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South East Inshore Marine Plan Sustainability Appraisal. Non-Technical Summary. Draft.



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South East Marine Plan Sustainability Appraisal. Non-Technical Summary.

Report prepared by: ClearLead Consulting Ltd. in association with WSP UK Ltd. and MarineSpace Ltd.



Project funded by: Marine Management Organisation

Version	Author	Note
1	KH/KD	First draft
2	VP/KD	Final
2.1	VP	Final with edit
3	Various	Final with amendments

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1. Introduction

1.1. This report

The Marine Management Organisation (MMO) has simultaneously prepared marine plans for England's south west, north west and north east inshore and offshore marine plan areas and the south east inshore marine plan area. The marine plans for the [south inshore and offshore](#) and the [east inshore and offshore](#) marine plan areas have already been published.

As part of the marine plan- making process, a Sustainability Appraisal (SA) has been undertaken. The SA process and subsequent report (including this Non-Technical Summary) is a requirement of the Marine and Coastal Access Act 2009 and incorporates the requirements of The Environmental Assessment of Plans and Programmes Regulations 2004.

This SA has been carried out by ClearLead Consulting Ltd, in association with WSP UK Ltd and MarineSpace Ltd. on behalf of the MMO.

This is the Non- Technical Summary (NTS) of the draft South East Marine Plan Sustainability Report (SA Report).

The SA report is split into a number of parts:

- Non- Technical Summary (this report)
- The SA Reports incorporating
 - Part 1: Introduction and Methodology
 - Part 2: Scoping Information
 - Part 3: Results of the Assessment.

1.2. What is a sustainability appraisal?

SA is a process, incorporating the requirements of the SEA Directive, which considers the economic, social and environmental impacts of an emerging plan (the three dimensions of sustainable development). The aim in undertaking SA is to identify a plan's likely significant effects and take steps to avoid and/or mitigate the negative effects as well as identify opportunities to maximise a plan's contribution to sustainability.

The SA Report and this NTS conform to the requirements of the SEA Directive, and so the layout and feel of both the full Report and this NTS is influenced by these requirements. The SA has been undertaken throughout the development of the South East Marine Plan and has informed the consideration of options as well as assessing the effects of the draft and final plans.

2. Background to the South East Marine Plan

2.1. Introduction

Marine plans set the direction for decision making to ensure efficient and sustainable use of our marine resources. Once prepared the marine plans will cover a 20 year period and will be reviewed regularly. Marine plans are intended to guide users to the most suitable locations for different activities, assist in managing marine resources to ensure sustainable levels and to ensure that a holistic approach to decision making is taken.

2.2. The South East Marine Plan

The UK Government vision for the marine environment is for, 'clean, healthy, safe, productive and biologically diverse oceans and seas'. The Marine Policy Statement (MPS)¹ is the framework for preparing Marine Plans and taking decisions affecting the marine environment. The UK high level marine objectives (HLMOs)², which form part of the MPS, set the broad outcomes for the marine areas in achieving this vision, and reflect the principles for sustainable development, which are:

- Achieving sustainable marine economy
- Ensuring a strong, healthy and just society
- Living within environmental limits
- Promoting good governance
- Using sound science responsibly.

The South East Marine Plan has a defined vision which is outlined in section two of the South East Marine Plan Sustainability Appraisal: Sustainability Appraisal Report Part 1: Introduction and Methodology.

2.3. Relationship with other plans and programmes

The South East Marine Plan fits into an existing hierarchy of plans, programmes, strategies and environmental protection objectives and these are set out in detail in Part 2 of the SA report. The South East Marine Plan has the following relationship with other plans and programmes:

- International legislation and policy which sets a number of targets, objectives and obligations which the South East Marine Plan should seek to contribute to
- National legislation and policy which outlines measures to achieve many of these obligations through setting regional and local targets for public bodies to achieve and by outlining principles which planning policies and decisions needs to adhere to

¹ Marine Policy Statement available at: <https://www.gov.uk/government/publications/uk-marine-policy-statement>

² HMG,NIE, WAG, SG (2009) Our Seas A Shared Resource - High Level Marine Objectives (online) available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/182486/ourseas-2009update.pdf

- Local and regional policy which sets out more specific local targets and local actions needed to achieve them.

Particularly important for the South East Marine Plan is the following:

- the national MPS and the United Kingdom-wide High Level Marine Objectives which together provide the policy framework for the preparation of marine plans
- the National Planning Policy Framework and associated National Policy Statements
- the EU Maritime Spatial Planning Directive (2014/89/EU) which came into force in July 2014 in support of the Integrated Maritime Policy for the European Union. The Directive introduces a framework for maritime spatial planning and aims to promote the sustainable development of marine areas and marine resources. It also sets out a number of minimum requirements for marine plans.

As well as supporting the HLMOs set out in the MPS, the policies of the South East Marine Plan will support other relevant government aspirations such as those set out in the [25 Year Environment Plan](#), the [Industrial Strategy](#), the [Clean Growth Strategy](#) and sustainable development³ of the marine area.

Regulations require that the SA considers how environmental protection objectives are taken into account in the development of the plan or programme. For the South East Marine Plan SA a full review of the key objectives within other plans and policy documents has been undertaken for each topic and is reported in Part 2 of the SA report. These objectives have then been used to inform the development of an SA framework. The SA framework is then used to test the South East Marine Plan and recommendations are made to strengthen the plan.

2.4. Habitats Regulations Assessment (HRA)

The South East Marine Plan has also been subject to a Habitats Regulations Assessment (HRA), which aims to look at the implications of a proposed plan on one or more European designated sites in view of the sites' conservation objectives. The South East Marine Plan HRA process consists of screening of potential significant effects and a fuller assessment process. Further details can be found in the Appropriate Assessment Information Report.

All Appropriate Assessment reports are available at the following weblink:
<https://www.gov.uk/topic/planning-development/marine-planning>

³ As defined in [United Kingdom Sustainable Development Strategy](#)

3. The Sustainability Baseline

3.1. Introduction

It is important to understand the existing conditions (known as baseline conditions) and the key issues that should be covered as part of the SA process. The sustainability baseline comprises information on aspects of the environment, economy and society that could be affected positively or negatively by the implementation of the South East Marine Plan. Further information relating to the scope of each of the SA topics and background information is presented in sections 3-11 within the South East Marine Plan Sustainability Appraisal: Sustainability Appraisal Report Part 2. The baseline information identified has been summarised in Table 1 below.

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Table 1: Sustainability Baseline Summary: Key Sustainability Baseline, Issues and Characteristics of the South East Marine Plan Areas.

Key Sustainability Baseline, Issues and Characteristics of the South East Marine Plan Areas
<p>Cultural Heritage</p> <ul style="list-style-type: none"> • there are numerous scheduled monuments, listed buildings and registered parks and gardens, including in estuaries and tidal rivers within the marine plan area • there are nine wrecks protected under the Protected Wrecks Act (1973) within the south east inshore marine plan area • during the First and Second World Wars, a wide variety of military activity took place in the waters off the South East of England. As such the Dover Sector contains the remains of a number of significant heritage assets relating to this crucial period of history • the Registered Battlefield of the Battle of Maldon Ford abuts the south east inshore marine plan area • there are numerous development pressures on heritage assets along Thames and Kent and Essex waterways, and related to the setting of World Heritage Sites.
<p>Geology, Substrates and coastal processes</p> <ul style="list-style-type: none"> • there are four Shoreline Management Plans (SMPs) covering the south east inshore marine plan area: Isle of Grain to South Foreland, comprised of 27 policy units; River Medway and Swale Estuary, comprised of 30 policy units; Essex and South Suffolk Languard Point to Two Tree Island, comprised of 102 policy units; and South Foreland to Beachy Head, comprised of 4 policy units. The South Foreland to Beachy Head SMP extends beyond the area of the south east inshore marine plan and mainly covers the south marine plan area • flooding in the Thames tidal floodplain puts numerous people, assets and designated habitats at risk, including: 25 million residents; over 500,000 homes; 400,000 commercial and industrial properties; 400 schools, 16 hospitals; major transport links (e.g. London underground, Port of London and Thames Gateway); key government buildings; 55 km² of designated habitats; and 4 World Heritage Sites.
<p>Seascape and Landscape</p> <ul style="list-style-type: none"> • there are numerous local landscape issues and policies in the south east inshore marine plan area that could influence the marine plans • Bradwell power station within the south east inshore marine plan area is being considered as a new site for nuclear power. All UK nuclear power stations are located at marine/estuarine sites and hence have a significant impact on seascape • views to development behind the coastal edge (e.g. wind turbines near Calais which are visible from the Kent coast) can impact on the rural backdrop and setting of the Strait. Current and future port developments are also impacting on the levels of tranquillity and dark night skies of surrounding seascapes

Key Sustainability Baseline, Issues and Characteristics of the South East Marine Plan Areas

- Dover and Calais are seen by many as entry/exit ports rather than visitor destinations in their own right. Dover in particular is not recognised by many passing through as a gateway to an adjacent seascape of significant natural and cultural heritage value.

Water

- the south east marine plan area has been identified as having potential for wave, tidal stream and tidal range energy resources
- warming in the south east marine plan area has been identified to be one of the most pronounced areas, at 0.7°C per decade over the last three decades
- in 2016, there were six coastal bathing waters classified as poor across the north east, north west, south east and south west marine plan areas. Within the south east inshore marine plan area, this comprised of Clacton and Walpole Bay (Margate)
- there is a problem with beach litter. It has social, amenity and biodiversity impacts. There is evidence to suggest that the problem is getting worse over time. Widespread marine litter and beach plastic are reducing the aesthetic quality of the environment and resulting in wildlife mortality
- the flow rate of the river Thames can be so strong that it prevents fish and other species from travelling upstream. This is compounded at spring tides and during the storm season as two water bodies meet and increase water levels. This issue may have impacts on diadromous species and wider connectivity.

Air Quality

- although the south east inshore is the smallest marine plan area, it is heavily utilised by a wide variety of shipping and, being part of the English Channel, is one of the busiest areas for shipping in the world
- ports such as Dover do not show 'hotspots' of sulphur dioxide concentrations indicating it is not necessarily shipping itself that accounts for the peaks, but the nearby industry linked to the ports
- increased shipping activity, port expansion and associated industry growth could lead to increased sulphur oxides and nitrous oxides emissions at coastal locations, which in turn could contribute to the breach of national objectives for air quality. Such examples include:
 - London Gateway port development
 - Planned expansion of Port of Felixstowe
 - Port of Dover Masterplan
 - Port of Liverpool Masterplan.
 -

Climate

- increase in the magnitude of winter flash floods due to increased winter rainfall and reduced summer rainfall
- seasonal mean and extreme waves are expected to increase

Key Sustainability Baseline, Issues and Characteristics of the South East Marine Plan Areas

- the impacts of climate change are already being observed, and impacts are predicted to continue
- the Thames tidal flood defence system is made up of the Thames Barrier (which spans 520 metres across the River Thames near Woolwich), and eight other major flood barriers owned and operated by the Environment Agency. It also includes 36 industrial flood gates, more than 400 smaller movable structures and over 330 km of walls and embankments which are in over 3000 different ownerships. This system protects the London and Thames estuary tidal floodplain. Climate change will increase risks due to sea level rise, increased storm surge height and frequency in the North Sea and increased peak freshwater flows for the Thames
- the Thames Barrier will continue to provide flood protection to London through most of this century with some modification. However, significant improvements to the current tidal defence system will be needed before 2070 including raising the crest level of most of the flood defences and replacement of a large proportion of the defence structures as they reach the end of their lives. Fifteen per cent of the city's surface area lies on the floodplains of London's rivers, although much of it currently benefits from existing flood defences.

Communities, health, wellbeing

- aquaculture is a growing marine activity and is seen as the means to increase seafood supplies and in turn increase employment
- the highest tourism employment dependency is in the South West of England at 8.63% followed by London at 7.03%, South East England at 6.62% and North West at 6.48%. Additionally, the South West of England is most dependent on tourism for GVA (3.53%) followed by London (3.12%)
- the Paramount theme park, as a nationally significant infrastructure project, will provide economic benefits (e.g. increased employment and investment in the local area) but may contribute to challenges in the local area (e.g. increased congestion and changes to the local landscape)
- an opportunity exists for the plans to increase employment opportunities, which will have social benefits.

Economy

- shipping is an essential and valuable economic activity for the UK. There are significant movements of ships around the UK coast and into and out of UK ports serving the UK's economic interests
- the south east marine plan area has several important ports, with London Gateway the largest of several within the Thames. Others include Sheerness Port in the mouth of the Medway and Thamesport in the Medway. The associated pressures that will need consideration within the plan include, pressure for port expansion and its impacts on coastal habitats and maintenance dredging to support the shipping channel

Key Sustainability Baseline, Issues and Characteristics of the South East Marine Plan Areas

- native oysters were once extensive and supported a large industry in this area. Restoration of the native oyster is the focus of a project being run by the Kent and Essex Inshore Fisheries and Conservation Authority (IFCA). This is a key factor in shellfisheries and aquaculture within the south east marine plan area
- effects of poor water quality are had on fisheries and aquaculture, which in turn can impact the inshore
- access to the River Thames can be poor. New development in London needs to take account of riverside walks, cycle paths and public access to the water
- the south coast (including the south east) dominates participation in boating activities
- the south east marine plan area is not a significant area for marine manufacturing, although ports such as Port of London are key in exporting UK manufactured goods overseas
- economic growth could be constrained by environmental limits of activities
- sea training is carried out within defined military practice and exercise (PEXA) training areas. Seventeen percent of the south east inshore plan area is dedicated as PEXA
- effects of vessel traffic in Port of Harwich are had on aggregate extraction
- effects of the mobile Longsands sand bank encroach on aggregate extraction sites
- high levels of aggregate extraction in the south east inshore marine plan area place a locally significant pressure on subtidal sediments.
- tidal key resource areas identified within the south east marine plan area include the Thames estuary
- in October 2015 the Government's Energy Secretary confirmed that China will lead the construction of a nuclear power station at Bradwell-on-Sea, nominated into the Government's Strategic Siting Assessment process and incorporated into the Nuclear National Policy Statement.

Biodiversity, Flora and Fauna

- electric beam trawling within the plan area can have a potential impact on inshore fisheries, affecting both target and non-target species
- there is potential seabird bycatch from driftnet and gillnet fisheries in the south east marine plan area
- the south east marine plan area has a number of consented and proposed offshore wind farms
- effects of pollution from marine activities (aquaculture, shipping, oil and gas, marine construction) are had on benthic and intertidal habitats and species, including cumulative impacts from increasing levels of contaminants
- reduced prey availability for some benthic and intertidal organisms due to impacts of ocean acidification on plankton increasingly affecting food webs.

Key Sustainability Baseline, Issues and Characteristics of the South East Marine Plan Areas

- change in habitat condition and habitat loss through sea level rise, coastal squeeze, storm events from climate change and creation of coastal defences
- impacts to subtidal sediments from mobile fishing gear (such as bottom trawls and dredges) can cause damage and create disturbance resulting in loss of benthic habitats and species
- impacts on subtidal sediments from offshore industry (e.g. aggregate extraction, dredging, and offshore energy production) is an issue
- further work is required to address the potential long-term impact of light pollution on commercial fish species and marine life in general
- broad-scale changes in habitats and species are increasingly likely, resulting from rising sea temperatures due to climate change.
- the UK seabird indicator stands at 22% below the 1986 baseline, with most of this decline occurring since the mid-2000s
- habitat suitability around the UK for seabirds is projected to shift northward over the next century and birds' distributions may shift with changing conditions. Declines in European ranges are also predicted.

4. How the Assessment was Undertaken

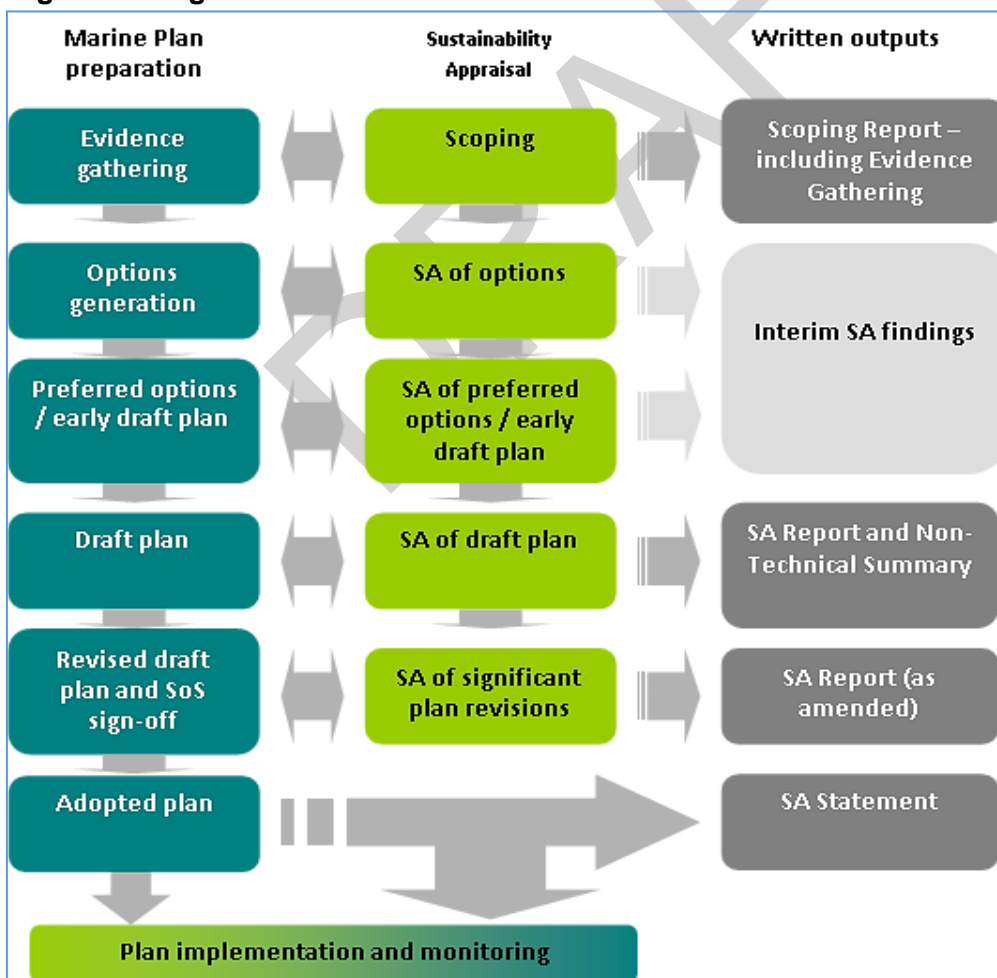
4.1. The SA Process

The stages in the SA process have been developed to take into account the five procedural stages of SEA:

- Stage A: (scoping) setting the context, establishing the baseline and deciding on the scope of the assessment
- Stage B: developing and refining alternatives and appraising the effects
- Stage C: preparing the SA Report
- Stage D: consulting on the SA Report and the South East Marine Plan and assessing any significant changes
- Stage E: monitoring the significant effects of implementing the South East Marine Plan.

In practice, the SA is an iterative process which has been undertaken in parallel with the development of the South East Marine Plan and has fed into the development of the South East Marine Plan at appropriate intervals – see Figure 1.

Figure 1: Stages in the SA Process.



4.2. Stage A- Scoping

The purpose of the scoping stage was to decide the coverage (scope) and the level of detail of the SA. The scoping report was produced by a consortium composed of Ramboll Environ, ClearLead Consulting Ltd and Marine Planning Consultants (MPC) Ltd in April 2016. The draft scoping report was engaged on from 11th April 2016 to the 13th May 2016. Following some small factual changes, the final scoping report was published by the MMO. The scoping report forms part of the suite of documents which support this SA Report.

The scoping report outlines an SA framework which the South East Marine Plan and its alternatives are measured against in order to test their sustainability. The SA framework is set out in Table 2.

The scoping process also sets out the geographical and temporal scope of the SA:

Geographical: The South East Marine Plan includes the south east inshore marine plan area only; there is no south east offshore marine plan area. The south east inshore marine plan area covers an area of approximately 1,400 kilometres of coastline stretching from Felixstowe to near Dover, taking in a total of over 3,900 square kilometres of sea.

Temporal: The South East Marine Plan covers a 20 year period, and therefore the SA has considered the effects of the plan over the next 20 years and beyond where possible.

The scoping report was issued to the following statutory bodies:

- Natural England
- Historic England
- The Environment Agency.

In addition to statutory bodies, the scoping report was issued to 20 organisations for comments. The full list is located within section 3 of Part 1 of the Sustainability Appraisal Report.

Table 2: SA framework.

	Overarching SA topic	SA sub-topic
Physical and Chemical Aspects	Cultural Heritage	<ul style="list-style-type: none"> • heritage assets within marine plan areas • heritage assets adjacent to marine plan areas.
	Geology, Substrates and Coastal Processes	<ul style="list-style-type: none"> • seabed substrates and bathymetry • coastal features and processes.
	Seascape and Landscape	<ul style="list-style-type: none"> • effects on seascape and landscape.
	Water	<ul style="list-style-type: none"> • tides and currents • water temperature and salinity • pollution and water quality • marine litter.
	Air Quality	<ul style="list-style-type: none"> • air pollutants.
	Climate	<ul style="list-style-type: none"> • greenhouse gas emissions • climate change resilience and adaptation.
Social and Economic Aspects	Communities, Health and Wellbeing	<ul style="list-style-type: none"> • health and wider determinants of health and effects on communities • effects on protected equality groups.
	Economy	<ul style="list-style-type: none"> • ports and shipping • fisheries and aquaculture • leisure / recreation • tourism • marine manufacturing • defence • aggregate extraction • energy generation and infrastructure development • seabed assets.
Ecological Aspects	Biodiversity, Habitats, Flora and Fauna	<ul style="list-style-type: none"> • protected sites and species • benthic and intertidal ecology • fish and shellfish • marine megafauna • plankton • ornithology • invasive non-native species.

4.3 Stage B- Assessing the Options

The SEA Directive requires that the assessment identifies and evaluates reasonable 'alternatives' to what is proposed within the plan.

This stage involved assessment of the alternative options against the SA framework, taking into account the evidence base provided within the SA Database (Appendix A South East Marine Plan Sustainability Appraisal: SA Report Part 1: Introduction and Methodology). The key features of the options assessment approach were:

- an approach that assessed each option as a whole and to the same level of detail. 264 policy options were packaged into 28 policy groupings⁴, and the assessment provided a comparison of the options within each grouping
- an evidence-led assessment which referred to the baseline information to provide quality assured evidence as the basis of the assessment
- focused on identifying key potential significant effects to inform the decision making between options.

The assessment of options was undertaken in two stages:

- **Screening:** a screening process was carried out to determine whether the SA sub-topics were relevant to the specific grouping
- **Assessment of significant effects:** Each option was considered against the relevant SA Framework sub-topics. Expert judgement and the updated SA Database (developed at the scoping stage of the SA process and refreshed in August 2017 prior to the assessment) were used as evidence for the assessment.

The options assessment of the draft South East Marine Plan was reported in an options assessment SA report which can be found [here](#).

4.4. Stage B- Assessing the Draft and Final Plan

The SA of the South East Marine Plan preferred policies has been undertaken as a 'baseline-led' assessment which considers how the baseline situation will change with the South East Marine Plan in place. This is shown in Part 3 of the South East SA report.

A qualitative approach has been used, comprising the assessment and description of effects, rather than a quantitative approach which is not considered appropriate or feasible at this strategic level, in view of the form and content of the plan.

The SA of the draft South East Marine Plan focuses on the preferred policies completed in July 2019. This consists of 62 policies arranged within 29 groupings outlined below:

⁴ Four groupings (Cumulative Effects, Governance, Evidence Gaps and Implementation) contained options which are not possible to assess through the SA because they are overarching policies and the options were not distinct.

Table 3: South East Policy Groupings.

South East Policy Groupings		
Economic:	Environmental:	Social:
Aggregates	Air Quality	Access
Co-existence	Climate Change	Fisheries
Ports and harbours (including shipping)	Marine Litter	Defence
Aquaculture	Biodiversity	Cross-boundary considerations
Dredging and disposal	Cumulative effects	Seascape and landscape
Renewables	Marine Protected Areas	Tourism and recreation
Cables	Natural Capital	Social benefits
Oil and gas	Disturbance	Employment
	Invasive / non- invasive species	Heritage Assets
	Underwater noise	Infrastructure
	Water Quality	

The same approach to assessment has been taken as for the assessment of options:

- preferred policies have firstly been screened to identify sub-topics of relevance to the policy grouping
- an assessment of significant effects was performed in relation to the relevant sub-topics only.

The assessment criteria set out within Table 4 have been used to identify the potential effects of the South East Marine Plan policies.

Table 4: Policies Assessment Criteria.

Notation	Description
Degree to which baseline conditions may change (significance of effect) compared with the future baseline situation	
++	Major Positive Effect (significant positive): The plan policies are likely to lead to significant improvements in baseline conditions.
+	Minor Positive Effect: The plan policies are likely to lead to some improvements in baseline conditions.
0	Neutral Effect: The plan policies are unlikely to alter baseline conditions significantly.
-	Minor Negative Effect: The plan policies are likely to lead to a deterioration in baseline conditions.
--	Major Negative Effect (significant negative): The plan policies are likely to lead to a significant deterioration in baseline conditions.

Notation	Description
?	Uncertain Effect: It is not known whether the plan policies would lead to an improvement or deterioration in the baseline conditions ⁵ .
Direct / Indirect	
Direct	Effects that are a direct result of the plan policies.
Indirect	Effects that are secondary i.e. they occur away from the original effect or as a result of a complex pathway.
Reversibility of effects	
Reversible	It is considered that the effects upon the receptor group could be reversed if activities were to change in the future. The effects could be long-lasting but the receptor may hence be able to recover or indeed improvements could be diminished.
Irreversible	It is considered that the effects upon the receptor group could not be reversed. This may apply to situations where, for example, features are destroyed forever or systems/trends are irrevocably changed.
Permanence of effects	
Permanent	Effects could be lasting or intended to last or remaining unchanged indefinitely.
Temporary	Effects are not likely to be lasting or permanent.
Duration	
Short	Within three years of plan adoption – within the reporting period i.e. policy would have an immediate effect.
Medium	Within plan period (up to 20 years from adoption)
Long	Beyond plan period (more than 20 years from adoption)
Spatial Extent	
Beyond both plan boundaries	Effects are predicted to extend beyond the plan boundaries (i.e. cross-boundary) and could affect the terrestrial environment, neighbouring marine plan areas or other states.
Inshore and offshore plan-wide	Effects are predicted to occur within the inshore and offshore plan areas.
Inshore plan-wide only	Effects are predicted to occur within the inshore plan area only.
Localised	Effects are predicted to have a relatively small spatial extent, confined to the local area, typically <5km from source, within the plan boundaries.
Magnitude of effects	
High	Likely total loss of or major alteration to the receptor in question The effects are predicted to be permanent and irreversible.
Medium	Partial loss of/alteration/improvement to one or more key elements/features/characteristics of the receptor in question The effects are predicted to be medium-long term but reversible.

⁵ Please note that for the purpose of this SA, uncertain effects have been treated as potentially significant and mitigation measures suggested

Notation	Description
Low	Minor loss/alteration/improvement to one or more key elements/features/characteristics of the receptor in question The effects are predicted to be reversible and short term.

4.5. Stage C- Preparing the SA Report

The draft SA Report for the South East Marine Plan constitutes three parts:

- Part 1: Introduction and Methodology
- Part 2: Scoping Information
- Part 3: Results of the Assessment.

Material and documents generated as part of the SA process are available [here](#).

4.6. Stage D- Consulting on the SA Report

The draft South East Marine Plan and accompanying SA Report will be consulted on with the public and other key stakeholders in Quarter 1 2020.

4.7. Stage E- Monitoring

Monitoring the effects of the plan will be the responsibility of the MMO. Monitoring recommendations will be put forward for integration into the MMOs marine plan monitoring within the SA Adoption Statement.

4.8. Difficulties encountered

The South East Marine Plan is a regional scale plan which is not intended to address site or project-specific details. The large majority of the policies in the plan are generic or criteria-based policies and do not have a clear spatial dimension.

This results in uncertainty when predicting the effects of activities and consequently strategic impacts can be identified with the most certainty, together with the extent to which the marine plan seeks to avoid or offset these impacts. Correspondingly, this SA's predictions and proposed mitigation measures will primarily be at a strategic level.

5. Significant Effects of the Plan and Mitigation

5.1 Introduction

This section presents a summary of the assessment findings of the South East Marine Plan preferred policies by SA topic, the summaries of which are presented in Table 5 to Table 13 below. The full assessment of the preferred policies can be found within Technical Appendix B to the full report.

Table 5: Assessment results: Cultural Heritage.

Cultural Heritage	
Significant Positive Effects	++
<ul style="list-style-type: none"> the significance of heritage assets in the immediate vicinity of the south east marine plan area, is susceptible to the impacts arising from activities within marine plan areas. The heritage policy aims to protect heritage assets from developments that could result in adverse effects. 	
Significant Negative Effects	--
<ul style="list-style-type: none"> buried subsea cables have the potential to disturb both known and undiscovered archaeological sites. A preference for burying cables is included within the cables policies could exacerbate disturbance on heritage assets, both within and adjacent to the south east marine plan area aggregates and dredging and disposal activities have the potential to adversely impact buried heritage assets (both known and unknown) located on the seabed. As dredging and disposal and aggregate policies aim to safeguard these activities, the policies have result in significant negative effects. 	
Uncertain Effects	?
<ul style="list-style-type: none"> future ports, harbours and shipping activity have the potential to impact heritage assets, particularly those that may be buried and not yet uncovered. Associated port activities, such as dredging, could also be increased as a result. Future development is not yet known; however, this will be identified in harbour master plans to be developed as part of Maritime 2050⁶, which could allow for greater certainty oil, gas and carbon capture usage and storage (CCUS) developments has potential to adversely impact buried heritage assets. There are no oil or gas fields or terminals in the south east marine plan area and no currently licenced areas to be awarded or offered in the south east marine area. It is therefore unlikely that policies SE-OG-1 and SE-OG-2 that offer 	

⁶ Department for Transport, Maritime 2050, Navigating the Future, 2019

Cultural Heritage
<p>safeguarding will result in future developments, however, this cannot be known for certain. The impacts of CCUS on heritage assets are not known, and again it is not clear if policy CCUS-2 would explicitly lead to future CCUS activity in the marine plan area</p> <ul style="list-style-type: none"> renewable energy developments have the potential to negatively affect the seabed and subsequent heritage assets, however, the extent of these effects is largely dependent on the device used, and the installation methods.

Table 6: Assessment results: Geology, Substrates and Coastal Processes.

Geology, Substrates and Coastal Processes	
Significant Positive Effects	++
<ul style="list-style-type: none"> the climate change policy grouping seeks to increase resilience of geology to the effects of climate change, minimise adverse impacts on coastal change adaptation measures and support proposals which have the potential to increase flood defence and carbon sequestering habitats the seabed provides a role for both nutrient cycling and carbon sinks, the importance of which has been identified within the supporting text to the natural capital policy grouping. As a result of this policy, it is assumed that seabed substrates and bathymetry would be offered protection, due to the importance of these assets. 	
Significant Negative Effects	--
<ul style="list-style-type: none"> marine dredging has potential to result in the loss of seabed substrates, whilst disposal of dredge material can disturb the seabed at both the extraction and selected disposal site. Increased dredging activity may occur as a result of dredging policies aggregate activity can significantly change the hydrodynamic regime, which in turn could alter coastal processes. Increased aggregate activity could occur if aggregate policies are implemented. 	
Uncertain Effects	?
<ul style="list-style-type: none"> according to the baseline, the UK is locked into accelerated sea level rise, regardless of what is done about greenhouse gas emissions. Sea level rise has potential to give way to increased coastal erosion, inundation of the coastline and coastal squeeze. Due to the current lack of evidence on future scenarios of coastal processes, an uncertain effect has been identified in relation to the air quality policy and the coastal features and processes sub-topic the effects of renewable energy installations on potentially sensitive environmental features are unknown at present. The installation of renewable technology and subsequent reduced contributions to climate change may help to appease the impacts of increased storminess such as coastal inundation within the marine environment. However, due to the unknown type and location of future renewable sites, an uncertain effect has been identified, for the coastal features and processes sub-topic. 	

Table 7: Assessment results: Seascape and Landscape.

Seascape and landscape	
Significant Positive Effects	++
<ul style="list-style-type: none"> • there is a close relationship between the presence of heritage assets and the character, value and appreciation of landscape and seascape. Heritage policies aim to protect heritage assets from future proposals, ensuring that the diversity of the marine environment, and its cultural heritage, is protected • landscape and seascape policies aim to maintain and improve the seascape and landscape within the south east marine plan area. Proposals which may harm the current seascape or landscape must demonstrate why this is necessary and mitigate adverse effects. 	
Significant Negative Effects	--
<ul style="list-style-type: none"> • both landscape and seascape can be highly sensitive to visual impacts associated with developments. Given the importance of the Kent Downs AONB, if future developments were to come forward, there is potential for adverse effects to occur. For these reasons, significant negative effects have been identified in relation to the renewables policies. 	
Uncertain Effects	?
<ul style="list-style-type: none"> • the potential effect on seascapes and landscapes by the natural capital policy is uncertain at present and dependent on its implementation. Seascapes and landscapes are vulnerable to adverse and cumulative effects from multiple sectors and/or activities, as highlighted by Landscape. As a natural capital asset, seascapes and landscapes can provide benefits associated with tourism, recreation, wellbeing and cultural value. However, these benefits and associated activities can themselves adversely affect seascape and landscape, forming an interdependent relationship • there are no oil or gas fields or terminals in the south east marine plan area and no currently licenced areas to be awarded or offered in the south east marine plan area. It is therefore unlikely that policies SE-OG-1 and SE-OG-2 that offer safeguarding will result in future developments, however, this can't be known for certain. 	

Table 8: Assessment results: Water.

Water	
Significant Positive Effects	++
<ul style="list-style-type: none"> marine litter is cross-boundary in nature, as litter moves in the marine environment and litter originating from one marine plan area or even country can affect another. The cross-boundary considerations policy supporting text states that the alignment of marine planning with other planning, regulation and management bodies is necessary in order to manage pressures and aims to ensure cross-boundary impacts are minimised across international borders the natural capital policy grouping aims to discourage proposals which may have a significant adverse impact on the marine environment and any natural capital which can be derived from this, and would thereby encourage improved water quality and pollution status of waters both within the south east marine plan area and beyond a potential significant indirect positive effect has been identified in relation to the renewables policies on the water temperature and salinity SA sub-topic. It is assumed that an increase in renewable energy generation could work to counter the advance of climate change and the associated effects on water temperature and salinity the water quality policy aims to enhance and restore water quality and ensure that new proposals are accountable for their potential negative impact on water quality. For this reason, a significant positive effect has been identified for the pollution and water quality sub-topic. 	
Significant Negative Effects	--
<ul style="list-style-type: none"> marine litter is a prevalent issue across the south east marine plan areas, of which the fishing industry is a key contributor. Significant negative effects have been identified in relation to the fisheries policy grouping and the marine litter SA sub-topic shipping can negatively impact water quality through the possible discharges from ships such as bilge water, ballast water, sewage and other residues in a ship. Spills of oils, lubricants, fuels and other oily liquids as well as marine litter can also be sources of water pollution from both ports and ships. As the ports and harbours policy grouping could result in increased shipping activity, there is potential for increases in marine litter and pollution, therefore these policies have resulted in significant negative effects for both the pollution and water quality and the marine litter SA sub-topics. 	
Uncertain Effects	?
<ul style="list-style-type: none"> increased levels of tourism have the potential to negatively impact water quality and increase marine litter within the south east marine plan area. Tourism and recreation policies states that 'sustainable tourism and recreational activities' will be supported, however, it is not clear whether 'sustainable tourism' will result in a positive effect on water quality and marine litter SA sub-topics. there are no oil or gas fields or terminals in the south east marine plan area and no currently licenced areas to be awarded or offered in the south east marine area. It is therefore unlikely that policies SE-OG-1 and SE-OG-2 that offer safeguarding will 	

Water
<p>result in future developments, however, this cannot be known for certain. Policy SE-CCUS-1 encourages the use of CCUS which has potential to cause a reduction in water quality, acidification/salinity changes and potential for pollution from contaminants used. However, it is not clear if policy CCUS -2 would explicitly lead to future CCUS activity in the marine plan area.</p>

Table 9: Assessment results: Air Quality.

Air Quality	
Significant Positive Effects	++
<ul style="list-style-type: none"> the air quality policy aims for all proposals to demonstrate consideration of their contribution to air pollution, both direct and cumulative. Given that air pollution is an issue in the south east marine plan area, the policy could effectively help to reduce air pollution. 	
Uncertain Effects	?
<ul style="list-style-type: none"> ports and shipping activity contribute significantly to air pollution. The ports and harbours policies could result in further port and shipping activity in the region, and subsequently negatively impact air pollution. There is some uncertainty regarding 'sustainable expansion' and whether this will contribute to a reduction air pollution. 	

Table 10: Assessment results: Climate.

Climate	
Significant Positive Effects	++
<ul style="list-style-type: none"> the climate change policy grouping has resulted in a potential significant positive effect on climate change resilience and adaptation SA sub-topic, as it seeks to increase resilience and adaptation to the effects of climate change the marine protected areas policy grouping and the climate change resilience and adaptation SA sub-topic, directly address the issue of climate change adaptation, with clear preference for proposals which enhance the adaptability of marine protected areas to climate change the renewables policy grouping policies support energy generation by marine renewables which in turn could alleviate demand on greenhouse gas-emitting fossil fuel energy generation, resulting in significant positive effects on the greenhouse gas emissions SA sub-topic the air quality policy grouping aims to ensure that developments which contribute to greenhouse gas emissions will need to consider the need to protect air quality, resulting in significant positive effects on the greenhouse gas emissions SA sub-topic 	

Climate	
<ul style="list-style-type: none"> natural flood defences provide regulatory natural capital services. In the south east inshore marine plan area, mudflats in the Medway Estuary, play an important natural role in protecting the coast from flood events by reducing wave energy and buffering flood waters. It is therefore, assumed that as a result of this policy, natural flood defences in the inshore plan area will be protected, which in turn will provide climate change resilience. 	
Uncertain Effects	
<ul style="list-style-type: none"> ports and shipping activity contribute significantly to greenhouse gas emissions. Ports and harbours policies could result in further port and shipping activity in the region, and subsequently negatively impact on climate change. There is some uncertainty regarding 'sustainable expansion' and whether this will contribute to a reduction in greenhouse gas emissions CCUS could provide opportunities to reduce greenhouse gas emissions, and is an important element of the UK's Carbon Plan. CCUS could be beneficial in achieving the UK's carbon targets, including its proposed transition to a carbon neutral status. In isolation, Policy SE-CC-2 could result in a positive effect on greenhouse gas emissions, however, policies SE-OG-1 and SE-OG-2 could result in oil and gas extraction and indirectly and directly result in an increase of greenhouse gas emissions. There is potential, if future oil and gas developments were to come forward, they could be offset by CCUS, but policies have not indicated the likelihood and scale of future developments, therefore, an uncertain effect has been identified for both climate SA sub-topics the air quality policy has the potential to help to reduce the effect of future developments on climate change, however, according to the baseline, the UK is locked into accelerated sea level rise over this timeframe regardless of what is done about greenhouse gas emissions. 	?

Table 11: Assessment results: Communities, Health and Wellbeing.

Communities, Health and Wellbeing	
Significant Positive Effects	++
<ul style="list-style-type: none"> the baseline has identified income and employment deprivation issues associated with coastal communities across the south east marine plan area. It is assumed that the employment policy grouping will help to provide employment opportunities for all, including those from protected equality groups it is assumed that the natural capital policy grouping will seek to prevent and/or minimise adverse impacts on marine natural capital within the marine plan area, which in turn would have the potential to benefit local communities increased access to tourism and recreation activities, as a result of tourism and recreation policies, could provide significant social benefits for communities through, greater social cohesion, improved health and wellbeing (both physical and mental) and job creation the cross-boundary considerations policy grouping aims for developments to consider cross-boundary impacts upon adjacent marine plan areas and the terrestrial environment including economic, social impacts. In order to achieve sustainable development, it is assumed that developments will need to consider their impact on communities (including health and wellbeing) the social benefits policy aims to support proposals that enhance and/or promotes social benefits. Future proposals are encouraged to consider and enhance public knowledge, understanding, appreciation and enjoyment of the marine environment as part of (the design of) the proposal. As access to a high quality marine environment can make a significant contribution to the mental and physical health and wellbeing of communities, a significant positive effect has been identified for the health and the wider determinants of health SA sub-topic. 	
Uncertain Effects	?
<ul style="list-style-type: none"> renewable energy policies aim to support associated renewable technology supply chains, which could result in increased employment opportunities. However, at this stage, it is not clear as to whether any proposals will come forward, and the likely available employment opportunities. 	

Table 12: Assessment results: Economy.

Economy	
Significant Positive Effects	++
<ul style="list-style-type: none"> • an increase in access to the marine environment is predicted to result from the implementation of the access policy grouping on leisure and recreation. This should allow for greater use of the natural environment for leisure and recreation • aggregate policies could result in further aggregate extraction in the south east marine plan areas. The baseline has identified the significance of the UK marine aggregates and the importance they could play in the future for meeting housing demands and provision of fill for major coastal infrastructure projects, such as ports, coastal defences, renewable energy and nuclear energy projects • electrical interconnections with other nations help to contribute to UK energy security, affordability and decarbonisation objectives. The cables policy grouping will help to enable further cable development within the plan area, and could ensure energy security for the future. Significant positive effects have been identified in relation to the energy generation and infrastructure development and seabed assets SA sub-topics • the development of a sustainable fishing industry, with good access to both fishing grounds is promoted within the fisheries policies, resulting in significant positive effects on the fisheries and aquaculture SA sub-topic • oil and gas policies could support future oil and gas extraction within the south east marine plan areas, through the safeguarding of sites. CCUS policies could also result in CCUS activity within the inshore marine plan area. Significant positive effects have been identified in relation to the energy generation and infrastructure development SA sub-topic • tourism and recreation policies aim to protect existing leisure and recreational activities and could result in expansion and diversification of existing developments as well as new proposals. This has resulted in significant positive effects on both the leisure and recreation and tourism SA sub-topics • the renewable energy policy groupings aim to safeguard areas for future renewable development and promote new renewable technologies. Significant positive effects have been identified in relation to the energy generation and infrastructure development SA sub-topic • ports and shipping make a significant contribution to the UK's economy. Policies SE-PS-2 and SE-PS-3 could help to safeguard port access and key navigational routes, whilst policies SE-PS-1 and SE-PS-4 could increase port and shipping activity within the south east marine plan area • the implementation of the employment policy grouping could result in significant positive effects on a number of SA sub-topics, by offering employment opportunities across multiple sectors. This has led to significant positive effects for the ports and shipping, fisheries and aquaculture, leisure and recreation, tourism and energy SA sub-topics. 	
Significant Negative Effects	--

Economy

- the marine protected areas policies have the potential to cause a significant negative effect on fishing and aquaculture, as no fishing would be permitted within the proposed Medway Nursery Area No Take Zone. The MPA policy grouping may also prevent aquaculture developments within this region. Specifically, policy SE-MPA-1 would prevent development which may alter the no take zone environment, or cause damage to the environments.

Uncertain Effects

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- it is unclear from the access policy grouping how public access to areas used for defence will be treated. There may be some activities which are incompatible with public access, and for this reason an uncertain effect has been identified
- air quality policies could result in the limitation of future emission heavy energy sources in particular oil and gas developments. However, there is potential that the policy could result in a shift towards cleaner energy sources and create new opportunities within the energy sector
- the aquaculture policies have the potential for a significant positive effect on fisheries and aquaculture. It directly addresses the need for future development to consider nearby aquaculture facilities and encourages sustainable design. However, the terms which would be acceptable for proposals which will adversely affect aquaculture are unclear
- preference towards defence activity could see some recreational activity and new recreational proposals limited within the plan area, and there is potential for issues with relation to access. Uncertainty has been recorded as the proposals will need to be considered on a case by case basis and it is unclear from the policy wording which proposals would require authorisation
- the fishing industry is dependent on a healthy marine environment. It is dependent on the marine environment being able to support healthy fish stocks which are free of persistent pollutants and heavy metals. However, through its reliance on fish stocks as a natural capital asset, fishing itself has the potential to have a direct adverse impact on the marine environment. It is uncertain, therefore, how the interdependent nature of fisheries and aquaculture on the natural capital assets provided by the marine environment would affect the industry
- leisure and recreation associated activities can benefit from the natural capital afforded by the marine environment (economic, outdoor recreation, increased visitor numbers), however, these activities may have a significant adverse impact on elements of marine and coastal natural capital, and therefore could be limited by this policy
- aggregate extraction is dependent on, and benefited by, the natural capital which provides marine aggregates. However, it may have a significant adverse impact on other elements of marine and coastal natural capital such as biodiversity, and as such, may be impacted by the nature of the natural capital policy
- ports have a vital role in the import and export of energy supplies and will need to be responsive both to changes in different types of energy supplies needed and to the need for facilities to support the development and maintenance of offshore

Economy
<p>renewable sites. There is potential for the renewable policies to result in significant positive effects on shipping, however, further development as well as the restrictions associated with some developments (in particular wind developments) will further reduce available space and add complexity to already challenging coastal waters</p> <ul style="list-style-type: none"> it is unclear if developments for aquaculture and fisheries would be deemed to have an adverse effect on seascape or be within the public interest, and therefore be limited by the seascape and landscape policies.

Table 13: Assessment results: Biodiversity, Flora and Fauna.

Biodiversity, Habitats, Flora and Fauna	
Significant Positive Effects	++
<ul style="list-style-type: none"> the implementation of the marine protected areas policy grouping could have potential for significant positive effects on benthic and intertidal ecology, as it may increase the adaptability of benthic and intertidal environments to the effects of climate change, and make suitable arrangements for the spatial changes in distribution of habitat types the cumulative effects policy is predicted to have a significant positive effect on the benthic and intertidal environment and the protected sites and species SA sub-topic, as it will address adverse cumulative effects from future proposals the invasive non-native species policy grouping directly aims to prevent the introduction and increase of invasive non-native species throughout the plan area. Transport of invasive non-native species, as well as areas of potential colonisation are addressed within this grouping, which should help to form a well-rounded approach to tackling this issue the south east marine plan area includes important fish spawning areas for cod, plaice, sand eel and sole, and nursery grounds for anglerfish and mackerel. The co-existence policy supporting text has identified the importance of this and has stated that it will optimise the use of these important grounds. This will help to protect fish and shellfish within the region the invasive non-native species policy grouping has the potential to positively effect native fish and shellfish populations, such as the European Eels inhabiting the Severn Estuary. It clearly outlines the need to prevent the introduction of invasive non-native species through transport and construction, which could subsequently compete with native species. 	
Significant Negative Effects	--
<ul style="list-style-type: none"> the increased number of aquaculture facilities which could result from the aquaculture policy grouping, may have potential positive effects on local fish and shellfish species. However, unless carefully managed, there is potential for increased eutrophication, altering of food sources and increased disease transmission. Competition may also occur between new species and native lobster populations 	

Biodiversity, Habitats, Flora and Fauna

- the installation of buried subsea cables has the potential to disturb benthic and intertidal habitats. The preference that the cable policy grouping gives to buried cables has resulted in a significant negative effect particularly on benthic habitats within the marine plan area
- the aquaculture policy grouping also has potential to have a significant negative effect on benthic and intertidal ecology. This policy grouping promotes aquaculture developments, which could lead to an increase in the nutrients and pollutants present within benthic and intertidal sediments, altering species composition. Negative effects have also been identified on fish and shellfish
- the aggregate and dredging and disposal policy groupings support aggregate extraction and dredging and disposal in the south east marine plan area. Both activities have the potential to lead to the loss of subtidal rocky habitats and benthic species and habitats, and ornithology. Dredging and disposal could also result in the loss of fish and shellfish
- the baseline has identified the potential for a negative impact of aggregate extraction on the Outer Thames SPA and the Margate and Long Sands SAC and therefore a potential significant negative effect has been identified with regards to the protected sites and species SA sub-topic
- noise impacts from marine dredging are already having an impact on marine megafauna within the marine plan area. The dredging and disposal policy could result in further dredging activity within the plan area, worsening the current situation
- the implementation of the underwater noise policy grouping could have significant negative effects on fish and shellfish. Policies in this grouping could lead to the development of proposals which directly alter fish movement patterns, therefore altering energy expenditure. Species which are not "highly mobile" would not be protected by this policy. This could lead to the irreversible loss of populations. The policy grouping may also negatively affect protected sites and species
- offshore energy developments, such as oil and gas and renewables, have the potential to increase noise, which is likely to be significantly worse during construction. The production of noise in the marine environment can have varying effects on marine mammals, including the alteration of feeding behaviour, increased energy expenditure and death due to altered dive patterns
- bycatch of marine mammals by fisheries and their entanglement by marine litter are two separate issues which could be exacerbated by the fisheries policy grouping
- associated port and shipping activity, in particular dredging, has potential to impact sub-tidal sediments and the baseline has identified that at various locations near large ports, subtidal rocky habitat has been lost due to construction, infrastructure (mainly coastal) or via smothering from dredged deposits. Shipping also poses the risk of water pollution which can indirectly impact benthic and intertidal ecology. These activities could increase as a result of the ports and harbours policy grouping
- ports and shipping activity could increase as a result of the ports and harbours policy grouping. This could result in increased disturbance as well as potential collisions with marine megafauna and ornithology.

Biodiversity, Habitats, Flora and Fauna

Uncertain Effects

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- it is unclear if the cumulative effects policy grouping will extend to those which are cross-boundary cumulative effects. Birds and marine megafauna are often highly migratory species, and may therefore experience the cumulative effects originating within multiple plan areas
- fisheries pose a threat to vulnerable or rare species and whilst the fisheries policy grouping seeks to protect essential fish habitat, it is unclear whether this would apply only to fish habitat of commercially important species. For this reason, an uncertain effect has been identified for protected sites and species, benthic and intertidal ecology and fish and shellfish SA sub-topics
- the tourism and recreation policy could result in increased recreational pressures on marine megafauna and ornithology. It is uncertain what 'sustainable tourism and recreation activities' entail, and therefore whether this policy would address issues with increased tourism resulting in increased disturbance on marine megafauna
- renewable energy policies could result in further renewable developments within the south east marine plan area, which could indirectly reduce the climate change impacts on benthic intertidal ecology and plankton. Impacts could be dependent upon the type and number of developments, which is not known at this stage.

5.2 Mitigation

Mitigation measures are measures suggested to prevent, mitigate, reduce or offset negative, cumulative or uncertain effects. Where significant negative or uncertain effects were identified within the policy assessment, mitigation has been provided via the following (either as standalone or in combination):

- **general mitigation:** this may be provided through other policies within the South East Marine Plan; existing plans and policies (such as local plans, national park management plans) or through other processes, for example, environmental impact assessment (EIA)
- **specific mitigation:** this mitigation type has recommended alterations to either the supporting text or policy wording. A summary of policies with proposed mitigation can be seen in Table 14 below.

Further details on proposed mitigation for each of the SA topics can be found in sections 5-13 in Part 3 of the South East Inshore Marine Plan Area Sustainability Appraisal.

Table 14: Summary of specific mitigation measures.

Mitigation Type	Policies with proposed specific mitigation
Changes to supporting text	SE-AGG-1, SE-AGG-2 and SE-AGG-3 SE-AIR-1 SE-AQ-1 and SE-AQ-2 SE-BIO-2 and SE-BIO-3 SE-NG-1 SE-CO-1 SE-DEF-1 SE-DD-1, SE-DD-2 and SE-DD-3 SE-DIST-1 SE-FISH-1, SE-FISH- 2 and SE-FISH- 3 SE-HER-1 SE-ML-1 and SE-ML-2 SE-MPA-1, SE-MPA-2 and SE-MPA-4 SE-OG-1 and SE-OG-2 SE-PS-1 SE-REN-1 SE-SCP-1 SE-TR-1 SE-UWN-1 and SE-UWN-2 SE-WQ-1
Changes to policy wording	SE-FISH-3 SE-ML-1 and SE-ML-2 SE-UWN-1 and SE-UWN-2

6. Cumulative Effects Assessment

6.1 Introduction

The SEA Regulations require an assessment of cumulative effects. Cumulative effects are the combined impacts of a single activity, plan or programme or multiple activities, plans or programmes. The individual impacts from a single development may not be significant on their own but when combined with other impacts, those effects could become significant.

The significance of cumulative effects resulting from a range of activities, or multiple incidences of one activity, may vary based on factors such as the nature of the projects proposed and the sensitivity of the receiving communities and environment.

The cumulative effects assessment therefore includes:

- consideration of how different aspects of the South East Marine Plan may interact to cause cumulative effects on a receptor
- how the South East Marine Plan can cause cumulative effects in association with other programmes, plans, policies and projects.

6.2 Potential Cumulative Effects of all Policy Groupings

Table 15 below summarises both the potential positive and negative cumulative effects identified for each SA Topic from the assessment of policies.

The full details of the cumulative effects identified, as well as mitigation, for each of the SA topics in relation to the policy groupings, is outlined in Table 12 in section 13 in Part 3 of the South East SA Report.

Table 15: Summary of significant effects.

SA topic	Associated Policy Groupings	Negative Cumulative Effect	Potential positive cumulative effects
Cultural Heritage	<p>Negative cumulative effects: aggregates cables dredging and disposal infrastructure oil and gas renewables shipping and ports.</p> <p>Positive cumulative effects: seascape and landscape heritage assets.</p>	<p>A number of economic policies have resulted in potential negative cumulative effects. Negative cumulative effects will be dependent on the type and number of developments that come forward, as a result of policies, and their proximity to the archaeological features.</p>	<p>The seascape and landscape policy grouping working in combination with the heritage assets policy grouping could result in positive cumulative effects.</p>
Geology, Substrates and Coastal Processes	<p>Negative cumulative effects: aggregates dredging and disposal co-existence.</p>	<p>Aggregate extraction and dredging and disposal activities have the potential to negatively affect geology, substrates and coastal processes. If a number of aggregate and dredging and disposal developments come forward, from the implementation of these policies, there is potential for adverse effects to occur.</p> <p>The co-existence policy could result in a number of new developments coming forward within the marine plan area. If</p>	<p>N/A</p>

SA topic	Associated Policy Groupings	Negative Cumulative Effect	Potential positive cumulative effects
		multiple developments came forward, that could affect geology, substrates and coastal processes, there is potential for significant negative effects.	
Landscape and Seascape	<p>Negative cumulative effects: aggregates cables infrastructure oil and gas renewables.</p> <p>Positive cumulative effects: seascape and landscape heritage Assets marine protected areas.</p>	A number of economic policies have resulted in potential negative cumulative effects. Negative cumulative effects will be dependent on the type and number of developments that comes forward, as a result of policies, and their proximity to designated sites, local beauty spots and areas considered to be of a high landscape value.	Seascape and landscape policy grouping working in combination with the marine protected areas and heritage assets policy groupings, could result in positive cumulative effects.
Water	<p>Negative cumulative effects: aquaculture co-existence defence fisheries marine litter oil and gas ports and harbours tourism and recreation.</p>	Negative cumulative effects have the potential to arise, as a number of economic policies support developments that could negatively affect water quality. In isolation, these developments may not be significant, but if numerous developments came forward as a result of these policies, there is potential for significant negative effects.	<p>Biodiversity policies have the potential to result in minor positive cumulative effect in combination with other marine litter policies.</p> <p>Similarly, seascape and landscape policies working in combination with marine litter policies have the potential to result in significant positive cumulative effects on marine litter.</p>

SA topic	Associated Policy Groupings	Negative Cumulative Effect	Potential positive cumulative effects
	Positive cumulative effects: biodiversity marine litter seascape and landscape.		
Air Quality	Negative cumulative effects: ports and harbours tourism and recreation.	Ports and harbours and tourism and recreation policies could result in developments that could contribute to air pollution. In isolation, these developments may not be significant, however, if multiple developments from both policies, or just one of the policies, there is potential for significant negative effects.	N/A
Climate	Negative cumulative effects: oil and gas ports and harbours.	Ports and harbours and oil and gas policies could result in developments that could contribute to air pollution. In isolation, these developments may not be significant, however, if multiple developments from both policies, or just one of the policies, there is potential for significant negative effects on climate.	N/A
Communities, health and wellbeing	N/A	N/A	N/A
Economy	Negative cumulative effects:	Negative cumulative effects have the potential to arise, depending the type	N/A

SA topic	Associated Policy Groupings	Negative Cumulative Effect	Potential positive cumulative effects
	aquaculture climate change disturbance invasive non-native species marine litter renewables underwater noise.	<p>and number of policies which may come forward, particularly those that could result in developments that could inhibit economic activity (e.g. air quality restrictions).</p> <p>Similarly, negative cumulative effects have the potential to arise depending on the type and number of developments that come forward as a result of policy implementation and the preference given to economic policies.</p>	
Biodiversity	<p>Negative cumulative effects:</p> access aggregates cables climate change disturbance dredging and disposal fisheries oil and gas ports and harbours tourism and recreation	<p>A number of economic policies have resulted in potential negative cumulative effects on biodiversity. In isolation, these developments may not be significant, but if numerous developments come forward as a result of a single policy or multiple policies, there is potential for significant negative effects on biodiversity.</p> <p>Cumulative effects would also be dependent upon how these policies are implemented and the preference given</p>	<p>A positive cumulative effect has been identified as having the potential to occur on fish and shellfish, in relation to the marine protected areas policy grouping working in combination with the fish and shellfish and policy grouping.</p> <p>A potential significant cumulative positive effect has been identified in relation to the marine protected areas policy grouping working in</p>

SA topic	Associated Policy Groupings	Negative Cumulative Effect	Potential positive cumulative effects
	renewables. Positive cumulative effects: marine protected areas biodiversity fish and shellfish.	to biodiversity policies, and the nature (susceptibility to damage) and spatial extent of the biodiversity in question.	combination with the biodiversity grouping.

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6.1 Potential Cumulative Effects with other programmes, plans, policies and projects

Table 13 within Section 13 of the Part 3 of the South East SA Report presents the relevant international, national and regional plans, policies and strategies which could give rise to potential cumulative effects in combination with the South East Marine Plan.

The majority of the policies and plans reviewed will result in positive cumulative effects. This is because they strengthen environmental protection, for example by reducing greenhouse gas emissions, improving air or water quality, protecting designated sites for nature conservation, landscape or the historic environment. However, there is potential for development to cause negative cumulative effects, particularly where development in adjacent terrestrial or marine areas can act in combination to impact on receptors. There are a number of policies within the South East Marine Plan which do help to mitigate these effects:

- Cumulative Effects Policy SE-CE-1
- Natural Capital Policy SE-NG-1
- Co-existence Policy SE-CO-1
- Cross-boundary considerations Policy SE-CBC-1
- Environmental protection policies
- Economic development (including fisheries) policies.

7. Monitoring of Residual Effects

The SEA Regulations require that the significant environmental effects of plans and programmes be monitored. This intends to allow the early identification of unforeseen adverse effects so that appropriate remedial action can be taken.

Therefore, monitoring undertaken for the South East Marine Plan as part of the SA, and as part of the implementation and monitoring of the adopted South East Marine Plan, should help to:

- monitor the significant effects of the draft South East Marine Plan
- track whether the South East Marine Plan has had any unforeseen effects
- ensure that action can be taken to reduce / offset the significant negative effects of the plan.

The requirements of the SEA Regulations focus on monitoring the significant and unforeseen effects of the Marine Plan. Therefore, the SA monitoring framework should be focused only on monitoring those effects which are significantly negative or uncertain.

Following the consultation period, the MMO will prepare the final South East Marine Plan and the final SA will be prepared alongside this. Any revisions to the Plan at this stage in response to suggested mitigation or consultee comments will be reviewed and the SA amended accordingly. Following this, the residual significant effects will be identified and a monitoring framework for these effects will be proposed.

The South East Marine Plan process will itself include a comprehensive monitoring programme which is focused on the achievement of the plan's objectives. This monitoring programme will enable the MMO to track the success of policies and also to monitor the baseline environmental, economic and social conditions of the marine plan areas. The monitoring also contributes to the three-yearly reporting to parliament, which in turn provides a mechanism for reviewing and amending the plan or individual policies. The intention is that the SA framework will be linked to this where practical.