitic stage of their life cycle, a reduction in populations of their host fish has the potential to affect this qualifying species. However, by applying the following mitigation at this screening stage, significant effects on the freshwater pearl mussel can be avoided: - timing any breaches in the existing defences (if

Natura Site	River South Esk SAC			
Location	The River South Esk SAC is upstream of West Montrose Basin (MU 2/4 a, b and c)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
				required) to avoid salmon runs/migratory season (i.e. October to May) **No significant effects** on SAC Freshwater pearl mussel [Managed realignment will help to restore the natural hydromorphological functions in the basin, enhancing the local seabed habitat for salmon, which is likely to be beneficial to freshwater pearl mussels].
		Atlantic salmon *Salmo salar*	Habitat change (physical loss or gain of habitat)	The tidal inlet is an important migratory route for fish into and out of Montrose Basin and the River South Esk. The potential loss of intertidal habitat due to scouring if the defences are breached and associated temporary impacts on salmon movements and water quality (i.e. increased siltation during any potential breaching of defences), has the potential to temporarily affect salmon migrating in and out of Montrose Basin and the River South Esk. However, by applying the following mitigation at this screening stage, significant effects on Atlantic salmon can be avoided: - timing any breaches in the existing defences (if required) to avoid salmon runs/migratory season (i.e. October to May) **No significant effects** on SAC Freshwater pearl mussel [Managed realignment will help to restore the natural hydromorphological functions in the lower part of the river, enhancing the local seabed habitat for Atlantic salmon including creating new areas for food and shelter, which may increase fish abundance].

Natura Site	River South Esk SAC			
Location	The River South Esk SAC is upstream of West Montrose Basin (MU 2/4 a, b and c)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
			Noise and vibration	The new embankment to be constructed as part of the managed realignment policy will be constructed on land, away from habitat supporting Atlantic salmon. No underwater noise or vibration would therefore be generated by construction of the new embankment. **No significant effects** on SAC Atlantic salmon
			Increased turbidity levels during construction, when the current embankments fail	The application of appropriate mitigation measures at this screening stage i.e. timing the construction works and any breaches to avoid salmon runs/ migratory season (i.e. October to May), will avoid likely significant effects associated with turbidity. **No significant effects** on SAC Atlantic salmon

Natura Site	Moray Firth SAC			
Location	This SAC lies at a distance of 120km north of the SMP2 area (i.e. 120km north of MU1)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
MU1	**Hold the line, NAI** and **managed realignment** policies	Sandbanks which are slightly covered by sea water all the time (Category C: significant representation)	None identified	Subtidal sandbanks of Moray Firth SAC are located at least 120km north of the SMP2 area. The 'Montrose Basin' coastal process unit, south of this SAC, is self-contained with Montrose Bay being contained between the headlands at Scurdie Ness and Milton Ness, and there is unlikely to be any appreciable longshore transport of beach sediment past these headlands either into or out of the bay. Given the distance, and no known mechanism or pathway by which this habitat feature is likely to be affected by the SMP2 policies, it is concluded that there will be no significant effect on the SAC subtidal sandbanks. **No significant effects** on SAC subtidal sandbanks
MU1	**Hold the line** policies	Bottlenose dolphin *Tursiops truncatus*	Noise disturbance and vibration during construction.	Dolphins occur within the SAC between May and September. The Scottish east coast dolphin population is highly mobile, with the majority of individuals ranging from the inner Moray Firth to Fife, but studies of identifiable individuals indicate that bottlenose dolphins have high levels of residency in the Moray Firth. Although there is potential for bottlenose dolphins to be present in the SMP area, the proposed hold the line policies will be carried out on land and will therefore not result in underwater noise or vibration disturbance. No piling will be undertaken as part of the SMP2 works and therefore there is no potential for vibration effects on these marine mammals.

Natura Site	Moray Firth SAC			
Location	This SAC lies at a distance of 120km north of the SMP2 area (i.e. 120km north of MU1)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
				No significant effects on SAC bottlenose dolphins
Natura Site	**Isle of May SAC**			
Location	This SAC lies at a distance of 31km south of the SMP2 area (i.e. 31km south of MU8/2)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
MU 8/2	**Hold the line, NAI** and **managed realignment** policies	Reefs	None identified	The reefs of this SAC are located at least 31km south of the SMP2 area. Given this distance, this habitat feature is unlikely to be affected by the SMP2 policies. Consequently, it is concluded that there will be no significant effect on reefs. **No significant effects** on SAC reefs
MU 8/2	**Hold the line, NAI** and **managed realignment** policies	Grey Seal *Halichoerus grypus*	Noise disturbance and vibration during breeding, pupping and moulting seasons.	Although there is potential for grey seals to be in the SMP2 area, the SMP2 policies will be carried out on land and will therefore not result in any underwater noise or vibration disturbance. **No significant effects** on SAC grey seals
			Damage to grey seal haul out sites and loss of habitat upon which the seals depend upon.	Seals use haul-out sites for a range of purposes including breeding, resting and moulting (SCOS, 2009). There are no grey seal haul-out sites within the SMP2 area (based on the Sea Mammal Research Unit aerial survey data between August 1996 and 2009). Additionally, most grey seals haul-out on uninhabited islands, offshore sandbanks and rocky areas, which will not be affected by the SMP2 policies. However, if grey seals are identified on beaches in this management unit during the planning of the works, the following mitigation measure will be applied to ensure that significant effects on grey seals are avoided:

Natura Site	Moray Firth SAC			
Location	This SAC lies at a distance of 120km north of the SMP2 area (i.e. 120km north of MU1)			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
				- timing the construction works to avoid the seal breeding, pupping and moulting season (i.e. avoiding works between October and December if seals are present). **No significant effects** on SAC grey seals
			'Visual disturbance	The SMP2 policies will be implemented at a distance of 31km to the main seal colony on the Isle of May, and away from any known grey seal haul out sites - therefore no visual disturbance is anticipated. However, if grey seals are identified on beaches in this management unit during the planning of the works, the following mitigation measure will be applied to ensure that significant effects on grey seals are avoided: - timing the construction works to avoid the seal breeding, pupping and moulting season (i.e. avoiding works between October and December if seals are present). **No significant effects** on SAC grey seals.

Natura Site	Outer Firth of Forth and St Andrews Bay proposed Special Protection Area (pSPA)			
Location	This SPA lies in Policy Scenario Areas 6 'Arbroath to West Haven' (MU 6/1-6/4), 7 'Carnoustie' (MU 7/1-2), 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
6/1 (a) Victoria Park; 6/1 (b) Seagate; 6/2 Arbroath Harbour; 6/3 Inchcape Park to Westway Road; 6/4 (a) West Links to East Haven	**Hold the line** – maintenance and limited intervention (e.g. monitoring, inspections and repairs on a like for like basis) to ensure that the risk of flooding and erosion is managed.	**Annex 1 Birds** Red-throated diver; little gull; common tern; Arctic tern; Slavonian grebe. **Populations of European importance of migratory bird species**	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences Loss of habitat during maintenance works. Noise and visual disturbance during construction can affect bird nesting and their distribution.	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat, which may be used by the birds for feeding, nesting and breeding (e.g. little gull, black-headed gull, common gull, herring gull). Maintenance works will be designed appropriately to avoid footprint losses to avoid significant effects on the SPA and routing of construction traffic to avoid the loss of sensitive habitats used by the qualifying species. Consultation with SNH to confirm the need for HRA which will prescribe project level mitigation measures including monitoring (if required) when specific details of the scale and nature of the works are known. The HRA should conclude 'no adverse effects'. The following appropriate mitigation measures will be applied, to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - works during the winter will be avoided in areas known to be used by overwintering birds (i.e. between 1 October and 31 March). The distribution and population of wintering birds will be identified at project level - nesting areas will be identified at the project level and avoided **Potential for significant effects** on pSPA birds from coastal squeeze impacts.

Natura Site	Outer Firth of Forth and St Andrews Bay proposed Special Protection Area (pSPA)			
Location	This SPA lies in Policy Scenario Areas 6 'Arbroath to West Haven' (MU 6/1-6/4), 7 'Carnoustie' (MU 7/1-2), 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
MU 6/4 (b) East Haven	**Managed Realignment** - allow the coastline to roll back in a managed way	**Annex 1 Birds** Red-throated diver; little gull; common tern; Arctic tern; Slavonian grebe. **Populations of European importance of migratory bird species**	Habitat change due to MR.	**No significant impacts** on pSPA birds**.**
MU 6/4 (c) East Haven to West Haven	**No Active Intervention** – continue to allow the undefended coastline to evolve naturally		None identified as a result of NAI.	Any changes to habitats supporting these species will be a result of natural change and not a result of the SMP2. **No significant impacts** on pSPA birds**.**
MU 7/1 West Haven to Carnoustie Station; MU 7/2 Carnoustie Station to Barry Burn	**Hold the line** – maintenance and inspections of defences, repairing as necessary. Replacement of assets at the end of their serviceable lives (assuming they are still required), probably on a like for like basis	**Annex 1 Birds** Red-throated diver; little gull; common tern; Arctic tern; Slavonian grebe. **Populations of European importance of migratory bird species**	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences. Loss of habitat during maintenance works.	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat, which may be used by the birds for feeding, nesting and breeding (e.g. little gull, black-headed gull, common gull, herring gull). Maintenance works will be designed appropriately to avoid footprint losses to avoid significant effects on the SPA and routing of construction traffic to avoid the loss of sensitive habitats used by the qualifying species. Consultation with SNH to confirm the need for HRA which will prescribe project level mitigation measures including monitoring (if required) when specific details of the scale and nature of the works are known. The HRA should conclude 'no adverse effects'. The following appropriate mitigation measures will be applied, to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided:

Natura Site	Outer Firth of Forth and St Andrews Bay proposed Special Protection Area (pSPA)			
Location	This SPA lies in Policy Scenario Areas 6 'Arbroath to West Haven' (MU 6/1-6/4), 7 'Carnoustie' (MU 7/1-2), 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
			Noise and visual disturbance during construction can affect bird nesting and their distribution.	- works during the winter will be avoided in areas known to be used by overwintering birds (i.e. between 1 October and 31 March). The distribution and population of wintering birds will be identified at project level - nesting areas will be identified at the project level and avoided **Potential for significant effects** on pSPA birds from coastal squeeze impacts.
8/1 Barry Sands East	**Hold the line** – maintenance and limited intervention (e.g. monitoring, inspections and repairs on a like for like basis) to ensure that the risk of flooding and erosion is managed.	**Annex 1 Birds** Red-throated diver; little gull; common tern; Arctic tern; Slavonian grebe. **Populations of European importance of migratory bird species**	Habitat change due coastal squeeze (from rising sea levels) against fixed defences outside site.	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat, which may be used by the birds for feeding, nesting and breeding (e.g. little gull, black-headed gull, common gull, herring gull).
			Noise and visual disturbance during construction can affect bird nesting and their distribution.	The following appropriate mitigation measures will be applied, to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - works during the winter will be avoided in areas known to be used by overwintering birds (i.e. between 1 October and 31 March). The distribution and population of wintering birds will be identified at project level - nesting areas will be identified at the project level and avoided **Potential for significant effects** on pSPA birds from coastal squeeze impacts.

Natura Site	Outer Firth of Forth and St Andrews Bay proposed Special Protection Area (pSPA)			
Location	This SPA lies in Policy Scenario Areas 6 'Arbroath to West Haven' (MU 6/1-6/4), 7 'Carnoustie' (MU 7/1-2), 8 'Buddon Ness' (MU 8/1 and 8/2) and Policy Scenario Area 9 'Monifieth to Broughty Ferry' (MU 9/1 to 9/5).			
Management Unit	**SMP2 Preferred Policy**	**Qualifying Interest Features**	**Potential Impacts**	**Likelihood of Significant Effect**
8/2 Barry Buddon and Barry Sands West	**No Active Intervention** – continue to allow the dune system to evolve and retreat naturally.		None identified as a result of NAI.	Any changes to habitats supporting these species will be a result of natural change and not a result of the SMP2. **No significant impacts** on pSPA birds**.**
9/1 MoD Boundary to west Tayview Caravan Park; 9/2 Monifieth West; 9/3 Barnhill to the Esplanade 9/4 Broughty Ferry East 9/5 Broughty Ferry	**Hold the line** through maintenance of existing defences (e.g. monitoring, inspections and repairs on a like for like basis) and limited intervention and dune management, and upgrading the existing defences (e.g. replacement or partial replacement) and restoring / stabilising the upper beach.	**Annex 1 Birds** Red-throated diver; little gull; common tern; Arctic tern; Slavonian grebe. **Populations of European importance of migratory bird species**	Loss of habitat through coastal squeeze (due to rising sea levels) against fixed defences. Noise and visual disturbance during construction can affect bird nesting and their distribution.	The hold the line policy has the potential to constrain natural processes. This may result in the loss of intertidal habitat, which may be used by the birds for feeding, nesting and breeding (e.g. little gull, black-headed gull, common gull, herring gull). The following appropriate mitigation measures will be applied, to ensure that significant noise and visual disturbance effects on qualifying birds can be avoided: - works during the winter will be avoided in areas known to be used by overwintering birds (i.e. between 1 October and 31 March). The distribution and population of wintering birds will be identified at project level - nesting areas will be identified at the project level and avoided **Potential for significant effects** on pSPA birds from coastal squeeze impacts.

4.4.2 Summary of Impacts

A summary of the anticipated potential Likely Significant Effects of implementation of the SMP2 upon the qualifying features of the Natura 2000 sites identified is presented in Table 4.9.

Table 4.9 – Summary of Significant Impacts on Qualifying Features of Natura 2000 sites.

Site	Qualifying Features	Likely Significant Effects Alone
Barry Links SAC	Atlantic decalcified fixed dunes	Yes
	Embryonic shifting dunes	Yes
	Fixed coastal dunes with herbaceous vegetation ('grey dunes)	Yes
	Humid dune slacks	Yes
	Shifting dunes along the shoreline with *Ammophilia arenaria* ('white dunes')	Yes
Firth of Tay and Eden Estuary SAC	Estuaries	Yes
	Mudflats and sandflats not covered by seawater at low tide	Yes
	Sandbanks, which are slightly covered by seawater all of the time	Yes
	Harbour seal	No
Firth of Tay and Eden Estuary SPA and Ramsar site	Marsh harrier (breeding)	No
	Little tern (breeding)	Yes
	Bar tailed god-wit (overwintering – non-breeding)	Yes
	Greylag goose (non-breeding)	Yes
	Pink-footed goose (non-breeding)	Yes
	Redshank (non-breeding)	Yes
	Internationally important assemblages of SPA birds, Ramsar birds including internationally important assemblages of waterfowl	Yes
Montrose Basin SPA and Ramsar site	Waterfowl assemblage non-breeding	Yes
	Greylag goose (overwintering)	Yes
	Knot (overwintering)	Yes
	Pink-footed goose (overwintering)	Yes
	Redshank (overwintering)	Yes
	Ramsar birds including internationally important assemblages of waterfowl	Yes
River South Esk SAC	Freshwater pearl mussel	No
	Atlantic salmon	No
Moray Firth SAC	Sandbanks which are slightly covered by sea water all the time	No
	Bottlenose dolphin	No
Isle of May SAC	Reefs	No

Site	Qualifying Features	Likely Significant Effects Alone
	Grey seal	No
Outer Firth of Forth and St Andrews Bay pSPA	Red-throated diver	No
	Little gull	Yes
	Common tern	Yes
	Arctic tern	Yes
	Slavonian grebe	No
	Populations of European importance of migratory bird species	Yes

4.5 In Combination Effects (Stage 5 – consideration of likely significant effects in combination)

4.5.1 Introduction

When assessing the implications of a plan or project in light of the conservation objectives for the European site (i.e. assessing the potential for likely significant effect), it is necessary to consider the potential for in-combination effects on the designated interest features/conservation of the site.

SNH's HRA of Plans, Guidance for Plan Making Bodies in Scotland (SNH, 2010) provides guidance on in-combination effects and, in Section 4.3.6, states that other plan and projects should include:

a) the incomplete parts of projects that have been started but which are not yet completed;

b) projects given consent but not yet started;

c) projects that are subject to applications for consent;

d) projects that are subject to outstanding appeal procedures;

e) any known unregulated projects that are not subject to any consent;

f) ongoing projects subject to regulatory reviews, such as discharge consents or waste management licences;

g) policies and proposals that are not yet fully implemented in plans that are still in force;

h) draft plans that are being brought forward by other public bodies and agencies.

In undertaking an in-combination assessment it is important to consider the potential for each plan or project to influence the site. In order for an in-combination effect to arise, the nature of two effects does not necessarily have to be the same.

Other Plans or Projects

The choice of preferred SMP2 policies was undertaken in such a way as to ensure it was fully integrated with relevant strategic plans. The following plans and projects were considered in this HRA:

- TAYplan's Strategic Development Plan (SDP) 2012 – 2032 (2012)
- TAYplan's Proposed Strategic Development Plan 2016-2036 (May 2015)
- Angus Local Plan Review (2009)
- Proposed Angus Local Development Plan (February 2014)

- Dundee Local Development Plan (LDP) (adopted December 2013)
- Aberdeen Local Development Plan (ALDP) 2012 and Supplementary Guidance
- Dundee Coastal Study 2011
- Angus Core Paths Plan 2010
- Tayside Biodiversity Partnership - Coastal & Marine Local Biodiversity
- Action Plan 2016-26
- Tayside Geodiversity Action Plan
- Angus Council Climate Change Strategy and Action Plan 2012 – 2016
- TEF Management Plan 2009-2014
- Offshore Renewables in Scotland

Details of the consideration of likely significant effects of the SMP2 in combination with these plans or projects are described in the section below.

4.5.1.1 TAYplan's Strategic Development Plan (SDP) 2012 – 2032 (2012)

The current Strategic Development Plan was approved by Scottish Ministers on 8 June 2012. There are a number of proposals and settlements identified in the Tayplan's SDP by the Strategic Development Planning Authority (SDPA) for potential development that lie within the SMP2 area. A Record of HRA including Appropriate Assessment (October/November 2011) for the SDP identifies that through implementation of a series of mitigation measures, the development proposals will not adversely affect Barry Links SAC, South River Esk SAC, Firth of Tay and Eden Estuary SAC, SPA and Ramsar site, Montrose Basin SPA, Moray Firth SAC and Isle of May SAC.

Table 4.10 assesses the in-combination impacts of the SDP with the SMP2 on the relevant Natura sites.

Table 4.10: Assessment of In-combination Impacts of SDP with SMP2

Relevant European Sites to the SDP and SMP2	Qualifying interest features	Consideration of Likely Significant Effects: in-combination and cumulative effects
Barry Links SAC	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*), embryonic shifting dunes, fixed coastal dunes with herbaceous vegetation ('grey dunes'), humid dune slacks, shifting dunes along the shoreline with *Ammophilia arenaria.*	None of the development proposals in the SDP are likely to result in the loss of intertidal habitat and therefore the SMP2 is unlikely to act in combination and exacerbate any potentially significant effects already identified. **No likely significant effects in combination on qualifying dune habitats.**

Relevant European Sites to the SDP and SMP2	Qualifying interest features	Consideration of Likely Significant Effects: in-combination and cumulative effects
Firth of Tay and Eden Estuary SAC	Estuaries, mudflats and sandflats not covered by seawater at low tide, sandbanks, which are slightly covered by seawater all the time and harbour seal.	None of the development proposals in the SDP are likely to result in the loss of intertidal habitat and therefore the SMP2 is unlikely to act in combination and exacerbate any potentially significant effects already identified. If the SMP2 works are timed to avoid the seal breeding and pupping season, there will be no in-combination noise impacts on common seals, if any are present in the working area. **No likely significant effects in combination on qualifying intertidal habitats or common seal.**
Firth of Tay and Eden Estuary SPA and Ramsar site	Annex 1 breeding birds, Annex 1 overwintering birds, overwintering migratory species and internationally important assemblages of birds	None of the development proposals in the SDP are likely to result in the loss of intertidal habitat (nor associated impacts on birds) due to the dispersed nature of proposed SPD development around the estuaries, and the protection given to undeveloped land through policy on the undeveloped coast and green belts. Additionally, SPD development proposals do not require the release of additional land or changes of use/development within the port/harbour areas. Consequently, the SMP2 is unlikely to act in combination and exacerbate any potentially significant effects already identified. If the SMP2 works are timed to avoid the bird breeding and overwintering seasons, as outlined in the previous section, there will be no in-combination impacts on qualifying bird species. **No likely significant effects in combination on qualifying birds.**
Outer Firth of Forth and St Andrews Bay pSPA	Annex 1 birds, Populations of European importance of migratory bird species	None of the development proposals in the SDP are likely to result in the loss of intertidal habitat (nor associated impacts on birds) due to the dispersed nature of proposed SPD development around the estuaries, and the protection given to undeveloped land through policy on the undeveloped coast and green belts. Additionally, SPD development proposals do not require the release of additional land or changes of use/development within the port/harbour areas. Consequently, the SMP2 is unlikely to act in combination and exacerbate any potentially significant effects already identified. If the SMP2 works are timed to avoid the bird breeding and overwintering seasons, as outlined in the previous section, there will be no in-combination impacts on qualifying bird species. **No likely significant effects in combination on qualifying birds.**

Relevant European Sites to the SDP and SMP2	Qualifying interest features	Consideration of Likely Significant Effects: in-combination and cumulative effects
Montrose Basin SPA and Ramsar site	Waterfowl assemblage – non-breeding, overwintering migratory species, Ramsar birds including internationally important assemblages of waterfowl	None of the development proposals in the SDP are likely to result in the loss of intertidal habitat (nor associated impacts on birds) due to the dispersed nature of proposed SPD development around the estuaries, and the protection given to undeveloped land through policy on the undeveloped coast and green belts. Additionally, SPD development proposals do not require the release of additional land or changes of use/development within the port/harbour areas. Consequently, the SMP2 is unlikely to act in combination and exacerbate any potentially significant effects already identified. However, the loss of undesignated agricultural land that may potentially support SPA qualifying birds (due to MR at Montrose Basin) may have in-combination impacts with development proposals in the SPD, which have been identified as having the potential to result in the loss of agricultural land providing feeding grounds for SPA or Ramsar birds. The loss of agricultural land from the Tayplan was not considered to adversely affect the integrity of Montrose Basin SPA and Ramsar site following the implementation of mitigation but it was identified in the Tayplan that further assessment would be required at the Local Development Plan and planning application stages. The development proposals in the Tayplan will therefore require further consideration during the implementation of the SMP at project level. **Potential for significant in combination effects on qualifying birds.**
South River Esk SAC	Freshwater pearl mussel and Atlantic salmon	If the SMP2 works are timed to avoid the migratory salmon run, there will be no in-combination impacts on the freshwater pearl mussel and Atlantic salmon. **No likely significant effects in combination on freshwater pearl mussels of Atlantic salmon.**
Moray Firth SAC	Sandbanks, which are slightly covered by seawater all the time and bottlenose dolphin	Given that the screening exercise identified no pathways for the SMP2 to impact on the sandbanks due to the distance and presence of headlands, no in-combination impacts are anticipated on the sandbanks. As the SMP2 policies will not involve any underwater noise or vibration due to the works being progressed on land, there will be no in-combination impacts on bottlenose dolphins. **No likely significant effects in combination on sandbanks or bottlenose dolphins.**
Isle of May SAC	Reefs and grey seal	Given that the screening exercise identified no pathways for the SMP2 to impact on the reefs due to their distance, no in-combination impacts are anticipated on the reefs. As the SMP2 policies will not involve any underwater noise or vibration due to the works being progressed on land, there will be no in-combination noise impacts on grey seals. If the SMP2 works are timed to avoid the seal breeding and pupping season, there will be no in-combination impacts on the haul out sites of grey seal. **No likely significant effects in combination on reefs or bottlenose dolphins.**

At this strategic stage, it is anticipated that the majority of the SMP2 proposals (with the exception of managed realignment at Montrose Basin) can be undertaken without having potential in-combination significant impacts with the TAYplan SDP.

At Montrose Basin, there are possible in-combination effects from the loss of non-designated habitat used by SPA/Ramsar birds. Due to the high level nature of the SMP2, further assessment of the value of the undesignated land to SPA/Ramsar birds and the potential combined effects of managed realignment at Montrose Basin and the SDP will be undertaken at project level when the design/nature of this option has been confirmed and when more details of the development sites in the SDP are available.

4.5.1.2 TAYplan Proposed Strategic Development Plan 2016-2036 (May 2015)

The SPD assessed above is being reviewed and a new proposed plan was submitted to Scottish Ministers on 11 May 2015. The comments period closed on 3rd July 2015 and TAYplan is now considering all of the comments received. These will be considered by the TAYplan Joint Committee at the end of 2015/start of 2016.

An HRA will be completed as part of this process, but it has not currently been published. However, it is anticipated that similar conclusions will be made with those presented in section 4.5.2.1 above in the 2012 SDP, including those of Likely Significant in-combination effects for Montrose Basin SPA and Ramsar site, which continues to be assigned as an area of major transformation as employment land for port-related uses.

At this strategic stage, it is anticipated that the majority of the SMP2 proposals (with the exception of managed realignment at Montrose Basin) can be undertaken without having in-combination significant impacts with the TAYplan SDP.

At Montrose Basin, there are possible in-combination effects of the loss of non-designated habitat used by SPA/Ramsar birds. Due to the high level nature of the SMP2, further assessment of the value of the undesignated land to SPA/Ramsar birds and the potential combined effects of managed realignment at Montrose Basin and the SDP will be undertaken at project level when the design/nature of this option to be implemented has been confirmed and when an HRA and details of the development sites in the SDP are available.

4.5.1.3 Angus Local Plan Review (2009)

Angus Council has assessed the potential impact of the Local Plan Review on Natura 2000 and Ramsar sites in the context of the principal and secondary safeguarding policies and specific development policies. Angus Council is satisfied that, with the exception of Policy B13: Brechin Flood Prevention Scheme, the adoption and implementation of the Angus Local Plan Review will not adversely affect the integrity of any of the European designated sites within Angus.

Policy B13: Brechin Flood Prevention Scheme was identified in the Local Plan Review as having a likely significant effect on the natural habitats and the habitats of species, as well as disturbance of species for which the River South Esk SAC has been designated.

Table 4.11 assesses the in-combination impacts of the Angus Local Plan Review with the SMP2 on the relevant Natura sites.

Table 4.11: Assessment of In-combination Impacts of Angus Local Plan Review with SMP2

Relevant European Sites to the SDP and SMP2	Qualifying interest features	Potential for in-combination or cumulative impacts
South River Esk SAC	Freshwater pearl mussel and Atlantic salmon	As the SMP2 works will not affect drainage issues associated with the Brechin scheme and the works will be timed to avoid the migratory salmon run, there will be no in-combination impacts on the freshwater pearl mussel and Atlantic salmon. No likely significant effects in combination on freshwater pearl mussels or Atlantic salmon.

The SMP policies in Montrose Basin West are not anticipated to have any in-combination significant impacts with the Angus Local Plan on the South River Esk SAC.

4.5.1.4 Proposed Angus Local Development Plan (February 2014)

The proposed Angus Local Development Plan (LDP) sets out policies to guide future development across Angus up to 2026. A draft HRA, completed in February 2015, identified that through implementation of a series of mitigation measures in combination with its biodiversity protection policies, the development proposals will not adversely affect the Firth of Tay and Eden Estuary SAC, SPA and Ramsar site, Barry Links SAC, South River Esk SAC, Montrose Basin SPA, Moray Firth SAC and Isle of May SAC.

Table 4.14 assesses the in-combination impacts of the Angus LDP with the SMP2 on the relevant Natura sites.

Table 4.14: Assessment of In-combination Impacts of Angus LDP with SMP2

Relevant European Sites to the Angus LDP and SMP2	Qualifying interest features	Potential for in-combination or cumulative impacts
Montrose Basin SPA and Ramsar site	Waterfowl assemblage – non-breeding, overwintering migratory species, Ramsar birds including internationally important assemblages of waterfowl	None of the development proposals in the Angus LDP are likely to result in the loss of intertidal habitat (or associated impacts on birds) due to the protection given by the policy on coastal planning (Policy PV16), Montrose Port (Policy M6), Sleepyhillock Cemetery Extension (Policy M10), development priorities (Policy DS1) and biodiversity (Policy PV4). However, the loss of undesignated agricultural land that may potentially support SPA qualifying birds or disturbance to birds during construction may have in-combination impacts with development proposals in the LPD that may result in additive impacts with those from the SMP policy of managed realignment at part of Montrose Basin. The development proposals in the Angus LDP will therefore require further consideration during the implementation of the SMP at project level. **Potential for likely significant in combination effects on qualifying birds.**
South River Esk SAC	Freshwater pearl mussel and Atlantic salmon	Montrose Port proposals in the Angus LDP are not likely to result in the loss of qualifying habitats and species during construction and operation due to Montrose Port Policy M6. Also, the SMP2 works will be timed to avoid the migratory salmon run. Therefore, there will be no in-combination impacts on the freshwater pearl mussel and Atlantic salmon, with proposed development at Montrose Port. **No likely significant effects in combination on freshwater pearl mussels or Atlantic salmon.**

Relevant European Sites to the Angus LDP and SMP2	Qualifying interest features	Potential for in-combination or cumulative impacts
Firth of Tay and Eden Estuary SAC	Estuaries, mudflats and sandflats not covered by seawater at low tide, sandbanks, which are slightly covered by seawater all the time and harbour seal.	None of the development proposals in the Angus LDP are likely to result in the loss of intertidal habitat (or associated impacts on birds) due to the protection given by the policy on coastal planning (Policy PV16), development priorities (Policy DS1) and biodiversity (Policies PV4 and PV5). No in-combination impacts relating to the loss of qualifying habitat are therefore envisaged. As the SMP2 works will be timed to avoid the seal breeding and pupping season, there will be no in-combination noise impacts with the identified Angus LDP proposed activities (including piling) on harbour seals, if any are present in the working area. **No likely significant effects in combination on qualifying intertidal/estuarine habitats or harbour seal.**
Firth of Tay and Eden Estuary SPA and Ramsar site	Annex 1 breeding birds, Annex 1 overwintering birds, overwintering migratory species and internationally important assemblages of birds	None of the development proposals in the LDP will encroach on intertidal habitat and there will therefore be no in-combination impacts relating to the loss of designated habitat impacting on SPA and Ramsar site birds due the policy on coastal planning (Policy PV16), development priorities (Policy DS1) and biodiversity (Policy PV4). As the SMP2 works will be timed to avoid the bird breeding and overwintering seasons, there will be no in-combination impacts on qualifying bird species. **No likely significant effects in combination on qualifying birds.**
Outer Firth of Forth and St Andrews Bay pSPA	Annex 1 birds, Populations of European importance of migratory bird species	None of the development proposals in the LDP will encroach on intertidal habitat and there will therefore be no in-combination impacts relating to the loss of designated habitat impacting on pSPA site birds due the policy on coastal planning (Policy PV16), development priorities (Policy DS1) and biodiversity (Policy PV4). As the SMP2 works will be timed to avoid the bird breeding and overwintering seasons, there will be no in-combination impacts on qualifying bird species. **No likely significant effects in combination on qualifying birds.**
Moray Firth SAC	Sandbanks, which are slightly covered by seawater all the time and bottlenose dolphin	Montrose Port proposals are not likely to impact on bottlenose dolphin migrating from Moray Firth due to protection by Montrose Port Policy M6 and protected species policy PV5. Also, the SMP2 policies will not involve underwater noise or vibration issues due to the works being progressed on land. Therefore, there will be no in-combination impacts on bottlenose dolphins with any noisy activities generated by the Angus LDP. **No likely significant effects in combination on sandbanks or bottlenose dolphins.**

Relevant European Sites to the Angus LDP and SMP2	Qualifying interest features	Potential for in-combination or cumulative impacts
Isle of May SAC	Reefs and grey seal	Given that the screening exercise identified no pathways for the SMP2 to impact on the reefs due to their distance, no in-combination impacts are anticipated on the reefs. The SMP2 policies will not involve any underwater noise or vibration impacts on grey seals. As the SMP2 works will be timed to avoid the seal breeding and pupping season, there will be no in-combination noise or visual disturbance impacts on the haul out sites of grey seal. Also, seals will be protected by the LPD's protected species policy PV5. Therefore there is no potential for in-combination impacts with the developments proposed as part of the Angus LDP. **No likely significant effects in combination on reefs or grey seal.**

At this strategic stage, it is anticipated that the majority of the SMP2 proposals (with the exception of managed realignment at Montrose Basin) can be undertaken without having in-combination significant impacts with the Angus LDP.

At Montrose Basin, there are possible in-combination effects of the loss of non-designated habitat used by SPA/Ramsar birds. Due to the high level nature of the SMP2, further assessment of the value of the undesignated land to SPA/Ramsar birds and the potential combined effects of managed realignment at Montrose Basin and the LDP will be undertaken at project level when the design/nature of this option has been confirmed and when more details of the development sites in the Angus LDP are available.

4.5.1.5 Dundee Local Development Plan (LDP) (adopted December 2013)

The Dundee City Council produced a HRA record document (October 2013) of the Dundee LDP. It considers the potential impacts of policies on various European sites, including the Firth of Tay and Eden Estuary SAC and SPA, Barry Links SAC, Moray Firth SAC and the Isle of May SAC, which are assessed within this SMP2 HRA.

Potentially significant impacts on these sites were identified as a result of four policies, namely on economic development areas, tourism and leisure developments, visitor accommodation and biomass energy generating plant. The Council concluded that subject to the mitigation identified in the appropriate assessment and adding caveats to the wording, the policies and proposals contained in the Dundee LDP will not adversely affect the integrity of the European sites identified in the HRA.

Table 4.12 assesses the in-combination impacts of the Dundee LDP with the SMP2 on the relevant Natura sites.

Table 4.12: Assessment of In-combination Impacts of Dundee LDP with SMP2

Relevant European Sites to the SDP and SMP2	Qualifying interest features	Potential for in-combination or cumulative impacts
Barry Links SAC	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*), embryonic shifting dunes, fixed coastal dunes with herbaceous vegetation ('grey dunes'), humid dune slacks, shifting dunes along the shoreline with *Ammophilia arenaria*.	None of the development proposals in the LDP are likely to result in the loss of intertidal habitat and therefore the SMP2 is unlikely to act in combination and exacerbate any potentially significant effects already identified. **No likely significant effects in combination on qualifying dune habitats.**
Firth of Tay and Eden Estuary SAC	Estuaries, mudflats and sandflats not covered by seawater at low tide, sandbanks, which are slightly covered by seawater all the time and harbour seal.	None of the development proposals in the LDP has been identified as encroaching on the SAC (although Policy 30 directs biomass energy generating plants adjacent to the SAC). No in-combination impacts relating to the loss of qualifying habitat are therefore envisaged. As the SMP2 works will be timed to avoid the seal breeding and pupping season, there will be no in-combination noise impacts with the identified LDP proposed activities (including piling) on harbour seals, if any are present in the working area. **No likely significant effects in combination on qualifying intertidal/estuarine habitats or harbour seal.**
Firth of Tay and Eden Estuary SPA and Ramsar site	Annex 1 breeding birds, Annex 1 overwintering birds, overwintering migratory species and internationally important assemblages of birds	None of the development proposals in the LDP will encroach on intertidal habitat and there will therefore be no in-combination impacts relating to the loss of designated habitat impacting on SPA and Ramsar site birds. As the SMP2 works will be timed to avoid the bird breeding and overwintering seasons, there will be no in-combination impacts on qualifying bird species. **No likely significant effects in combination on qualifying birds.**
Outer Firth of Forth and St Andrews Bay pSPA	Annex 1 birds, Populations of European importance of migratory bird species	None of the development proposals in the LDP will encroach on intertidal habitat and there will therefore be no in-combination impacts relating to the loss of designated habitat impacting on pSPA site birds. As the SMP2 works will be timed to avoid the bird breeding and overwintering seasons, there will be no in-combination impacts on qualifying bird species. **No likely significant effects in combination on qualifying birds.**
Isle of May SAC	Reefs and grey seal	Given that the screening exercise identified no pathways for the SMP2 to impact on the reefs due to their distance, no in-combination impacts are anticipated on the reefs. The SMP2 policies will not involve any underwater noise or vibration impacts on grey seals. As the SMP2 works will be timed to avoid the seal breeding and pupping season, there will be no in-combination noise or visual disturbance impacts on the haul out sites of grey seal, and no potential for in-combination impacts with the tourist and leisure developments proposed as part of the LDF. **No likely significant effects in combination on reefs or grey seal**

It is anticipated that the SMP2 proposals, which are located at a considerable distance from the LDF policies, can be undertaken without having in-combination significant impacts with the Dundee LDP. Due to the high level nature of the SMP2, further assessment of the combined effects of the SMP2 and the LDP will be undertaken at project level when the design/nature of a scheme have been confirmed.

4.5.1.6 Aberdeen Local Development Plan (ALDP) 2012 and Supplementary Guidance

Aberdeen City Council has produced a HRA (March 2012) of the ALDP, which considers impacts on European sites including the Moray Firth SAC, which is assessed within this SMP2 HRA. Potentially significant impacts on this site were identified as a result of various development policies in the ALDP. Of relevance to the SMP2 is the potential for significant impacts of the coastal planning policy NE7 of the Local Plan on the Moray Firth SAC.

Table 4.13 assesses the in-combination impacts of the ALDP with the SMP2 on the relevant Natura sites.

Table 4.13: Assessment of In-combination Impacts of ALDP with SMP2

Relevant European Sites to the SDP and SMP2	Qualifying interest features	Potential for in-combination or cumulative impacts
Moray Firth SAC	Sandbanks, which are slightly covered by seawater all the time and bottlenose dolphin	Given that the screening exercise identified no pathways for the SMP2 to impact on the sandbanks and the ALDP is not considered to have any effect on this qualifying habitat, no in-combination impacts are anticipated on the sandbanks. As the SMP2 policies will not involve any underwater noise or vibration due to the works being progressed on land, there will be no in-combination impacts on bottlenose dolphins with any noisy activities generated by the ALDP. **No likely significant effects in combination on sandbanks or bottlenose dolphins.**

There are unlikely to be any significant in-combination impacts with the ALDP and SMP2 policies.

4.5.1.7 Dundee Coastal Study 2011

The Dundee Coastal Study Stage 2 plan seeks to identify local flood alleviation and coastal erosion defence schemes along Dundee's 16.9km of coastal frontage. These have the potential for in-combination impacts on European sites; including the Firth of Tay and Eden Estuary, Isle of May and Moray Firth, which are assessed within this SMP2 HRA.

As the HRA has not been developed for the Coastal Study yet, it will only be possible to fully assess the potential for the combined significant effects of the SMP2 and the Dundee Coastal Study at project level when the design/nature of options to be implemented has been confirmed and when an HRA of the Coastal Study is available.

4.5.1.8 Angus Core Paths Plan 2010

The SEA of the Core Path Plan concludes that a total of 26 paths run through or close to designated wildlife and geological sites. However, all of these paths are existing routes and no works are proposed that would adversely impact on the interests of the sites. The Core Path Plan does not identify any likely significant effects on any European sites.

Consequently, no in-combination significant effects with the SMP2 are anticipated.

4.5.1.9 Tayside Biodiversity Partnership – Tayside Biodiversity Action Plan (2nd Edition) Coastal & Marine Ecosystems Consultative Draft 2015-25

This local Biodiversity Action Plan (LBAP) for coastal and marine ecosystems cites the Firth of Tay and Eden Estuary SAC/SPA/ Ramsar site and Montrose Basin SPA/Ramsar amongst key biodiversity sites in the Tayside area. It promotes the sustainable development of the coastline through increased policy integration, including the Angus SMP2. It proposes projects such as monitoring and restoring Angus maritime plant populations, treating invasive species and enhancing butterfly habitats. The LBAP also proposes saltmarsh habitat enhancement (including at Montrose Basin) and sand dune system restoration.

The actions proposed by the LBAP are intended to protect and enhance the coastal and marine ecosystems, which includes the Natura 2000 sites that are subject to this HRA.

Consequently, no in-combination significant effects with the SMP2 are anticipated.

4.5.1.10 Tayside Geodiversity Action Plan 2015

Previously included in the first edition of the Tayside Biodiversity Action Plan, the Tayside Geological Group produced the Tayside Geodiversity Action Plan in 2015. The objectives of the plan are to identify, designate, protect and monitor important geological and geomorphological sites and landforms and to raise awareness of local geodiversity. The plan promotes the enhancement of coastal process to reduce flood risk, and the protection of local Geodiversity Sites.

The actions proposed by the Tayside Geodiversity Action Plan are intended to protect and enhance the coastal processes of the Natura 2000 sites that are subject to this HRA.

Consequently, no in-combination significant effects with the SMP2 are anticipated.

4.5.1.11 Angus Council Climate Change Strategy and Action Plan 2012 – 2016

Angus Council developed the Climate Change Strategy to take into account the public bodies' duties imposed under the Climate Change (Scotland) Act 2009, including reducing greenhouse gas emissions, and sets out actions to achieve sustainability objectives. The most relevant objectives were on: the stewardship of biodiversity, natural resources and the promotion of the unique natural environment of Angus; the awareness of fluvial and coastal flood risk prevention measures; and to guide development and changes in land use in a sustainable manner.

The actions proposed by the Angus Council Climate Change Strategy are intended to promote sustainable development, adaption to climate change and stewardship of the natural environment including Natura 2000 sites that are subject to this HRA.

Consequently, no in-combination significant effects with the SMP2 are anticipated.

4.5.1.12 Tay Estuary Forum (TEF) Management Plan 2009-2014

The over-arching aim of the TEF Management Plan is to secure and promote for future generations the wise and sustainable use of the Tay Estuary and adjacent coastal waters. This includes the promotion of the conservation of the wildlife and habitats, increase knowledge on coastal processes and advocate the improvement of environmental quality in the coastal zone. All of these would help to protect the Natura 2000 sites that are subject to this HRA.

Consequently, no in-combination significant effects with the SMP2 are anticipated.

4.5.1.13 Offshore renewables in Scotland

The wave, wind and tidal energy sector is growing rapidly in Scotland and future plans for offshore renewables are likely to exert pressures on some of the European sites considered within this HRA. For example, offshore wind projects that have been already consented nearby are Inch Cape (15km off Angus coast), Firth of Forth Phase 1 (27km off Tayside), and

Neart na Gaoithe (15km off the Fife coast)[7]. According to the Scottish Government marine licensing website[8], no marine renewable energy projects are proposed in the SMP2 area. However, the Kincardine Offshore Windfarm (which is currently at the pre-application stage) is proposed 15 km from the Kincardineshire coast south-east of Aberdeen, which is over 30km from the Angus SMP2 coastline[9]. The Kincardine Offshore Windfarm environmental impact assessment and HRA have not been published, but the scoping report does include the Firth of Tay and Eden Estuary and Montrose Basin in the bird interests being considered. Although cumulative impacts on birds are unlikely due to the distance from the SMP2 proposed policies and the small scale of the proposal, the Kincardine Offshore Windfarm HRA will need to consider the potential in-combination effects in its environmental assessment once the project details are defined.

No in-combination significant effects with the SMP2 are anticipated based on understanding of current proposals. However, future plans and proposals for offshore renewables will require consideration during the implementation of the SMP2 to ensure there are no cumulative or in-combination impacts on any European sites.

4.5.2 In combination assessment conclusion

Following a review of the above strategies, plans and projects, the in-combination assessment has not been able to conclude No Likely Significant Effects, due to the potential combined impacts on birds using agricultural land from the SMP2 policy for managed realignment and the TAYplan's SDP (2012) and proposed SDP (2015), and the proposed Angus Local Development Plan (2014).

4.6 Summary of HRA Screening (Stage 7)

The HRA Screening Assessment has concluded that there is potential for the Angus SMP2 to have **Likely Significant Effects** on the integrity of the following:

- Barry Links SAC (alone) – holding the line in MU8/1 has the potential to constrain natural processes of the sand dune system.
- Firth of Tay and Eden Estuary SAC (alone) – holding the line in MU8/1, 9/1, 9/2, 9/3 and 9/5 has the potential to cause coastal squeeze of the intertidal habitat, and potential for habitat loss from upgrading works in MU 9/2 and 9/3.
- Firth of Tay and Eden Estuary SPA and Ramsar site (alone) - holding the line in MU8/1, 9/1, 9/2, 9/3 and 9/5 has the potential to cause coastal squeeze of the intertidal habitat, and also potential for habitat loss from upgrading works in MU 9/2 and 9/3, which may be used by SPA and Ramsar birds used for feeding, nesting and breeding.

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[7] http://www.renewableuk.com/en/renewable-energy/wind-energy/uk-wind-energy-database/index.cfm/maplarge/1 last accessed 01.02.16

[8] http://www.gov.scot/Topics/marine/Licensing/marine/scoping last accessed 01.02.16

[9] Atkins Ltd (2014). Kincardine Offshore Windfarm Environmental Scoping Report, April 2014

- Montrose Basin SPA and Ramsar site (alone and in-combination with Tayplan's SDP 2012, Proposed SDP (2015) and Proposed Angus LDP (2014)) - holding the line in MU 2/2a, 2/2b, 2/3a, 2/3b, 2/4a, 2/4c and 2/6, has the potential to cause coastal squeeze of the intertidal habitat and potential for habitat loss from upgrading works, which may be used by the birds for feeding and roosting.

  In addition, managed realignment in MU2/4b has the potential to affect the qualifying bird species as a result of the loss of agricultural land due to saline inundation, and intertidal habitat due to scouring or reduced water quality during the construction works. This potentially significant impact may have in-combination impacts if agricultural land is lost as part of development proposals within the TAYplan's SDP (2012) and proposed SDP (2015) and Proposed Angus LDP (2014).

- Moray Firth SAC – no likely significant effects.
- Isle of May SAC – no likely significant effects.
- River South Esk SAC – no likely significant effects.
- Outer Firth of Forth and St Andrews Bay pSPA (alone) - holding the line in MU6/1(a), 6/1(b), 6/2, 6/3, 6/4(a), MU7/1, 7/2, MU8/1, MU9/1, 9/2, 9/3 and 9/5 has the potential to cause coastal squeeze of the intertidal habitat, which may be used by pSPA birds used for feeding, nesting and breeding.

Therefore, an Appropriate Assessment of the anticipated impacts of the plan is required (Stage 8).

5 Appropriate Assessment

5.1 Assessing 'adverse effect' on site integrity (Stage 8)

Table 5.1 assesses whether the policies identified as having a likely significant effect in Chapter 4, are likely to have an adverse effect on the integrity of any European sites. The integrity of a site is 'the coherence of its ecological structure and function, across its whole area, which enables it to sustain the habitat, complex of habitats and/or the levels of population of the species for which it is classified' (SNH 2010).

Table 5.1: Assessing Adverse Effect on the Integrity of the European sites

NOTE: **Maintenance of existing defences:** is likely to take the form of inspections, monitoring and repairs on a like for like basis, beach stabilisation and dune management. Further details will be developed in agreement with SNH at scheme level. **Upgrading of existing defences:** is likely to involve the replacement (or partial replacement) of the existing defences, taking into consideration increasing forces acting on them over time (as a result of climate change etc). It is not possible to say at this high level SMP stage whether it would be on a like for like basis; this would be determined through optioneering and consultation with SNH at scheme level.

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Barry Links SAC						
MU8/1 Barry Sands East - hold the line - maintenance and limited intervention	Loss of qualifying habitats through: a) constraint of natural dynamism of the dunes from the presence of fixed defences in front of the dunes	Atlantic decalcified fixed dunes (*Calluno-Ulicetea*), embryonic shifting dunes, fixed coastal dunes with herbaceous vegetation ('grey dunes'), humid dune slacks, shifting dunes along the shoreline with *Ammophilia arenaria.* All are unfavourable recovering (except humid dune slacks and dunes with herbaceous vegetation ('grey dunes'), which are unfavourable no change).	To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features. To ensure for the qualifying habitats that the following are maintained in the long term: • *Extent of the habitat on site* • *Distribution of the habitat within site* • *Structure and function of the habitat* • *Processes supporting the habitat* • *Distribution of typical species of the habitat* • *Viability of typical species as components of the habitat* • *No significant disturbance of typical species of the habitat* • *No significant disturbance of the species* The current condition of the dune system is understood to be a result of undergrazing, scrub encroachment and natural pressures on the dune features (e.g. erosion in some areas and the changing courses of burns, which are considered an integral component of the dynamic sand dune system).	The preferred option does not compromise the conservation objectives of the site. The SMP2 hold the line policy involving maintenance and limited intervention is not proposing any change in management policy along this frontage and is considered to be compatible with the site's conservation objectives in that it will not affect the current processes affecting the extent or distribution of the designated habitat, nor affect the structure and function of the habitat over the duration of the SMP2. As the existing habitats are generally recovering and there will be no change in the management policy of the frontage, the proposed SMP2 policy is not anticipated to affect the ecological structure and functioning of the site features or the ability of the site to meet the conservation objectives. The policy will not contribute to the current issues that are known to be affecting site condition. Due to the sensitivity of the coastline to changes in the configuration of sand banks at the mouth of the Tay and the channel that runs parallel to the coast in this location, it is difficult to identify any clear erosion / accretion trend along this frontage that is affecting the favourable condition of the qualifying interest features. Assuming that current conditions continue, present patterns of erosion and accretion are expected to continue, with net sediment movement towards Monifieth in the west.	Strategic level monitoring will be undertaken to better understand any geomorphological changes along the coastline, which will include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Firth of Tay and Eden Estuary SAC						
MU8/1 – Barry Sands East - maintenance and limited intervention of defences	Loss of qualifying habitats through: b) coastal squeeze, due to rising sea levels, against fixed defences c)	Estuaries Intertidal mudflats and sandflats Subtidal sandbanks The qualifying interest features are currently in favourable condition – maintained.	To avoid deterioration of the qualifying habitats, thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features. To ensure for the qualifying habitats that the following are maintained in the long term: • *Extent of the habitat on site* • *Distribution of the habitat within site* • *Structure and function of the habitat* • *Processes supporting the habitat* • *Distribution of typical species of the habitat* • *Viability of typical species as components of the habitat* • *No significant disturbance of typical species of the habitat*	The policy will be implemented in a manner that avoids adverse effects on the SAC, through appropriate scheme design. No reduction in the extent and distribution of the intertidal/estuarine habitats are predicted over the duration of the SMP2 as the defence structures are already in place and are not currently impacting on the existing favourable condition of the interest features. The SMP2 hold the line policy is not proposing any maintenance that differ to the existing management policy of the frontage. The policy is not envisaged to affect the current processes supporting the intertidal habitat, nor affect the structure and function of the habitat. Due to the sensitivity of the coastline at Barry Sands East to changes in the configuration of sand banks at the mouth of the Tay and the channel that runs parallel to the coast in this location, there are no clear erosion / accretion trend along this frontage and therefore no known impacts on the intertidal habitats have been identified. Assuming that current conditions continue at Barry Sands East, present patterns of erosion and accretion are expected to continue, with net sediment movement towards Monifieth in the west.	Strategic level monitoring will be undertaken to better understand any geomorphological changes along the coastline, which will inform any scheme level Appropriate Assessments. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Firth of Tay and Eden Estuary SAC						
MU9/1 - maintenance of defences & limited intervention. MU9/2 - maintenance & upgrading of defences to address overtopping issues & restoring / stabilising the upper beach MU9/3 - maintenance & upgrading the defences MU9/5 - maintenance of defences, limited intervention & dune management	Loss of qualifying habitats through d) coastal squeeze, due to rising sea levels, against fixed defences (all these units) e) direct loss in footprint of defence works (MU9/2 and MU9/3)	Estuaries Intertidal mudflats and sandflats Subtidal sandbanks The qualifying interest features are currently in favourable condition – maintained.	To avoid deterioration of the qualifying habitats thus ensuring that the integrity of the site is maintained and the site makes an appropriate contribution to achieving favourable conservation status for each of the qualifying features. To ensure for the qualifying habitats that the following are maintained in the long term: • *Extent of the habitat on site* • *Distribution of the habitat within site* • *Structure and function of the habitat* • *Processes supporting the habitat* • *Distribution of typical species of the habitat* • *Viability of typical species as components of the habitat* • *No significant disturbance of typical species of the habitat*	The SMP2 hold the line policy involving maintenance or upgrading works is not proposing any change in management policy along this frontage. It is not envisaged to affect the current processes supporting the intertidal habitat, nor affect the structure and function of the habitat as the defence structures already in place and are not known to be impacting on the existing favourable condition of the interest features. As the site is currently accreting (demonstrated by buried defences in 9/1), no reduction in the extent and distribution of the intertidal habitats are predicted over the duration of the SMP2. Erosion and accretion patterns along the Monifieth and Broughty Ferry frontages are highly dependent on the movement and depth of channels and the configuration of bank systems at the mouth of the Tay Estuary and over the lower foreshore within Monifieth Bay. These erosion and accretion patterns fluctuate considerably over short durations. Assuming that current conditions continue, present patterns of erosion and accretion are expected to continue. If beach/dune erosion becomes an issue at any point in the future, beach/dune management measures would help maintain the integrity and function of the beach/dunes as a natural flood defence.	The SMP2 policy will be implemented to avoid adverse effects on the SAC through appropriate scheme design. A more detailed scheme level HRA will be undertaken in consultation with SNH, which will more precisely prescribe the potential effects of the project and project level mitigation measures, when specific details of the scale and nature of the maintenance and upgrading works are known. The scheme level HRA should conclude 'no adverse effects'. Strategic level monitoring will also be undertaken to better understand any geomorphological changes along the coastline, which will inform a scheme level Appropriate Assessment. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Firth of Tay and Eden Estuary SPA and Ramsar site						
MU8/1 – maintenance and limited intervention of defences	Loss of habitat, used by qualifying birds for nesting and feeding, through f) coastal squeeze, due to rising sea levels, against fixed defences	**Annex 1 Breeding Birds** Little tern (*Sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar tailed god-wit *Limosa lapponica* **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser*	To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	The SMP2 hold the line policy is not proposing any change in management policy along this frontage. It is not envisaged to affect the structure, function and supporting processes of intertidal habitat, supporting the internationally designated birds as the existing defence structures are not currently impacting on the existing favourable condition of the supporting intertidal habitat, and therefore no adverse effects on the population or distribution of the SPA (and Ramsar) bird species are anticipated over the duration of the SMP2. Due to the sensitivity of the coastline at Barry Sands East to changes in the configuration of sand banks at the mouth of the Tay and the channel that runs parallel to the coast in this location, there are no clear erosion / accretion trend along this frontage and no known impacts on supporting habitats have been identified. It is assumed that current conditions continue at Barry Sands East,	Strategic level monitoring will be undertaken to better understand any geomorphological changes along the coastline. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Firth of Tay and Eden Estuary SPA and Ramsar site						
		brachyrhynchus) and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds** **Ramsar birds** including internationally important assemblages of waterfowl		present patterns of erosion and accretion are expected to continue, with net sediment movement towards Monifieth in the west. Consequently, no adverse impacts are envisaged on the feeding, breeding, roosting or nesting ability of qualifying bird species.		

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Firth of Tay and Eden Estuary SPA and Ramsar site						
MU 9/1 - maintenance of defences & limited intervention. MU9/2 - maintenance & upgrading of defences & restoring / stabilising the upper beach MU9/3 - maintenance & upgrading the defences MU9/5 - maintenance of defences, limited intervention & dune management	Loss of habitat, used by qualifying birds for nesting and feeding, through g) coastal squeeze, due to rising sea levels, against fixed defences (all these management units) h) direct loss in footprint of defence works (MU 9/2 and 9/3)	**Annex 1 Breeding Birds** Little tern (*sterna albifrons)* **Annex 1 Overwintering non-breeding birds** Bar tailed god-wit *Limosa lapponica* **Overwintering migratory species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus)* and Redshank (*Tringa tetanus)*. **Internationally important assemblages of SPA birds** **Ramsar birds** including internationally important assemblages of waterfowl	To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	The SMP2 hold the line policy is not proposing any change in management policy along this frontage. It is therefore not envisaged to affect the structure, function and supporting processes of intertidal habitat, supporting the internationally designated birds as the existing defence structures are not currently impacting on the distribution, extent, structure, and function of the supporting intertidal habitats, which are currently in favourable condition. Consequently, no adverse effects on the population or distribution of the SPA (and Ramsar) bird species are anticipated over the duration of the SMP2. The policy will not contribute to the current issues that are affecting site condition. Erosion and accretion patterns along the Monifieth and Broughty Ferry frontages are highly dependent on the movement and depth of channels and the configuration of bank systems at the mouth of the Tay Estuary and over the lower foreshore within Monifieth Bay. Due to the sensitivity of the coastline to these changes, there are no clear erosion / accretion trends along this frontage, and no known impacts on supporting habitats have been identified. Assuming that current conditions continue, present patterns of erosion and accretion are expected to continue. If beach/dune erosion becomes an issue, dune management measures would help maintain the integrity and function of the beach/dunes as a natural flood defence.	The SMP2 policy will be implemented to avoid adverse effects on the SPA and Ramsar site through appropriate mitigation, including: - little tern nesting areas and suitable/sensitive habitat used by overwintering birds will be identified and avoided - timing the works to avoid periods of key bird usage in the identified locations A more detailed scheme level HRA will be undertaken in consultation with SNH, which will more precisely prescribe the potential effects of the project and project level mitigation measures, when specific details of the scale and nature of any upgrading works are known. The scheme level HRA should conclude 'no adverse effects'. Strategic level monitoring will also be undertaken to better understand any geomorphological changes along the coastline, which will inform a scheme level Appropriate Assessment. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity; long term, short term. Yes, No or uncertain?
Montrose Basin SPA and Ramsar site						
MU 2/2a, 2/2b, 2/3a, 2/3b, 2/4a, 2/4c and 2/6 maintenance & upgrading the existing defences	Loss of habitat, used by qualifying birds for feeding and roosting, through i) coastal squeeze, due to rising sea levels, against fixed defences j) direct loss in footprint of defence works	**Waterfowl assemblage** non-breeding **Overwintering species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus),* Knot (*Calidris canutus)* and Redshank (*Tringa tetanus)*. **Ramsar birds** including internationally important assemblages of waterfowl	To avoid deterioration of the habitats of qualifying species, or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	The SMP2 hold the line policy is not proposing any change in management policy along this frontage. The existing defences are not known to be currently impacting on the distribution, extent, structure, and function of the supporting intertidal mudflats and sandflats, and SNH has confirmed that the existing defences are not considered to be a pressure affecting the condition of the SPA and Ramsar site. The policy will not contribute to the current issues that are affecting site condition. Assuming present conditions continue, Montrose Basin will continue to gradually silt up. This, combined with the sheltering effect of the Basin, suggests that the intertidal areas supporting qualifying bird species, will remain relatively stable, albeit assuming that the low water channels do not move significantly within this period. Assuming a continued supply of sediment from the River South Esk and Montrose Bay, saltmarsh accretion / stability is expected within the Basin, which is likely to be beneficial to the designated site. Consequently, no adverse impacts are envisaged on the SPA/Ramsar supporting habitats and therefore there will be no impacts on the availability of feeding and roosting sites in Montrose Basin, and thus on the population and distribution of the qualifying bird species.	The SMP2 policy will be implemented to avoid adverse effects on the SPA and Ramsar site through appropriate scheme design through appropriate mitigation, including: - suitable/sensitive habitat used by overwintering birds and qualifying species will be identified at the detailed design stage of the works and avoided - timing the works to avoid periods of key bird usage in the identified locations A more detailed scheme level HRA will be undertaken in consultation with SNH, which will more precisely prescribe the potential effects of the project and project level mitigation measures, when specific details of the scale and nature of the maintenance and upgrading works are known. The scheme level HRA should conclude 'no adverse effects'. Strategic level monitoring will also be undertaken to better understand any geomorphological changes along the coastline, which will inform a scheme level Appropriate Assessment. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity; long term, short term. Yes, No or uncertain?
Montrose Basin SPA and Ramsar site						
MU 2/4 b (west of Tayock to Old Montrose) Managed Realignment in short-term	Loss of non-designated agricultural land (subject to alignment of defences) to saline flooding, potentially used by qualifying birds for feeding and roosting, due to breaching, RTE or removal of defences.	**Waterfowl assemblage** non-breeding **Overwintering species** Greylag goose (*Anser anser)*, Pink-footed goose (*Anser brachyrhynchus),* Knot (*Calidris canutus)* and Redshank (*Tringa tetanus)*. **Ramsar birds** including internationally important assemblages of waterfowl	To avoid deterioration of the habitats of qualifying species, or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and to ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	The extent of a potential Managed Realignment has not been ascertained at this level but could result in the potential loss of between 10ha and 30ha of non-designated agricultural land. Although this is outside the boundary of the SPA and Ramsar site, it has the potential to result in the loss of feeding and nesting habitat by qualifying bird species, which will require further consideration at scheme level. The agricultural land identified in the draft SMP2 for managed realignment at this location is not known to support high tide roosts, and this would be confirmed at a project level. This policy on Managed Realignment at Montrose Basin has been modified following consultation with SNH to avoid direct loss of habitat within the Montrose Basin SPA/Ramsar, whilst still providing an opportunity to create intertidal habitat. [Noting the mobility of coastal/estuarine birds, the creation of new habitats as part of the proposed managed realignment could support roosting SPA birds in the future and connect any adjacent roosting sites, if present.]	Due to the high level nature of the SMP2, further assessment of the combined effects of managed realignment at Montrose Basin and the TAYplan's SDP, proposed SDP and Angus LDP will be undertaken at project level when the design/nature of this option has been confirmed and when more details of the development sites in the SDP/LDP are available. Further consideration will be given to the functionality and value of the terrestrial habitat, the likely change in habitat type (dependent on the likely frequency of flooding, water levels etc), and ability to support to feeding, nesting and roosting overwintering qualifying birds at scheme level. At scheme level, the SMP2 policy will be designed and implemented in consultation with SNH to ensure that the MR avoids the loss of habitat supporting qualifying birds. A more detailed scheme level HRA will be undertaken in consultation with SNH, which will more precisely prescribe the effects of the project and project level mitigation measures, when specific details of the scale and nature of the managed realignment is known. The scheme level HRA should conclude 'no adverse effects'.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity; long term, short term. Yes, No or uncertain?
Montrose Basin SPA and Ramsar site						
	Loss of intertidal habitat due to initial scouring or temporary reduction in water quality following breaching or removal of defences.		To avoid deterioration of the habitats of qualifying species, or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	Some intertidal habitat loss, which may reduce the availability of feeding or nesting birds in the basin may result from changes in coastal processes in the short-term, if defences are realigned or eventually breached. Realignment may result in changes in local geomorphological/estuarine processes (e.g. erosion and sediment movements). Such impacts could be beneficial or adverse with respect to the European Site interests and would be examined more closely at project level. Any habitat losses due to scouring from changes in coastal processes from the managed realignment would be temporary and short-term. Realignment will create new intertidal habitat that supports invertebrates, and are likely to be used by and support feeding and roosting birds in the medium and long-term have the potential to increase the available resource.	If any potentially adverse impacts arise as a result of the short-term realignment, these can be alleviated through appropriate design of managed realignment schemes at project level. Progressive implementation of managed realignment would reduce the potential effects of sudden changes to water flow and geomorphology. A more detailed scheme level HRA will be undertaken in consultation with SNH, which will prescribe project level mitigation measures, when specific details of the scale and nature of the managed realignment is known. The scheme level HRA should conclude 'no adverse effects'.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Outer Firth of Forth and St Andrew Bay Complex pSPA						
MU 6/1 (a), 6/1 (b), 6/2, 6/3, 6/4 (a) –maintenance and limited intervention of existing defences.	Loss of habitat, used by qualifying birds for nesting and feeding, through coastal squeeze, due to rising sea levels, against fixed defences	**Annex 1 Birds** Little gull (*Larus minutus*); common tern (*Sterna hirundo*); Arctic tern (*Sterna paradisaea*). **Populations of European importance of migratory bird species** Black-headed gull (*Chroicocephalus ridibundus*), common gull (*Larus canus*), herring gull (*Larus argentatus*), common eider (*Somateria mollissima mollissim*a), Long-tailed duck (*Clangula hyemalis*), common scoter (*Melanitta nigra*), Velvet scoter (*Melanitta fusca*), common goldeneye (*Bucephala clangula*), red-breasted merganser (*Mergus serrator*), northern gannet (*Morus bassanus*), Manx shearwater (*Puffinus puffinus*), European shag (*Phalacrocorax aristotelis*),	Objectives to be confirmed, assumed to be similar to Firth of Tay and Eden Estuary SPA: To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	The SMP2 hold the line policy is not proposing any change in management policy along this frontage. Although there are uncertainties, it is not envisaged to affect the structure, function and supporting processes of intertidal habitat supporting the internationally designated birds as the existing defence structures are not currently impacting on the condition of the supporting intertidal habitat, and therefore no adverse effects on the integrity of the population or distribution of the pSPA bird species are anticipated over the duration of the SMP2. Consequently, no adverse impacts are envisaged on the feeding, breeding, roosting or nesting ability of qualifying bird species.	Strategic level monitoring will be undertaken to better understand any geomorphological changes along the coastline and any uncertainties. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Outer Firth of Forth and St Andrew Bay Complex pSPA						
MU 7/1, 7/2 – maintenance and limited intervention of existing defences.	Loss of habitat, used by qualifying birds for nesting and feeding, through coastal squeeze, due to rising sea levels, against fixed defences	**Annex 1 Birds** Little gull (*Larus minutus*); common tern (*Sterna hirundo*); Arctic tern (*Sterna paradisaea*). **Populations of European importance of migratory bird species** Black-headed gull (*Chroicocephalus ridibundus*), common gull (*Larus canus*), herring gull (*Larus argentatus*), common eider (*Somateria mollissima mollissim*a), Long-tailed duck (*Clangula hyemalis*), common scoter (*Melanitta nigra*), Velvet scoter (*Melanitta fusca*), common goldeneye (*Bucephala clangula*), red-breasted merganser (*Mergus serrator*), northern gannet (*Morus bassanus*), Manx shearwater (*Puffinus puffinus*), European shag (*Phalacrocorax aristotelis*),	Objectives to be confirmed, assumed to be similar to Firth of Tay and Eden Estuary SPA: To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	The SMP2 hold the line policy is not proposing any change in management policy along this frontage. It is not envisaged to affect the structure, function and supporting processes of intertidal habitat supporting the internationally designated birds as the existing defence structures are not currently impacting on the condition of the supporting intertidal habitat, and therefore no adverse effects on the integrity of the population or distribution of the pSPA bird species are anticipated over the duration of the SMP2. Consequently, no adverse impacts are envisaged on the feeding, breeding, roosting or nesting ability of qualifying bird species.	Strategic level monitoring will be undertaken to better understand any geomorphological changes along the coastline. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No
MU8/1 – maintenance and limited intervention of defences	Loss of habitat, used by qualifying birds for nesting and feeding, through coastal squeeze, due to rising sea levels, against fixed defences	**Annex 1 Birds** Little gull (*Larus minutus*); common tern (*Sterna hirundo*); Arctic tern (*Sterna paradisaea*). **Populations of European importance of migratory bird species** Black-headed gull (*Chroicocephalus ridibundus*), common gull (*Larus canus*), herring gull (*Larus argentatus*), common eider (*Somateria mollissima mollissim*a), Long-tailed duck (*Clangula hyemalis*), common scoter (*Melanitta nigra*), Velvet scoter (*Melanitta fusca*), common goldeneye (*Bucephala clangula*), red-breasted merganser (*Mergus serrator*), northern gannet (*Morus bassanus*), Manx shearwater (*Puffinus puffinus*), European shag (*Phalacrocorax aristotelis*),	Objectives to be confirmed, assumed to be similar to Firth of Tay and Eden Estuary SPA: To avoid deterioration of the habitats of the qualifying species or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained; and To ensure for the qualifying species that the following are maintained in the long term: • *Population of the species as a viable component of the site* • *Distribution of the species within site* • *Distribution and extent of habitats supporting the species* • *Structure, function and supporting processes of habitats supporting the species* • *No significant disturbance of the species*	The SMP2 hold the line policy is not proposing any change in management policy along this frontage. It is not envisaged to affect the structure, function and supporting processes of intertidal habitat, supporting the internationally designated birds as the existing defence structures are not currently impacting on the existing condition of the supporting intertidal habitat, and therefore no adverse effects on the integrity of the population or distribution of the pSPA bird species are anticipated over the duration of the SMP2. Due to the sensitivity of the coastline at Barry Sands East to changes in the configuration of sand banks at the mouth of the Tay and the channel that runs parallel to the coast in this location, there are no clear erosion / accretion trend along this frontage and no known impacts on supporting habitats have been identified. It is assumed that current conditions continue at Barry Sands East, present patterns of erosion and accretion are expected to continue, with net sediment movement towards Monifieth in the west. Consequently, no adverse impacts are envisaged on the feeding, breeding, roosting or nesting ability of qualifying bird species.	Strategic level monitoring will be undertaken to better understand any geomorphological changes along the coastline. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required, when agreed trigger levels are reached/early warning system.	No
MU 9/1 - maintenance of defences & limited intervention MU9/2 - maintenance & upgrading of				The SMP2 hold the line policy is not proposing any change in management policy along this frontage. It is therefore not envisaged to affect the structure, function and supporting processes of intertidal habitat, supporting the internationally designated birds as the existing defence structures are not currently impacting on the distribution, extent, structure, and function of the supporting intertidal habitats, which are currently in favourable condition. Consequently, no adverse effects on the	Strategic level monitoring will be undertaken to better understand any geomorphological changes along the coastline, which will inform a scheme level Appropriate Assessment. The monitoring programme will be agreed with SNH, to include review and appropriate intervention if required,	No

SMP2 Policy	Likely Impacts	Qualifying interest Feature of European site	Conservation Objectives	Implications for qualifying interest of the European site in light of its conservation objectives	Mitigation Required?	Adverse effect on integrity?
Outer Firth of Forth and St Andrew Bay Complex pSPA						
defences & restoring / stabilising the upper beach MU9/3 - maintenance & upgrading the defences MU9/5 - maintenance of defences, limited intervention & dune management				population or distribution of the pSPA bird species are anticipated over the duration of the SMP2. The policy will not contribute to the current issues that are affecting site condition. Erosion and accretion patterns along the Monifieth and Broughty Ferry frontages are highly dependent on the movement and depth of channels and the configuration of bank systems at the mouth of the Tay Estuary and over the lower foreshore within Monifieth Bay. Due to the sensitivity of the coastline to these changes, there are no clear erosion / accretion trends along this frontage, and no known impacts on supporting habitats have been identified. Assuming that current conditions continue, present patterns of erosion and accretion are expected to continue.	when agreed trigger levels are reached/early warning system.	

6 Conclusions

This assessment has been carried out considering the likely effects of the implementation of policies identified in the draft Angus SMP2 alone and in-combination with other strategies, plans and projects, on site integrity of a number of European sites.

The potential for Likely Significant Effects has been identified on the following European sites:

- Barry Links SAC;
- Firth of Tay and Eden Estuary SAC, SPA and Ramsar site;
- Montrose Basin SPA and Ramsar site; and
- Outer Firth of Forth and St Andrews Bay Complex pSPA.

An Appropriate Assessment of these European sites was therefore undertaken, in view of their conservation objectives, under the provisions of the Habitat Regulations.

The proposed SMP2 Hold The Line policies would not give rise to adverse effects on the integrity of these sites from proposed maintenance and upgrading works causing direct impacts such as loss of qualifying habitats or disturbance to birds, given the standard mitigation proposed. The policy of Managed Realignment at Montrose Basin has been modified following consultation with SNH to avoid adverse effects on the integrity of the Montrose Basin SPA/Ramsar, whilst still providing an opportunity to create new intertidal habitat.

Also, it is concluded that the SMP2 will not result in coastal squeeze impacts that affect the Natura sites' qualifying features because the Hold The Line policies are currently in place and are not affecting the condition of the habitats. However, a key assumption underpinning the HRA is that the sediment regime will continue largely as current and at key sites will be in pace with sea-level rise, that will result in minimal or no coastal squeeze impacts on identified features from the implementation of Hold The Line policies over the long term. This is a reasonable assumption to adopt.

The precautionary approach that has been taken in this HRA recognises the uncertainty around climate change and long term coastal squeeze impacts and therefore has proposed scheme-level monitoring and strategic monitoring to improve understanding of coastal processes. The monitoring will help to identify and provide context for any geomorphological changes along the coastline. The monitoring programme will be agreed with SNH, and will include review mechanisms and an early warning mechanism, followed by appropriate intervention if required.

Also, given the exact nature, location and position of a particular defence structure or realignment length cannot be assessed until the more detailed strategic or scheme proposals are developed, these scheme proposals will require HRA and detailed mitigation, and an assessment of these assumptions made on coastal processes. The scheme level HRAs should conclude 'no adverse effects'.

Based on our current understanding of the SMP2 proposals (the policies are by their nature, high level) and our knowledge of the European sites within and adjacent to the SMP2 area, it has been concluded that with the implementation of appropriate mitigation (including monitoring), the plan will not have an Adverse Effect on the Integrity of any European sites.

This assessment at this high SMP2 level does not remove the need for an assessment at the project level. Where this is currently anticipated to implement the SMP2 policies, it has been indicated in this HRA and reflected in the appropriate Management Unit's SMP Action Plan. Furthermore, a project may be entirely consistent with this Strategy but still require further Appropriate Assessment if detail emerging at the scheme-design stage identifies additional impacts that have not been assessed here. Any project arising out of the SMP2 will be discussed with SNH and seek to ensure that any adverse effects on integrity of European sites are avoided.

7 References

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Renewable energy projects information: http://www.renewableuk.com/en/renewable-energy/wind-energy/uk-wind-energy-database/index.cfm/maplarge/1 last accessed 01.02.16

Scottish Government renewal energy licensing information:

http://www.gov.scot/Topics/marine/Licensing/marine/scoping last accessed 01.02.16

Annex 1

Figures

Annex 2

SNH Comments and Minutes