



# Stage 1 Habitat Regulations Assessment: Screening Report Cumbria Coastal Strategy

Prepared for: Cumbria Coastal Strategy PRG

Issue Number: 2

Date: June 2019

## Origination

<b>Author</b>	Jacobs
<b>Version</b>	2 (Updated HRA following NE/SNH consultation)
<b>Date</b>	June 2019

## Approval

Approved	Date
CCS Project Review Group (PRG)	

## Distribution

Name	For signoff, information, comment
CCC, NE, SNH	

# Contents

Section	Page
<b>1</b>	<b>Description of proposal ..... 1</b>
1.1	Introduction ..... 1
1.2	Strategy overview ..... 1
1.3	Assumptions..... 8
<b>2</b>	<b>The HRA process ..... 9</b>
<b>3</b>	<b>Identifying relevant European sites..... 10</b>
<b>4</b>	<b>European sites requiring assessment ..... 23</b>
<b>5</b>	<b>Conservation objectives..... 30</b>
5.1	Generic conservation objectives for SACs ..... 30
5.2	Generic conservation objectives for SPAs ..... 31
5.3	Conservation objectives for Ramsar sites..... 31
<b>6</b>	<b>Screening assessment ..... 32</b>
<b>7</b>	<b>Conclusions of HRA Screening..... 60</b>
<b>8</b>	<b>References..... 65</b>

## Figures

- 1 Strategy area
- 2a-c Relevant internationally designated nature conservation sites within the strategy area

## Tables

- 1.1 Preferred interventions in each policy unit
- 2.1 HRA stages (EC 2001)
- 3.1 Screening of European sites
- 4.1 European sites requiring assessment
- 6.1 Screening assessment (relevant risks to the Cumbria Coastal Strategy)
- 7.1 European site qualifying features subject to appropriate assessment, following Stage 1

## Annexes

- A Policy interventions (not included in this version. See Appendix B of Appropriate Assessment)
- B Conservation objectives

# 1 Description of proposal

Type of PPP:	Coastal Flood and Erosion Risk Management Strategy
National grid reference:	Cumbria Coast (Arnside (NGR SD455756) to Scottish border, Sark (NGR NY327669)
Site name or reference:	Cumbria Coastal Strategy

## 1.1 Introduction

As part of the development of the Cumbria Coastal Flood and Erosion Risk Management Strategy (the ‘Strategy’), a Habitats Regulations Assessment (HRA) must be undertaken in accordance with The Conservation of Habitats and Species Regulations 2017 (the ‘Habitats Regulations’), to assess the potential effects of the Strategy on the integrity of internationally designated nature conservation sites.

This document presents the results of a screening exercise for likely significant effect, as the first stage (Stage 1) of the HRA of the Strategy proposals.

Where likely significant effects have been identified, either as a result of the Strategy proposals themselves (‘alone’) or where there are cumulative effects with other plans and projects (‘in combination’), these will need to be subject to a subsequent Stage 2 assessment of whether they will result in an adverse effect on the integrity of the relevant sites and their features (an “Appropriate Assessment (AA)”).

A draft template for this HRA Screening Report was shared with Natural England (NE) and Scottish Natural Heritage (SNH) in February 2019. Feedback received from SNH has been incorporated into this revised screening report.

## 1.2 Strategy overview

The North West England and North Wales Shoreline Management Plan 2 (SMP2), was completed in 2010 and reviewed the first version that had been developed 10 years earlier. The SMP2 provides a large-scale assessment of the risks associated with erosion and flooding along coast between Great Orme’s Head in North Wales and the Scottish Border and was produced in line with Defra Shoreline Management Plan Guidance (March 2006). The SMP2 provides a strategic framework for managing and improving coastal management.

The requirement for a more detailed strategy to cover the smaller interacting policy areas of the Cumbrian coast was identified in the SMP2. Coastal strategies form the second tier in the shoreline management planning hierarchy; below the high level non-statutory Shoreline Management Plans and above the local level scheme design documents.

Having a detailed coastal strategy to assess coastal flood and erosion risk will allow infrastructure providers and the coastal protection authorities to comprehensively quantify the risks and associated damages of coastal flooding and erosion and plan long-term future investment.

This Strategy is being led by Cumbria County Council on behalf of the Cumbria Coast Protection Authorities (CPAs).

The coastline of the Strategy area (see Figure 1) extends 420 km and lies within three of the North West England and North Wales Shoreline Management Plan (SMP) sub-cells as follows (see Figure 1.1):

- Sub-cell 11c (part) – Arnside to Hodbarrow Point (Millom, Cumbria) including the Kent, Leven and Duddon estuaries;
- Sub-cell 11d – Hodbarrow Point to St Bees Head including Ravenglass estuary complex; and
- Sub-cell 11e - St Bees Head to Scottish Border including Moricambe Bay and the Eden.

Due to the scale of the Strategy frontage, the sub-cells were further divided within the SMP into Policy Units, for preferred interventions to be identified. The preferred interventions for each Policy Unit are shown in Table 1.1 with further details provided in Annex A.

Figure 1.1: Strategy area

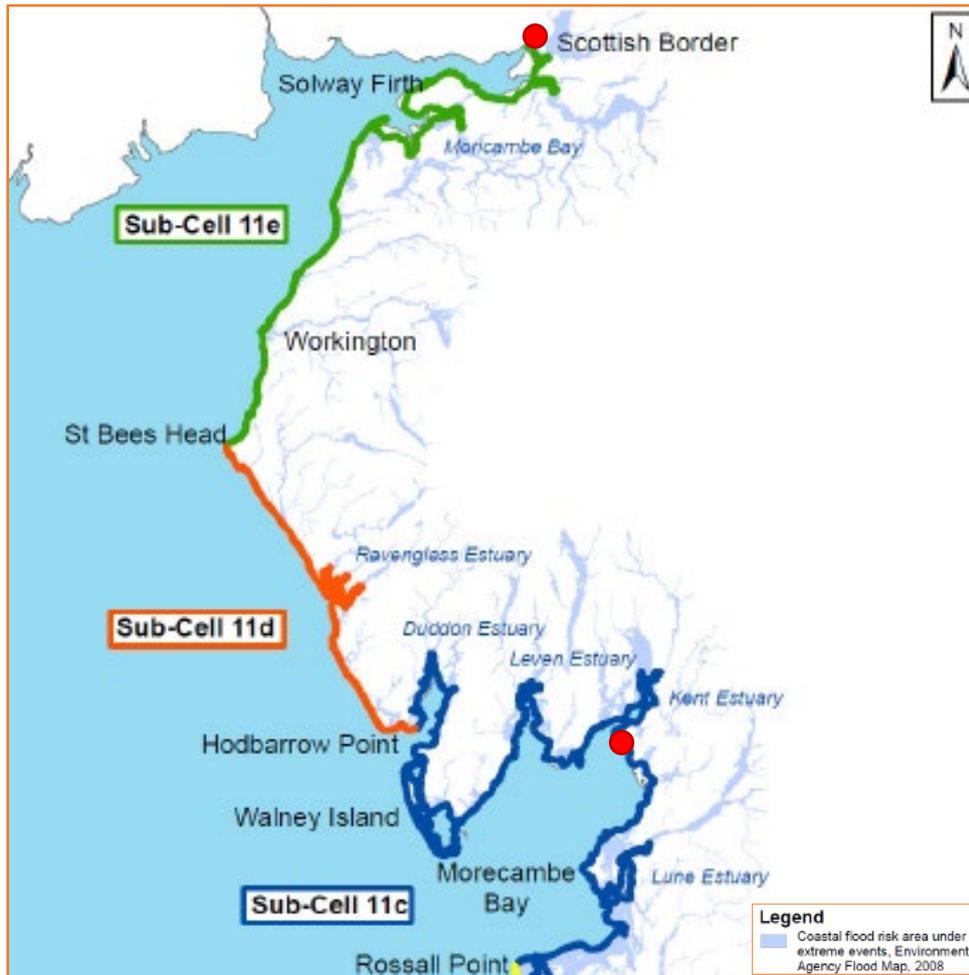


Table 1.1: Preferred Interventions in each Policy Unit (priority units shown in bold)

Policy Area	Policy Unit	Unit Name	Policy Change from SMP	Preferred Strategic Approach
c8 Heald Brow to Humphrey Head	11c 8.4	Meadow to the Kent viaduct (Arnside)	No	Hold the Line: Continue to monitor and maintain coastal defences as necessary. Potential capital works to replace assets when end-of life (20-50 years).
c8 Heald Brow to Humphrey Head	11c 8.5	Kent viaduct to Holme Island	No	Hold the Line: Continue to monitor and maintain coastal defences as necessary. Potential capital works to replace assets when end-of life (20-50 years).
c8 Heald Brow to Humphrey Head	11c 8.6	Holme Island to Humphrey Head (Grange-over-Sands)	No	Hold the line, by continuing to maintain coastal defences and monitor shoreline change.
<b>c9 Kent Estuary</b>	<b>11c 9.1</b>	<b>Kent viaduct to Dick Fell Road (Sandside)</b>	Possibly, subject to further studies	Hold the line, whilst a long term solution is developed. In the short term, Option 3, proactive maintenance of the existing defence, is the recommended approach. This will allow time for an catchment-wide approach to be developed and also for funding to be sought, by extending defence life by 10 to 20 years.  In the longer term, Option 4 (improve existing defences) would provide for the most efficient solution for future management of increased flood risk due to sea level rise, but would be unlikely to attract sufficient funding at the present time. This could include localised habitat creation through a regulated tidal exchange (RTE) (Option 5) if impacts on the designated habitats of Morecambe Bay need to be mitigated or compensated for. A number of further studies are required to confirm the feasibility of regulated tidal exchange for this purpose along the frontage and how it could be incorporated in the long term and there may be other locations in the inner estuary where compensatory habitat could be provided more cost effectively and where there is less infrastructure at risk.
<b>c9 Kent Estuary</b>	<b>11c 9.2</b>	<b>Sandside (Dick Fell Road to Hollins Well Road)</b>	No	Hold the line, whilst a long term solution is developed. In the short term, Option 3, proactive maintenance of the existing defence, is the recommended approach. This will allow time for an catchment-wide approach to be developed and also for funding to be sought, by extending defence life by 10 to 20 years.  There are several alternative approaches to Hold the line in the long term, although the most suitable approach technical approach is to provide a formal revetment and crest wall (either through Option 4, modifying the existing structures or Option 5, constructing a new revetment) when justified due to increasing risk from climate change or channel migration. In some parts of the frontage that may need to be higher than the current defence levels to appropriately manage risks from flooding in the future.
<b>c9 Kent Estuary</b>	<b>11c 9.3.1</b>	<b>11c 9.3.1 - Hollins Well Road north to Levens Bridge (east bank)</b>	Possibly, subject to further studies	Hold the line, whilst a long term solution is developed. In the short term, Option 3, proactive maintenance of the existing defence, is the recommended approach. This will allow time for an catchment-wide approach to be developed and also for funding to be sought, by extending defence life by 10 to 20 years.  In the longer term, Option 4 (improve existing defences) would provide for the most efficient solution for future management of increased flood risk due to sea level rise, but would be unlikely to attract sufficient funding at the present time. This could include localised habitat creation through managed realignment of embankments (Option 6) if impacts on the designated habitats of Morecambe Bay need to be mitigated or compensated for. A number of further studies are required to confirm the feasibility of MR within this unit.
<b>c9 Kent Estuary</b>	<b>11c 9.3.2</b>	<b>11c 9.3.2 - Levens Bridge (east bank) &amp; Levens Bridge to Kent viaduct (west bank)</b>	Possibly, subject to further studies	Hold the line, whilst a long term solution is developed. In the short term, Option 3, proactive maintenance of the existing defence, is the recommended approach. This will allow time for an catchment-wide approach to be developed and also for funding to be sought, by extending defence life by 10 to 20 years.  In the longer term, Option 4 (improve existing defences) would provide for the most efficient solution for future management of increased flood risk due to sea level rise, but would be unlikely to attract sufficient funding at the present time. This could include localised habitat creation through managed realignment of embankments (Option 6) if impacts on the designated habitats of Morecambe Bay need to be mitigated or compensated for. A number of further studies are required to confirm the feasibility of MR within this unit.
<b>c10 Humphrey Head to Cark</b>	<b>11c 10.2</b>	<b>Humphrey Head to Cowpren Point</b>	Possibly to take account of saline lagoon scheme	The preferred approach in the short term is to continue to hold the line through proactive management (Option 3). This will allow time for longer term options, such as partial realignment of the defences, to be considered. It would also enable the success of the proposed saline lagoon scheme to be appraised, as there may be potential to extend the scheme.
c11 Outer Leven Estuary	11c 11.3	Canal Foot	No	Hold the line - repair or upgrade existing defences to consistently manage flood risk to south Ulverston.
<b>c11 Outer Leven Estuary</b>	<b>11c 11.4</b>	<b>Glaxo Factory Site (south)</b>	Dependent on development of GSK site	In the short term, a no active intervention approach remains appropriate, subject to further monitoring of the situation. The long term strategy approach depends upon future plans for the hinterland. Currently a slag (spoil) bank fronting the existing defences provides protection, but this is showing signs of erosion. Further erosion could result in a breach and flooding of the hinterland, with potential to have wider reaching effects. If the former GSK is developed, there could be a need to change policy to hold the line and under a hold the line policy the preferred approach would be to construct a new revetment or seawall (Option 2), subject to funding.
c11 Outer Leven Estuary	11c 11.5	Sandhall to Conishead Priory	No	Consider need for future set-back defences to wider south Ulverston flood cell in medium or long term.
c12 Leven Estuary	11c 12.1	Leven viaduct to Haverthwaite (left bank) and Haverthwaite to Greenodd (right bank)	Possible boundary change	The long term strategy approach is to move towards a more naturally functioning coastline. In the short term this would involve reactive maintenance of defences, whilst looking for opportunities to realign or remove defences to enable habitats creation and reduce the need to continued investment in their maintenance.
c12 Leven Estuary	11c 12.2	Greenodd to Barrow End Rocks (A590)	Possible boundary change	Hold the Line - into the long term.
<b>c12 Leven Estuary</b>	<b>11c 12.3.1</b>	<b>Old Railway Embankment</b>	New unit (new policy)	Hold the Line - in the short term Option 3 (improving existing defences) could be sufficient whilst a funding strategy and a longer term solution are developed. To provide long term protection, new defences will need to be constructed. This could either be along existing alignments (Option 4), most likely through construction of a rock revetment, or involve setback defences, probably in the form of a rock revetment (Option 5), although this would require further study to assess potential impacts on rest of estuary, particularly the potential for worsening erosion risk at the railway viaduct and the A590 Greenodd embankment.
<b>c12 Leven Estuary</b>	<b>11c 12.3</b>	<b>Barrow End Rocks (A590) to Leven viaduct</b>	New unit boundary. Possible change to NAI in ST/MT	As there are limited assets at risk a Do nothing option could be a suitable approach for this frontage from the short term. Due to the location and size, impacts on the tidal prism and potential for significant impacts elsewhere in the estuary are lower risk but should be investigated alongside recommended actions for 11c12.1

Policy Area	Policy Unit	Unit Name	Policy Change from SMP	Preferred Strategic Approach
c13 Bardsea to Piel Island	11c 13.2	Newbiggin to Rampside	Possibly - change in MT to HTL	Hold the Line - in the short term Option 3 (proactive management) could be sufficient whilst a funding strategy and a longer term solution are developed. To provide long term protection, the existing defences would need to be improved through reinforcing with rock armour or concrete overlays (Option 4). It may also be necessary to increase the crest level (Option 5). Although the SMP consider the possibility of realigning the road, the length or detour required is unlikely to be more cost-effective than improving the current defences.  There is the possibility of a small scale regulated tidal exchange scheme, to provide compensatory habitat, but this would require further study.
c13 Bardsea to Piel Island	11c 13.3	Rampside	Possible change to HTL in ST	In the short to medium term, the shoreline is anticipated to remain sheltered by the fringing saltmarsh, the Foulney embankment and Roa Island causeway, therefore no works are likely to be needed apart from minor repairs. No Active intervention is therefore the preferred approach, although risks will need to be monitored. In the long term there may be a need to improve defences, through raising defences (Option 3). This could be in the form of low wall slightly set back from the current defences and so not impacting on the designated sites. but will depend upon the future management of Roa Island, Shorelink (Roa Island causeway) and Foulney Embankment.
c13 Bardsea to Piel Island	11c 13.4	Roa Island	No	Hold the line - there are various options (options 3 or 4 for the shorelink and 5 for defences on the island) that would maintain the standard of defence into the long term, but further studies are required, particularly regarding defence of the Shorelink, due to foundation issues, and the impact of the deterioration of the Foulney causeway resulting in additional exposure and habitat changes. Therefore in the immediate term, ongoing maintenance of the defences would be required until a decision can be made on the best approach in the medium to longer term.
c14 Walney Island	(11c14.7 part)	Strategy Benefit Area 2: West Shore park	No	Since the Walney Island Strategy, new rock armour defence has been installed along the frontage. This defence is intended to be temporary and is due to be removed after 20 years, therefore the approach is in line with the current Walney Island Strategy preferred option and SMP Policy of Managed realignment. Continuing to maintain the defence here in the short term may, however, be affected by decisions along adjacent frontages to the south. It is assumed that this defence will be maintained over the 20 year period - concerns have been raised regarding design - therefore monitoring may indicate a need for redesigning within the 20 years.
c14 Walney Island	(11c14.7 part)	Strategy Benefit Area 3: Earnse Point to Walk Haw Scar	Yes	Recent beach monitoring and asset inspection data indicate that although there are local fluctuations in beach level at the toe, the sloping revetment is generally in fair state, such that <b>ongoing maintenance</b> could be sufficient to sustain it for a number of years, beyond the No active intervention approach. Subject to funding being available, this could be a more viable short term option than simply allowing the current defence to fail, which could have an impact on both the viability of the fishtail groyne at Earnse Point and temporary defences at West Shore Park. Once defences at West Shore Park are removed, then a more feasible realignment of the coast may be achieved, by allowing erosion and retreat of the larger frontage.
c14 Walney Island	11c14.5, 11c14.2 (part), 11c14.1 (part)	Strategy Benefit Area 5: Nanny Point Scar to Hillock Whins (unit 5) and Biggar to Tummer Hill (unit 8)	Yes	Along Unit 8, given the current condition of defences along this stretch and low exposure conditions, Do minimum is likely to sustain defences for some time. Any increase in risk and the acceptance of risk will need to be reviewed on a regular basis.  Along Unit 5, the recent asset inspection indicates that the current defences are already being overtopped, with retreat of the cliffs having occurred behind them. The Walney Strategy proposed that the Do minimum option in Unit 5 should include creation of a rock stockpile to be used for maintaining and repairing the defences as and when failures occur. For this option to remain viable the storm damage that has occurred since the strategy needs to be repaired.
c14 Walney Island	11c14.4	Strategy Benefit Area 6: Hillock Whins to Hare Hill	Yes	Since the Walney Island Strategy, there has been storm erosion of historical landfill sites. There have been recent works along this frontage undertaken by Cumbria County Council (March and April 2018 and ongoing) that include reprofiling and capping of the bund with clay. Cumbria County Council are currently seeking a longer term permanent solution to the problem, to mitigate the impacts of coastal erosion along the frontage, beyond the current strategy of reactive maintenance. The first two phases are due to be completed by winter 2018 to 2019. The outcome is likely to require a revision of the preferred strategy option, reverting to the existing SMP2 policy for this frontage of Hold the line.
c14 Walney Island	11c14.2 (part)	Strategy Benefit Area 8: Vickerstown and North Scale	Yes	Given the risk of coastal flooding and erosion to the main link road, the current strategy is questioned. Given the low exposure conditions along the frontage continued maintenance is likely to be sufficient to hold the line for some time, with possible consideration of temporary flood defences as an alternative to raising the crest level. This would allow time for consideration of potential funding streams to support continued maintenance or future raising of the existing defences.
c15 Walney Channel (mainland)	11c 15.2	Westfield Point to Hindpool (Barrow in Furness)	No	Hold the line - continue to maintain existing defences.
c16 Duddon Estuary	11c 16.2	Askam-in-Furness	Possibly boundary change to include sewage works	Hold the line - along much of the frontage works are unlikely to be required in the short to medium term, depending upon future rates of erosion, as properties are generally set back from the shoreline. Defences at Marsh Lane will require continued maintenance and there may be a need to extend defences if outflanking becomes more of an issue.
c16 Duddon Estuary	11c 16.3	Askam to Dunnerholme	Possibly boundary change to exclude sewage works	There is a stretch of railway line which may become increasingly exposed if erosion continues - therefore works to maintain the embankment may be required. Minimal erosion is predicted for the southern side of Dunnerholme and therefore a do nothing approach remains appropriate. However, some ongoing erosion is predicted at the Askam-in-Furness caravan park frontage. The likely solution is for adaptation in the longer term through roll back or relocation of this park. However, in order for relocation to be planned some short term ongoing maintenance of the frontage may be required (Do minimum).
c16 Duddon Estuary	11c 16.4	Dunnerholme to Sand Side	No	Hold the current defence line - There are various approaches possible but the preferred approach is to improve existing defences -along much of the length this may be simply raising crest levels, but where erosion is an issue would involve adding erosion protection (probably rock) along the toe of the embankment (Option 3). This option would enhance the flood protection resilience of the railway embankment and potentially provide long term protection to the frontage. Should erosion become more severe and the embankment shows signs of critical failure, there may be a longer term need to construct a new structure (probably rock) (Option 4), which would have a larger footprint than Option 3, but would provide more substantial protection.
c16 Duddon Estuary	11c 16.5	Kirkby-in-Furness	No	The railway line runs parallel to the shoreline along the length of 11c16.5 and at some locations the width of fronting land between the shoreline and the railway line is extremely narrow. Maintaining existing defences is unlikely to be effective for many years, therefore a more sustainable solution would be to improve the defences (Option 4) or construct new embankments (Option 5). Both options would involve a larger defence footprint. The final decision would be made by NR as they are responsible for the embankments within this unit.
c16 Duddon Estuary	11c 16.7	Galloper Pool to viaduct	No	Hold the line by continuing to maintain the defences to the railway.
c16 Duddon Estuary	11c 16.8	Duddon Estuary (inner)	No	Reactive patch and repair (Do Minimum) may be sufficient, given the longer term intent for managed realignment. This would allow time for further investigations. MR options require further studies to consider viable locations and potential impacts on the wider estuary.
c16 Duddon Estuary	11c 16.9	Millom Marshes	No	Reactive patch and repair (Do Minimum) may be sufficient, given the longer term intent for managed realignment. This would allow time for further investigations. MR options require further studies to consider viable locations and potential impacts on the wider estuary.
c16 Duddon Estuary	11c 16.10.1	Millom (old railway embankment)	New unit - HTL recommended	To manage coastal flood risk to the wider flood area of South Millom, the preferred approach is to formalise the existing high ground along the line of the former railway embankment as a coastal defence, Option 2 in the short term and consider a SMP Policy change to HTL. In the longer term the defence could be improved if necessary (Option 3).
c16 Duddon Estuary	11c 16.10	Millom Iron Works (industrial area)	Possible new policy unit (see above)	Assuming a new policy unit is created for 11c16.10.1, the preferred approach for flood and coastal risk management is for do nothing, recognising planned private development at Port Millom subject to consents and whilst monitoring levels of risk from coastal erosion and flooding.

Policy Area	Policy Unit	Unit Name	Policy Change from SMP	Preferred Strategic Approach
<b>c16 Duddon Estuary</b>	<b>11c 16.11</b>	<b>Hodbarrow Mains</b>	No	The preferred approach in Do Nothing in the short term, but undertaking studies including flood risk modelling, to improve understanding of flood links to the wider South Millom area. This may identify a need to construct set back flood embankments (Option 4) to manage flood risk to flood assets in Millom.
<b>d1 Hodbarrow Point to Selker</b>	<b>11d 1.1</b>	<b>Hodbarrow Point to Haverigg</b>	Possibly defer MR until LT	Given the current good condition and the substantial nature of the armouring the defences may be sustainable beyond 50 years with only minor maintenance (Option 2 Do Minimum) and therefore the need for realignment to a set back defence could potentially be deferred into the 50 to 100 year epoch.
d1 Hodbarrow Point to Selker	11d 1.2	Haverigg	Possible change to MR in LT - depending on risk?	Hold the line - maintain existing defences, reviewing standard of protection provided as part of Haverigg and Millom flood risk modelling study to determine timing of possible future raising of defences.
d1 Hodbarrow Point to Selker	11d 1.4	Silecroft (Hartress Hill)	Possible change to MR in LT - depending on risk?	Hold the line, subject to defences causing no adverse effects on sediment movement or coastal processes and sustainable to do - there is currently no justification for changing the policy within this unit as there is no substantive evidence that current defences are significantly impacting adjacent sites.
<b>d2 Selker to Eskmeals</b>	<b>11d 2.2</b>	<b>Stubb Place to Eskmeals Dunes</b>	Possible change in ST to HTL	In the short term, the preferred approach to holding the existing line is Option 3, which will improve the existing defence (along its current alignment), through reusing the Pendine blocks. This should extend the life of defences 5 to 10 years, whilst medium or long term managed realignment adaptation approaches are investigated. Along the stretch of coast north of the MoD boundary to Eskmeals Range it is assumed that QinetiQ will continue to manage risk to the Eskmeals Range, through reprofiling of the shingle ridge when required, for example, following storm damage.
d3 Ravenglass Estuary Complex	11d 3.2	Ravenglass	No	Hold the line - maintain existing defences, with refurbishments within current footprints to avoid impacts on the designated sites. Improvements or modifications to current defences are likely to require consent from Natural England, LDNPA and HE and may require a habitat regulations assessment (HRA) and AA (Appropriate Assessment) to appraise possible effects on the designations within the estuary.
<b>d5 Seascale to St Bees</b>	<b>11d 5.1</b>	<b>Seascale</b>	No	Hold the current defence line - in the short term a do-minimum approach to Hold the line (Option 2) is all that can be economically justified. This would not sustain protection into the long term and so further investigations are needed to better identify the risks related to defence failure and timing of economic impacts before Option 3, Maintain through proactive maintenance (Option 3) or one of the improve options could be identified as preferred.
<b>d5 Seascale to St Bees</b>	<b>11d 5.2</b>	<b>Seascale to Sellafield</b>	Consider change to HTL to be consistent with 11e	In the short term, Option 3 (improve existing defences) should be sufficient to extend the life of the existing embankment. However, if the risk of erosion increases more substantial measures, e.g. extending the length of existing defences, would be required, i.e. Option 2 (improve through constructing new revetment or seawall).
<b>d5 Seascale to St Bees</b>	<b>11d 5.3</b>	<b>Sellafield</b>	Possible boundary change if Moorside site progresses	Hold the current defence line - in the short and medium term proactive repair and maintenance of the existing rock revetment (Option 3), which currently protects the railway line, should be sufficient to provide protection beyond 50 years. This would not protect properties that lie along the seaward toe of the railway embankment and there is unlikely to be any funding available for their protection.  In the long term, there may be a need to improve defences, with construction of a new revetment the preferred approach (Option 6). The timing of this may depend on several factors, in particular future development of the Moorside site (located in unit 11d5.4) and long term plans for the coastal railway.
<b>d5 Seascale to St Bees</b>	<b>11d 5.4</b>	<b>Sellafield to Braystones</b>	Consider change to HTL to be consistent with 11e	Hold the current defence line at the railway. Currently the railway line is not at high risk, therefore the preferred approach in the short term is to continue to monitor and undertake proactive maintenance (option 3) as required.  Should the beach deteriorate (not anticipated within next 20 years), more substantial works could be required to continue to protect the railway. Constructing a new rock armour revetment, is likely to be most cost effective solution, in the long term (Option 5a), but the decision will rest with Network Rail, who are responsible for maintaining defences along this frontage. These measures will not protect the beach front properties.  The strategy has considered the justification for defending beach front properties, Option 5b, but the additional cost over Option 5a and significant recreational and amenity impacts along with potential wider environmental impacts means that such an option could not be justified and it is unlikely that any national funding could be sought to provide defences here.
<b>d5 Seascale to St Bees</b>	<b>11d 5.5</b>	<b>Braystones, Nethertown and Couderton</b>	Consider change to HTL to be consistent with 11e	Hold the current defence line at the railway - currently the railway line is not at high risk, therefore the preferred approach in the short term is to continue to monitor and undertake proactive maintenance (option 3) as required.  Should the beach deteriorate (not anticipated within next 20 years), more substantial works could be required to continue to protect the railway. Constructing a new rock armour revetment, is likely to be most cost effective solution, in the long term (Option 5a). The final decision will rest with Network Rail, who are responsible for maintaining defences along this frontage. These measures will not protect the beach front properties.  The strategy has considered the justification for defending beach front properties, Option 5b, but the additional cost over Option 5a and significant recreational and amenity impacts along with potential wider environmental impacts means that such an option could not be justified and it is unlikely that any national funding could be sought to provide defences here.
<b>d5 Seascale to St Bees</b>	<b>11d 5.6</b>	<b>Couderton to Seamiill</b>	Consider change to HTL to be consistent with 11e	Hold the current defence line - currently the railway line is not at high risk, therefore the preferred approach in the short term is to continue to monitor and undertake proactive maintenance (option 3) as required.  Should the beach deteriorate (not anticipated within next 20 years), more substantial works could be required to continue to protect the railway. Constructing a new rock armour revetment, is likely to be most cost effective solution, in the long term (Option 6); this may involve both replacing existing defences and building defences along currently undefended stretches. The final decision will rest with Network Rail, who are responsible for maintaining defences along this frontage.
<b>d5 Seascale to St Bees</b>	<b>11d 5.7</b>	<b>Seamiill to Pow Beck</b>	No	Hold the current defence line - currently the railway line is not at high risk, therefore the preferred approach is for proactive maintenance (Option 3A), which should be sufficient to provide protection to the railway and properties beyond 50 years. This option would involve maintaining the existing defences until they reach the end of their effective life span then replace them in their current locations, with Sea Mill defences replaced in front of the car park rather than constructing new defences adjacent to the railway.  This would allow time for development of a long term solution of improving the defence by constructing a new revetment, with rock armour likely to be most cost effective solution, in the long term (Option 3E).
<b>d6 St Bees</b>	<b>11d 6.2</b>	<b>St Bees Promenade</b>	No	Hold the existing defence line in the short to medium term (50 years) - the preferred approach is for works to prolong the life of the promenade, such as additional rock toe works, and possibly maintaining the existing groynes (Option 4 or 5). Toe works may need to extend south to address outflanking at the transition with 11d6.1.  In the long term (beyond 50 years) it is likely to become increasingly difficult to retain a beach and more substantial works would be required to hold the promenade in its existing position. The preferred strategy is therefore to realign the defences to a set-back position (Option 6). The position would need to be determined through additional studies.
e1 St Bees Head to Whitehaven	11e 1.2	Saltom Pit	Possibly - further to further studies	Hold the line - to protect of the Scheduled Monument of Saltom Pit for as long as technically and economically viable.  Land stability studies in the short term to inform viability of the short and medium term HTL policy and potentially bring forward the long term no active intervention policy.
<b>e1 St Bees Head to Whitehaven</b>	<b>11e 1.4</b>	<b>Whitehaven South Beach</b>	Possible - depends on contamination risk	The approach from the medium term depends upon the outcome of studies to investigate potential contamination risks from erosion of industrial spoil. Assuming there is no change in requirement to introduce defences in the immediate future to prevent further erosion, then erosion will be allowed to continue and works will be limited to maintaining the harbour arm in the adjacent policy unit to ensure its integrity. If it is found that there is a long term need to Hold the line to prevent

Policy Area	Policy Unit	Unit Name	Policy Change from SMP	Preferred Strategic Approach
				erosion of contaminated landfill, and there are no other options for its removal, then a number of options to HTL should be reconsidered at that time to identify the most suitable approach to prevent contamination but perhaps also to support any other regeneration proposals in the area.
e2 Whitehaven To Workington	11e 2.1	Whitehaven Harbour and north beach	No	Hold the line - by maintaining and repairing harbour walls and gates.
e2 Whitehaven To Workington	11e 2.2	Bransty to Parton	No	Hold the current defence line - In the ST, modifying the existing structure (toe protection, raising, repairing) (Option 3, 4 or 5) may be adequate for some years. Options 4 and 5 would involve a larger defence footprint, with rock or rock gabions placed in front of the existing defence. In the MT/LT it is likely that there will be a need to construct a new defence. That might take the form of a replacement seawall (Option 6), or alternatively a seaward rock berm may offer a much more cost effective and less disruptive option. The decision regarding which option will depend upon Network Rail, as they currently are responsible for defences along this unit. Given the exposed location of the railway along this frontage, realignment could be considered in the future. If this is a possibility beyond the next 10 to 20 years, then a more suitable approach would be to continue to carry out remedial works on the current defences. In addition to proactive maintenance and timely patch and repairs to the masonry, it is also possible that additional toe protection may be required, which would most probably take the form of rock armour.
e2 Whitehaven To Workington	11e 2.3	Parton	No	Hold the current defence line - In the ST, modifying the existing structure (toe protection, raising, repairing) (Option 3, 4 or 5) may be adequate for some years. Under this option, the possibility of reducing flood risk through the railway arches should be considered. Options 4 and 5 would involve a larger defence footprint, with rock or rock gabions placed in front of the existing defence. In the MT/LT it is likely that there will be a need to construct a new defence. That might take the form of a replacement seawall (Option 6), or alternatively a seaward rock berm may offer a much more cost effective and less disruptive option. The decision regarding which option will depend upon Network Rail, as they currently are responsible for defences along much of this unit. At Parton, there needs to be joint working between Network Rail and the community in order to find the best solution to protect the railway and the village from flooding. Given the exposed location of the railway along this frontage, realignment could be considered in the future. If this is a possibility beyond the next 10 to 20 years, then a more suitable approach would be to continue to carry out remedial works on the current defences. In addition to proactive maintenance and timely patch and repairs to the masonry, it is also possible that additional toe protection may be required, which would most probably take the form of rock armour. Even with realignment, there would remain a flood risk to people and property at Parton, but this might be addressed through a setback seawall.
e2 Whitehaven To Workington	11e 2.4	Parton to Harrington Parks	No	To Hold the line to maintain the railway in the long term, the preferred approach is to provide a formal rock revetment (Option 6). It is recommended that this is done well in advance of the risk to the railway becoming critical, which it possibly already is in places. However, the decision regarding the approach will depend upon Network Rail, as they currently are responsible for defences along much of this unit.
e2 Whitehaven To Workington	11e 2.5	Harrington Parks to Harrington Harbour	Possible - depends on contamination risk	The approach from the medium term depends upon the outcome of studies to investigate potential contamination risks from erosion of the former industrial sites. If there is a long term need to Hold the line for large parts of this policy unit, then the most suitable technical approach is to provide a formal rock revetment both along the currently undefended length and over the existing structures (option 5/6). Assuming that the contamination risk is low, the recommended approach here is to continue to maintain defences through pro-active management (Option 3) and monitor erosion to establish if other assets (for example the railway line and Harrington Harbour) might become at risk and revisit policy to intervene if necessary in the medium or long term.
e2 Whitehaven To Workington	11e 2.6	Harrington Harbour	No	Hold the line - the socio-economic justification of the SMP2 policy to continue to maintain the existing defences will be enhanced by any future regeneration of the area.
e2 Whitehaven To Workington	11e 2.7	Harrington to Steel Works Site	No	Hold the current line, before risk to railway become critical, enabling a buffer to be created. The preferred approach to to provide a formal rock revetment along the artificial shoreline of mine waste (slag) to prevent any further erosion (Option 2). Any final decision will be depend upon Network Rail, as their assets are primarily at risk.
e2 Whitehaven To Workington	11e 2.8	Steel Works Site	Possible boundary change	Hold the line - the preferred approach (which includes part of 11e2.9) is to construct a formal rock revetment along the undefended lengths of this policy unit where there is a risk to assets, and to replace the existing defences, which are inadequate, with a similar design (Option 2). See above for southern part of this unit.
e2 Whitehaven To Workington	11e 2.9	Steel Works to The Howe	Possible boundary change	Unless a contamination risk is identified, then the preferred approach would be to stop any maintenance of current structures and consider reuse of materials elsewhere. This needs to take account of managing risk to the development site in 11e2.8, but this should be considered as part of a recommended boundary change.  If there are contaminant risks due to erosion of the quarrying site, then a further assessment of potential options and a review of the SMP policy would need to be considered ahead of implementing measures to Hold the line.
e2 Whitehaven To Workington	11e 2.10	The Howe to Workington Harbour south breakwater	Possible depending on contamination risk	Unless a contamination risk is identified, then the preferred approach would be to stop any maintenance of current structures and consider reuse of materials elsewhere. Some works to the harbour arm may however be required to ensure its stability and limit any erosion and overtopping risks - this should be considered as part of 11e2.11.  If there are contaminant risks identified, then a further assessment of potential options and a review of the SMP policy would need to be considered ahead of implementing measures to Hold the line.
e2 Whitehaven To Workington	11e 2.11	Workington Harbour	No	Hold the line - maintain and refurbish or upgrade defences when required.
e3 Workington to Maryport	11e 3.1	Workington Harbour to Siddick	Possible - depends on contamination risk	The approach from the medium term depends upon the outcome of studies to investigate potential contamination risks from erosion of the former industrial sites. Based on existing assets (excluding contamination) at risk there is insufficient justification for contributions from national FCERM funding (BCR <1). If there is a long term need and funding available to Hold the line for large parts of this policy unit (due to contamination or regeneration), then the most suitable technical approach is to replace many of the existing defences with formal rock revetment (option 4). If there is a need to maintain protection in places along the current line for only the next 10 to 20 years, then subject to funding the most suitable approach would maintenance and remedial works on the current defences but along much of the frontage there would need to be introduction of additional rock to bolster cliff protection and low tech solutions such as gabions to provide some temporary resistance (Option 2).
e3 Workington to Maryport	11e 3.2	Siddick to Risehow	No	Hold the current defence line - There are various approaches possible but the preferred approach is to provide a formal rock revetment (Option 5A and 6B). This may however need to be higher than the current low bank level to appropriately manage risks from wave overtopping and flooding in the future. It is possible that a phased approach could be applicable, addressing areas of concern as they occur. From the short term, works will be required to maintain the existing defences (Option 3A and 3B) to allow time for schemes and funding to be developed for the longer term solutions.
e3 Workington to Maryport	11e 3.4	Maryport Harbour and Marina	No	Hold the line - continue to maintain the defences and repair as necessary. Monitor risk after the construction of the refurbished outfall groyne (ongoing at time of strategy).
e4 Maryport to Dubmill Point	11e 4.1	Maryport Harbour to Roman Fort	No	Hold the line - continue to maintain the defences and repair as necessary.
e4 Maryport to Dubmill Point	11e 4.2	Roman Fort to Bank End	Possible extension of HTL	Hold the line in short term, with do minimum approach. Consideration of a policy change for extending HTL into the medium term, due to importance of the promenade as part of English coastal path and cycleway, subject to funding and SMP change process.
e4 Maryport to Dubmill Point	11e 4.3	Maryport Golf Course to Allonby		In the short term, the preferred approach is to do minimum (Option 2), which will involve reactive works where formal defences currently exist. This should allow time for medium or long term managed realignment adaptation approaches to be investigated and implemented.
e4 Maryport to Dubmill Point	11e 4.4	Allonby	No	Do minimum - there are no formal defences present. The dunes and wide shingle beach currently provide sufficient protection to Allonby; whilst this remains the case no intervention is required and the preferred approach is to simply

Policy Area	Policy Unit	Unit Name	Policy Change from SMP	Preferred Strategic Approach
				monitor the situation. Should the beach start to reduce in size in the future, works will be required to manage risks to Allonby. Initially, small scale or low cost measures to slow erosion of the dunes (Option 4) and retain them as the primary protection, may be sufficient. If erosion is more extensive, more substantial structures could be considered, particularly those that might help retain a beach.
e4 Maryport to Dubmill Point	11e 4.5	Allonby to Seacroft Farm	Boundary change, with policy change to MR to allow for part to HTL in ST	Managed realignment - at the southern end of the frontage, the dune and beach provide sufficient protection; whilst this remain the case no intervention is required and the preferred approach is to monitor the situation. Along the northern 400m stretch, where the highway and UU assets lies close to the shore, the preferred approach would be for localised works to temporarily bolster existing defences, such as rock armour (Option 2) or rock gabions (Option 3), whilst a longer term solution for this and adjacent units is considered. This could involve extension of the defences at Oldkiln.
e4 Maryport to Dubmill Point	11e 4.6	Seacroft Farm to Dubmill Point	Boundary change to include part of e4.5	In the short term, the preferred approach to holding the existing line is Option 4 which will improve the existing defence (along its current alignment), through reusing the existing limestone blocks (and new material) to construct a new revetment. This should extend the life of defences 5 to 10 years, whilst medium or long term managed realignment adaptation approaches are investigated.
e5 Dubmill Point to Silloth	11e 5.1	Dubmill Point to Silloth	Possible change to ST policy to HTL	In the short term, the preferred approach to holding the existing line is Option 4 which will improve defence (along its current alignment), through construction of a new revetment.
e6 Silloth to The Grune	11e 6.1	Silloth Harbour	No	Hold the line by maintaining and refurbishing defences within current footprints.
e6 Silloth to The Grune	11e 6.2	Silloth to Skinburness (open coast)	No	Hold the current defence line - In the short term (5 years) this is likely to involve patch and repair (Option 2) or more proactive management (Option 3), with no increase in footprint. In longer term, works may be required to the toe if the low water channel continue to move landwards. This would be subject to funding and the precise nature of works would be for scheme appraisal stage. If beaches deteriorate the preferred approach, as it would provide the greater chance of realising wider benefits for the community, would be to improve the existing timber groynes or construct new rock groynes to retain a beach (Option 6). Some renourishment is likely to be required as part of this.
e7 Moricambe Bay	11e 7.1	Skinburness (east)	No	Hold the line by maintaining and refurbishing defences within current footprints.
e7 Moricambe Bay	11e 7.2	Skinburness to Wath Farm	No	Hold the line in short term by maintaining and refurbishing defences within current footprints. Monitor changes to extents of marsh and intertidal areas to allow future assessment of the impacts of the existing defence on natural behaviour of the marsh and consider options for future realignment.
e7 Moricambe Bay	11e 7.3	Wath Farm to Saltcoates	No	No active intervention - there are no formal defences on the frontage, with the wide marsh giving natural protection. Environmental opportunities under the MR policy could allow potential for habitat enhancements here to mitigate impacts of defences elsewhere in the designated site.
e7 Moricambe Bay	11e 7.4	Newton Marsh	No	No active intervention - there are no formal defences on the frontage, with the wide marsh giving natural protection. Environmental opportunities under the MR policy could allow potential for habitat enhancements here to mitigate impacts of defences elsewhere in the designated site.
e7 Moricambe Bay	11e 7.5	Newton Marsh to Anthorn including Wampool to NTL	No	Managed realignment through natural defence management - consider opportunities to allow natural expansion of the saltmarsh alongside increasing the flood resilience of the road in future.
e7 Moricambe Bay	11e 7.6	Anthorn	No	Hold the line through natural defence management - there are no formal defences present but the SMP policy allowed for the potential need to introduce defences if the narrow marsh protecting the road and adjacent properties were eroded. If the erosion risk changes, enhancement of the marsh through "Green" low cost shoreline stabilisation techniques should be considered first.
e7 Moricambe Bay	11e 7.7	Anthorn to Cardurnock	No	Managed realignment - there are no formal flood defences present along this coast, but earth embankments are present and for much of this stretch the road is on slightly raised ground. - consider opportunities to allow natural expansion of the saltmarsh alongside increasing the flood resilience of the road in future.
e8 Cardurnock to Scottish Border	11e 8.1	Cardurnock to Bowness-on-Solway	No	Managed realignment - there are no formal flood defences present along this coast, but earth embankments are present. Consider opportunities to allow natural expansion of the saltmarsh alongside increasing the flood resilience of the road in future.
e8 Cardurnock to Scottish Border	11e 8.2	Bowness-on-Solway	Yes to HTL	Hold the current defence line - In the short term (5 years) this is likely to involve patch and repair, with no increase in footprint. In longer term, works may be required to the toe if the low water channel continue to move landwards. This would be subject to funding and the precise nature of works would be for scheme appraisal stage. It is most likely that it will involve either shoreface works to bolster existing defences (Options 4 and 5) or a new larger structure (Option 7). Both of which may encroach directly on foreshore, but would not affect longshore transport. There may also be a need to extend the defence eastwards alongshore to provide protection to UU assets and coastal road in 11e8.3
e8 Cardurnock to Scottish Border	11e 8.3	Bowness-on-Solway to Drumburgh	Yes - change in boundary	Managed realignment - there may be a need to move the SMP boundary with 11e 8.2 to the east to include protection to the coastal road and UU assets. Green solutions and natural defence management to be considered if erosion protection is required to the road.
e8 Cardurnock to Scottish Border	11e 8.4	Drumburgh to Dykesfield	No	Managed realignment - manage risks due to increasing frequency of flooding to coastal road with warning signage. Consider green solutions to erosion protection and enhancement of the natural protection provided by the marsh alongside potential environmental enhancements to create more wetland.
e8 Cardurnock to Scottish Border	11e 8.5	Dykesfield to Kingmoor (Eden NTL)	No	Managed realignment - no formal coastal or flood defences present but private earth embankments are present in places. Environmental opportunities under the MR policy could allow potential for habitat enhancements here to mitigate impacts of defences elsewhere in the designated site.
e8 Cardurnock to Scottish Border	11e 8.6	Kingmoor to Rockcliffe	No	Managed realignment - no formal coastal or flood defences present but private earth embankments are present in places. Environmental opportunities under the MR policy could allow potential for habitat enhancements here to mitigate impacts of defences elsewhere in the designated site.
e8 Cardurnock to Scottish Border	11e 8.7	Rockcliffe	No	Given the limited properties at risk from flooding, there is limited economic justification for construction of new embankments and a more suitable approach is the introduction of temporary defences or individual adaptation measures to minimise flood risk (Option 4).  Should residents wish to finance a more permanent solution, the preferred approach would be a set embankment (either earth or low flood wall) (Option 3) adjacent to the road. It is not anticipated that this would be undertaken in next 10 years
e8 Cardurnock to Scottish Border	11e 8.8	Rockcliffe to Demesne Farm	No	Managed realignment - monitoring and management of risk to the minor road, with closure when becomes unsafe.
e8 Cardurnock to Scottish Border	11e 8.9	Demesne Farm to Metal Bridge (Esk)	No	Managed realignment - there are privately managed embankments protected by extensive saltmarsh. Environmental opportunities under the MR policy could allow potential for habitat enhancements here to mitigate impacts of defences elsewhere in the designated site.
e8 Cardurnock to Scottish Border	11e 8.10	Metal Bridge (Esk) to the River Sark	No	Managed realignment -with potential to hold the line at a set back location in future to manage flood risk to the railway and roads. Environmental opportunities under the MR policy could allow potential for habitat creation here to mitigate impacts of defences elsewhere in the designated site.

## 1.3 Assumptions

The coastline covered by the Cumbria Coastal Strategy is significantly more extensive than would usually be considered at strategy level. For this reason, focus has been on developing measures for stretches of coast (priority units) where there is a need to implement a change from current management, either as a result of key issues or risks to assets or where opportunities for improvement have been recognised. This does, not however, negate the need to consider wider scale impacts and benefits nor to consider whether other areas of the Strategy coastline could present opportunities for environmental improvements or mitigation measures.

**Priority units** have been defined according to the geographic Policy Units established in the SMP2 and represent stretches of frontage where:

- there are key assets at risk from flooding or coastal erosion
- the SMP policy has been queried, for example due to a change in risk or new information, or
- where there may be environmental opportunities, which could bring benefits to an area.

The remaining policy units in the strategy area have been identified as **non-priority units**, where the strategy has considered if there is justification for a change in SMP2 policy, and has highlighted any activities that may be required along those coastal stretches for further review.

The HRA Screening focuses on the preferred strategic approach in those priority and non-priority units in the short term (up to 10 years) and in the medium/long-term, shown in Annex A. The priority units are shown in bold and the non-priority units are not in bold. Any policy interventions beyond 10 years will be subject to review and will not be significantly different from the SMP.

Where no change in management policy is proposed from the SMP2, and no active intervention is proposed in the first ten years in non-priority units, those Policy Units have been screened out of further assessment in the HRA (and shaded out in the table in Annex A).

## 2 The HRA process

This report has been prepared in accordance with the:

- EU Birds Directive (Council Directive 2009/147/EC), the UK Habitats and Species Conservation Regulations 2010 (as amended in 2012) and the Offshore Marine Conservation (Natural Habitats & c.) (Amendment) Regulations 2010;
- European Commission (2002) Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological Guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC.

An iterative approach has been applied, which has included a review of the SMP HRA and efforts to identify possible impacts early in the development of the strategy. Possible significant impacts are identified in this report based on an examination of European site descriptions and Natura 2000 Standard Data Forms. The methodological stages described in European guidance for HRA (EC 2001) are defined in Table 2.1.

Table 2.1: HRA Stages (EC 2001)

HRA Stage	Description of HRA Stage
Stage 1: Screening	Process which identifies the likely impacts upon a Natura 2000 site of a project or plan, either alone or in combination with other projects or plans, and considers whether these impacts are likely to be significant.
Stage 2: Appropriate Assessment	The consideration of the impact on the integrity of the Natura 2000 site of the project or plan, either alone or in combination with other projects or plans, with respect to the site's structure and function and its conservation objectives. Additionally, where there are adverse impacts, an assessment of the potential mitigation of those impacts.
Stage 3: Assessment of Alternative Solutions	Assessment of alternative solutions — the process which examines alternative ways of achieving the objectives of the project or plan that avoid adverse impacts on the integrity of the Natura 2000 site
Stage 4: IROPI	Assessment where no alternative solutions exist and where adverse impacts remain — an assessment of compensatory measures where, in the light of an assessment of imperative reasons of overriding public interest (IROPI), it is deemed that the project or plan should proceed (it is important to note that this guidance does not deal with the assessment of imperative reasons of overriding public interest)

Following the identification of the need for an HRA of the strategy to assess the impacts of the coastal management works on the European sites, under the requirements of the Regulations listed above, and with reference to JNCC et al (2013), it has been established that an initial HRA Screening Assessment (Stage 1) is required. This report therefore records the procedure and results of Stage 1 'Screening', which will be used to establish whether a full Appropriate Assessment will be needed (Stage 2) due to the likelihood of significant effects on any European sites.

If an Appropriate Assessment is required, the implications of the project must then be assessed in view of the site's conservation objectives, so as to ascertain whether or not it will adversely affect the integrity of the site. If the Stage 2 assessment were to confirm adverse impacts on the European sites as a result of the project, it would be necessary to seek less damaging alternative solutions (Stage 3). Where alternative solutions are not available, the HRA would need to establish Imperative Reasons of Overriding Public Interest (IROPI) and to suggest suitable compensatory measures (Stage 4) to maintain the coherence of the Natura 2000 network.

## 3 Identifying relevant European sites

The purpose of this section is to identify the relevant European sites and interest features that could potentially be affected by the strategy and those sites which can be screened out of the HRA because there is no potential connectivity or pathway for a likely significant effect to occur.

Table 3.1 presents all Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites considered, together with reasons for 'screening out' some sites.

Where there is uncertainty about the likelihood of the strategy having a significant effect on a site, or where a pathway for impact (connectivity to the European site) exists, a European site has been taken forward for further assessment in Chapter 5 (and is shaded in green in Table 3.1).

Table 3.1: Screening of European Sites (ordered north to south)

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
<b>Special Areas of Conservation (SAC)</b>			
River Eden SAC	Standing waters, fens and wet habitats. Anadromous fish and non-migratory fish. Otter.	✓	This site lies within the strategy area.
South Solway Mosses SAC	Bogs and wet habitats.	✓	This site lies 0.4km from the strategy area, inland.
Solway Firth SAC	Coastal habitats, estuarine and intertidal habitats, submerged marine habitats. Anadromous fish.	✓	This site lies within the strategy area
River Derwent and Bassenthwaite Lake SAC	Standing waters, riverine habitats and running waters, Marsh fritillary butterfly, anadromous fish and non-migratory fish, otter. Floating water plantain.	x	This site lies approximately 2.3km to the east of the strategy area. It is considered that the River Derwent and Bassenthwaite Lake SAC is too far inland for the strategy to impact upon the site. This site was also screened out of the SMP2.
Drigg Coast SAC	Coastal habitats (including those sensitive to abstraction), estuarine and intertidal habitats.	✓	This site lies within the strategy area
Duddon Mosses SAC	Bogs and wet habitats.	✓	This site lies 0.3km from the strategy area. Although the raised bogs lie landward of the railway line, the site lies within the coastal floodplain and there is connectivity to the strategy area.
Roudsea Wood and Mosses SAC	Bogs and wet habitats, dry woodlands and scrub.	✓	Part of this site lies within or immediately adjacent to the strategy area.
Witherslack Mosses SAC	Bogs and wet habitats.	✓	This site lies 0.7km from the strategy shoreline and is within the adjacent flood plain.
Morecambe Bay Pavements SAC	Standing waters (not sensitive to acidification), dry heathland habitats, dry grassland, upland and dry woodland and scrub. Narrow-mouthed whorl snail.	x	This site lies 2km east of the strategy area. It is considered that the Morecambe Bay Pavements SAC is too far inland for the strategy to impact upon the site. This site was also screened out of the SMP2.
Morecambe Bay SAC	Coastal, estuarine, intertidal and submerged marine habitats. Great crested newt.	✓	This site lies within the strategy area
Shell Flat and Lune Deep SAC	Submerged marine habitats.	x	This site lies offshore from the strategy area and no connectivity has been identified as the closest policy unity lies over 10km from this SAC.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Sefton Coast SAC	Coastal habitats (including those sensitive to abstraction). Petalwort. Great crested newt.	x	Lies over 40km to the south of the strategy area. No connectivity to the strategy area has been identified.
Dee Estuary SAC	Coastal habitats (including those sensitive to abstraction), estuarine and intertidal habitats. Petalwort. Anadromous fish.	x	Lies over 60km to the south of the strategy area. No connectivity to the strategy area has been identified.
River Dee and Bala Lake SAC	Riverine habitats. Floating water-plantain. Anadromous fish and non-migratory fish. Otter.	x	Lies over 70km to the south of the strategy area. No connectivity to the strategy area has been identified as the strategy will not affect the SAC watercourses. This site was also screened out of the SMP due to the distance from the site.
Menai Strait and Conwy Bay SAC	Submerged marine habitats, estuarine and intertidal habitats.	x	This site lies over 80km to the south-west of the strategy area and no connectivity to the strategy area has been identified. This site was also screened out within the SMP.
Great Ormes Head SAC	Dry grassland, dry heathland habitats and coastal habitats (sensitive to abstraction).	x	This site lies over 90km to the south-west of the strategy area and no connectivity to the strategy area has been identified. This site was also screened out within the SMP.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
<b>Special Protection Areas (SPAs)</b>			
Upper Solway Flats and Marshes SPA	<p>Article 4.1: supporting overwintering populations of the following Annex 1 species: Whooper swan <i>Cygnus Cygnus</i>, Golden plover <i>Pluvialis apricaria</i>, Bar-tailed godwit <i>Limosa lapponica</i>, Barnacle goose <i>Branta leucopsis</i> (JNCC).</p> <p>[Note the SNH citation excludes Bar-tailed godwit].</p> <p>Article 4.2: supporting internationally important wintering populations of following migratory species: Curlew <i>Numenius arquata</i>, Dunlin <i>Calidris alpina alpina</i>, Knot <i>Calidris canutus</i>, Oystercatcher <i>Haematopus ostralegus</i>, Pink-footed goose <i>Anser brachyrhynchus</i>, Pintail <i>Anas acuta</i> and Redshank <i>Tringa tetanus</i> and Ringed plover <i>Charadrius hiaticula</i> on passage (JNCC).</p> <p>[Note the SNH citation also includes Scaup <i>Aythya marila</i>, Bar-tailed godwit <i>Limosa lapponica</i> but excludes Ringed plover and Dunlin in the international numbers. The SNH citation also notes nationally important numbers of shelduck <i>Tadorna tadorna</i>, Teal <i>Anas crecca</i>, Shoveler <i>Anas clypeata</i>, Goldeneye <i>Bucaphala clangula</i>, Grey plover <i>Pluvialis squatorola</i>, Sanderling <i>Calidris alba</i>, Dunlin <i>Calidris alpina</i> and Turnstone <i>Arenaria interpres</i>.</p> <p>Article 4.2: regularly supporting over 20,000 waterfowl.</p>	✓	Within strategy area. Strategy has potential to affect habitats that support these qualifying species that may forage in and around the strategy area.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Solway Firth proposed SPA (extension to Upper Solway Flats and Marshes SPA)	<p>Inclusion of additional species to those described under Upper Solway Flats and Marshes SPA:</p> <p>Wintering Common Scoter, Goosander, Red-throated diver (species to be included in the proposed marine extension)</p> <p>Black-headed gull, Common gull, Cormorant, Herring gull, Lapwing, Ringed plover (proposed additions to the existing part of the SPA)</p>	✓	Within strategy area. Strategy has potential to affect habitats that support these qualifying species that may forage in and around the strategy area.
Leighton Moss SPA	<p>Article 4.1: supporting populations of the following Annex 1 species:</p> <p>Bittern (overwintering and breeding), Marsh harrier (breeding)</p>	x	This site is over 3 km south of the strategy area and lies inland of the coast. No connectivity to the site has been identified.
Morecambe Bay and Duddon Estuary SPA	<p>Article 4.1: regularly used by 1% or more of the GB populations of Annex 1 species: Whooper swan <i>Cygnus Cygnus</i>, Little egret <i>Egretta garzetta</i>, Golden plover <i>Pluvialis apricaria</i>, Bar-tailed godwit <i>Limosa lapponica</i>, Ruff <i>Calidris pugnax</i>, Mediterranean gull <i>Larus melancephalus</i>, Little tern <i>Sterna albifrons</i> (breeding), Sandwich tern <i>Sterna sandvicensis</i> (breeding), and Common tern <i>Sterna hirundo</i> (breeding).</p> <p>Article 4.2: regularly used by 1% or more of the biogeographical populations of regularly occurring migratory species (non-breeding) (not listed above): Pink-footed goose <i>Anser brachyrhyncus</i>, Common shelduck <i>Tadorna tadorna</i>, Northern pintail <i>Anas acuta</i>, Eurasian oystercatcher <i>Haematopus ostralegus</i> and Grey plover <i>Pluvialis squatarola</i></p>	✓	Within strategy area. Strategy has potential to affect habitats that support these qualifying species that may forage in and around the strategy area.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Liverpool Bay SPA	<p>Article 4.1: supporting populations of the following Annex 1 species: Red-throated Diver <i>Gavia stellate</i> (non-breeding), Little gull <i>Hydrocoloeus minutus</i> (non-breeding), Little tern <i>Sterna albifrons</i> (breeding), Common tern <i>Sterna hirundo</i> (breeding).</p> <p>Regularly occurring migratory species: Common scoter <i>Melanitta nigra</i> (non-breeding).</p> <p>Waterbird assemblage.</p>	x	This site lies over 5 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.
Ribble and Alt Estuaries SPA	<p>Article 4.1: supporting populations of the following Annex 1 species:</p> <p>Breeding: Common tern <i>Sterna hirundo</i>, Ruff <i>Philomachus pugnax</i>.</p> <p>Overwintering: Bar-tailed godwit <i>Limosa lapponica</i>, Bewick's swan <i>Cygnus columbianus bewickii</i>, Golden plover <i>Pluvialis apricaria</i>, Whooper swan <i>Cygnus cygnus</i></p> <p>Article 4.2: supporting following migratory species:</p> <p>Breeding: Lesser black-backed gull <i>Larus fuscus</i></p> <p>On passage: Ringed plover <i>Charadrius hiaticula</i>, Sanderling <i>Calidris alba</i></p> <p>Overwintering: Black-tailed godwit <i>Limosa limosa islandica</i>, Dunlin <i>Calidris alpina alpina</i>, Grey plover <i>Pluvialis squatarola</i>, Knot <i>Calidris canutus</i>, Oystercatcher <i>Haematopus ostralegus</i>, Pink-footed goose <i>Anser brachyrhynchus</i>, Pintail <i>Anas acuta</i>, Redshank <i>Tringa totanus</i>, Sanderling <i>Calidris alba</i>, Shelduck <i>Tadorna tadorna</i>, Teal <i>Anas crecca</i>, Wigeon <i>Anas penelope</i>.</p> <p>Seabird assemblage.</p> <p>Wetland of international importance.</p>	x	This site lies over 30 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Martin Mere SPA (Burscough, Southport)	<p>Article 4.1: supporting populations of the following Annex 1 species: Overwinter: Bewick's swan <i>Cygnus columbianus bewickii</i>, Whooper swan <i>Cygnus Cygnus</i>.</p> <p>Article 4.2: supporting following migratory species: Overwinter: Pink-footed goose <i>Anser brachyrhynchus</i>, Pintail <i>Anas acuta</i></p> <p>Wetland of international importance</p>	x	This site lies over 50 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.
Mersey Estuary SPA	<p>Article 4.1: supporting populations of the following Annex 1 species: Overwinter: Golden Plover <i>Pluvialis apricaria</i>.</p> <p>Article 4.2: supporting following migratory species: Overwinter: Dunlin <i>Calidris alpina alpina</i>, Pintail <i>Anas acuta</i>, Redshank <i>Tringa totanus</i>, Shelduck <i>Tadorna tadorna</i>, Teal <i>Anas crecca</i>.</p> <p>On passage: Redshank <i>Tringa totanus</i>, Ringed plover <i>Charadrius hiaticula</i>.</p> <p>Wetland of international importance.</p>	x	This site lies over 70 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.
Mersey Narrows and North Wirral Foreshore SPA	<p>Article 4.2: supporting following migratory species: Overwinter: Redshank <i>Tringa totanus</i>, Turnstone <i>Arenaria interpres</i>.</p> <p>Wetland of international importance.</p>	x	This site lies over 60 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Dee Estuary SPA	<p>Article 4.1: supporting populations of the following Annex 1 species:</p> <p>Breeding: Common tern <i>Sterna hirundo</i> and Little tern <i>Sterna albifrons</i>.</p> <p>On passage: Sandwich tern <i>Sterna sandvicensis</i></p> <p>Overwintering: Bar-tailed godwit <i>Limosa lapponica</i></p> <p>Article 4.2: supporting populations of following migratory species: Redshank <i>Tringa totanus</i> (on passage) and overwintering - Curlew <i>Numenius arquata</i>, Black-tailed godwit <i>Limosa limosa islandica</i>, Dunlin <i>Calidris alpina alpina</i>, Grey plover <i>Pluvialis squatarola</i>, Knot <i>Calidris canutus</i>, Oystercatcher <i>Haematopus ostralegus</i>, Redshank <i>Tringa totanus</i>, Pintail <i>Anas acuta</i>, Shelduck <i>Tadorna tadorna</i> and Teal <i>Anas crecca</i></p> <p>Article 4.2: regularly supporting at least 20,000 waterfowl.</p>	x	This site lies over 60 km to the south of the strategy area, and no connectivity has been identified. The maximum foraging distance covered by the breeding seabirds is less than the distance from the SPA to the strategy area. This site was also screened out within the SMP.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
<b>Ramsar sites</b>			
Upper Solway Flats and Marshes Ramsar Site	<p>Criterion 2: Supports over 10% of the British population of Natterjack toad <i>Bufo calamita</i>.</p> <p>Criterion 5: internationally important assemblage (species with peak counts in winter): 135720 waterfowl (5 year peak mean 1998/99-2002/2003).</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Peak counts in spring/autumn: ringed plover.</p> <p>Species with peak counts in winter: barnacle goose, Svalbard, red knot, curlew, common redshank, dunlin, pink-footed goose, Northern pintail and bar-tailed godwit. (JNCC updated 2005)</p>	✓	Within strategy area. Strategy has potential to affect habitats that support these qualifying species that may forage in and around the strategy area.
Leighton Moss Ramsar site	<p>Criterion 1: large reedbed habitat characteristic of the biogeographical region.</p> <p>Criterion 3: breeding Great bittern <i>Botaurus stellaris</i>, Eurasian marsh harrier <i>Circus aeruginosus</i> and bearded tit <i>Panurus biarmicus</i>.</p>	x	Screened out of SMP as any future changes to the management regime would not be as a result of SMP policy and therefore no significant effects on the reedbed habitat and breeding birds. This site is also over 3 km south of the strategy area and lies inland of the coast and no connectivity to the site has been identified.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Morecambe Bay Ramsar site	<p>Criterion 4: staging area for migratory waterfowl including Ringed plover</p> <p>Criterion 5: Internationally important assemblage: peak counts in winter, 26326 waterfowl (5 year peak mean 1998/99-2002/2003)</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Regularly supporting breeding Lesser black-backed gull, Herring gull and Sandwich tern. Peak counts in spring/autumn: Great cormorant, Shelduck, Northern pintail, Common eider, Oystercatcher, Ringed plover, Grey plover, Sanderling, Curlew, Redshank, Ruddy turnstone, Lesser black-backed gull.</p> <p>Peak counts in winter: Great crested grebe, Pink-footed goose, Wigeon, Goldeneye, Red-breasted merganser, Golden plover, Northern lapwing, Red knot, Dunlin, and Bar-tailed godwit</p>	✓	Within strategy area. Strategy has potential to affect habitats that support these qualifying species that may forage in and around the strategy area.
Duddon Estuary Ramsar Site	<p>Criterion 4: nationally important waterfowl during spring and autumn passage.</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Peak counts in winter: Northern pintail, Common redshank, Red knot. Natterjack toads.</p> <p>Rich assemblage of wetland plants and invertebrates - at least one nationally scarce plant and at least two British RedData Book invertebrates.</p>	✓	Within strategy area. Strategy has potential to affect habitats that support these qualifying species.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Ribble and Alt Estuaries Ramsar Site	<p>Criterion 5: internationally important assemblage (species with peak counts in winter): 222038 waterfowl (5 year peak mean 1998/99-2002/2003).</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Regularly supporting breeding Lesser black-backed gull. Peak counts in spring/autumn: Ringed plover, Grey plover, Red knot, Sanderling, Dunlin, Black-tailed godwit, Common redshank and Lesser black-backed gull. Peak counts in winter: Tundra swan, Whooper swan, Pink-footed goose, Shelduck, Wigeon, teal, Northern pintail, Oystercatcher and Bar-tailed godwit</p>	x	This site lies over 30 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.
Martin Mere Ramsar site (Burscough, Southport)	<p>Criterion 5: internationally important assemblage (species with peak counts in winter): 25306 waterfowl (5 year peak mean 1998/99-2002/2003)</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Peak counts in spring/autumn: Pink footed goose Peak counts in winter: Tundra swan, Whooper swan, Eurasian wigeon, Northern pintail.</p>	x	Also screened out of SMP– no significant effects foreseen as no mechanisms have been identified by which the bird features would be significantly affected by strategy policy, due to distance from the site.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Mersey Narrows and North Wirral Foreshore Ramsar Site	<p>Criterion 4: supporting important numbers of non-breeding Little gulls and Common terns.</p> <p>Criterion 5: regularly supports 20,000 or more waterbirds: an average peak of 32,402 individual waterbirds.</p> <p>Criterion 6: regularly supports 1% of the individuals in the following species/subspecies in any season: 2.4% of the islandica subspecies, W Europe/Waddensea/Britain/Ireland (non-breeding) knot and 2.8% of lapponica subspecies W Europe/NW Africa (non-breeding) bar-tailed godwits.</p>	x	This site lies over 60 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.
Mersey Estuary Ramsar Site	<p>Criterion 5: internationally important assemblage (species with peak counts in winter): 89576 waterfowl (5 year peak mean 1998/99-2002/2003)</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Peak counts in spring/autumn: Common shelduck, Black-tailed godwit, and Common redshank. Peak counts in winter: Eurasian teal, Northern pintail and Dunlin.</p>	x	This site lies over 50 km to the south of the strategy area and no connectivity to the site has been identified. This site was also screened out within the SMP.

European site name	Broad description of qualifying habitats/species likely to be sensitive to the Cumbria Coastal Strategy being assessed (further details in Chapter 4)	Screening In (✓) or Out (x)	Decision for screening out (where applicable)
Dee Estuary Ramsar Site	<p>Criterion 1: Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary.</p> <p>Criterion 2: Natterjack toad <i>Epidalea calamita</i> (Breeding)</p> <p>Criterion 5: Internationally important assemblage: regularly supports 120,726 individual waterbirds (non-breeding)</p> <p>Criterion 6: Species/populations occurring at levels of international importance:</p> <p>Peak counts in spring/autumn: Redshank. Peak counts in winter: Teal, shelduck, oystercatcher, curlew, pintail, grey plover, knot, dunlin, black-tailed godwit, bar-tailed godwit, redshank.</p>	x	<p>This site lies over 60 km to the south of the strategy area, and no connectivity has been identified. The maximum foraging distance covered by the breeding seabirds is less than the distance from the SPA to the strategy area. There is no potential for impact on Natterjack toads.</p> <p>This site was also screened out within the SMP.</p>

## 4 European sites requiring assessment

Table 4.1 and Figures 2a-c presents the Special Areas of Conservation (SAC), Special Protection Areas (SPA) and Ramsar sites considered in this assessment, together with their qualifying features which have the potential to be affected by the strategy.

**Table 4.1: European sites requiring assessment**

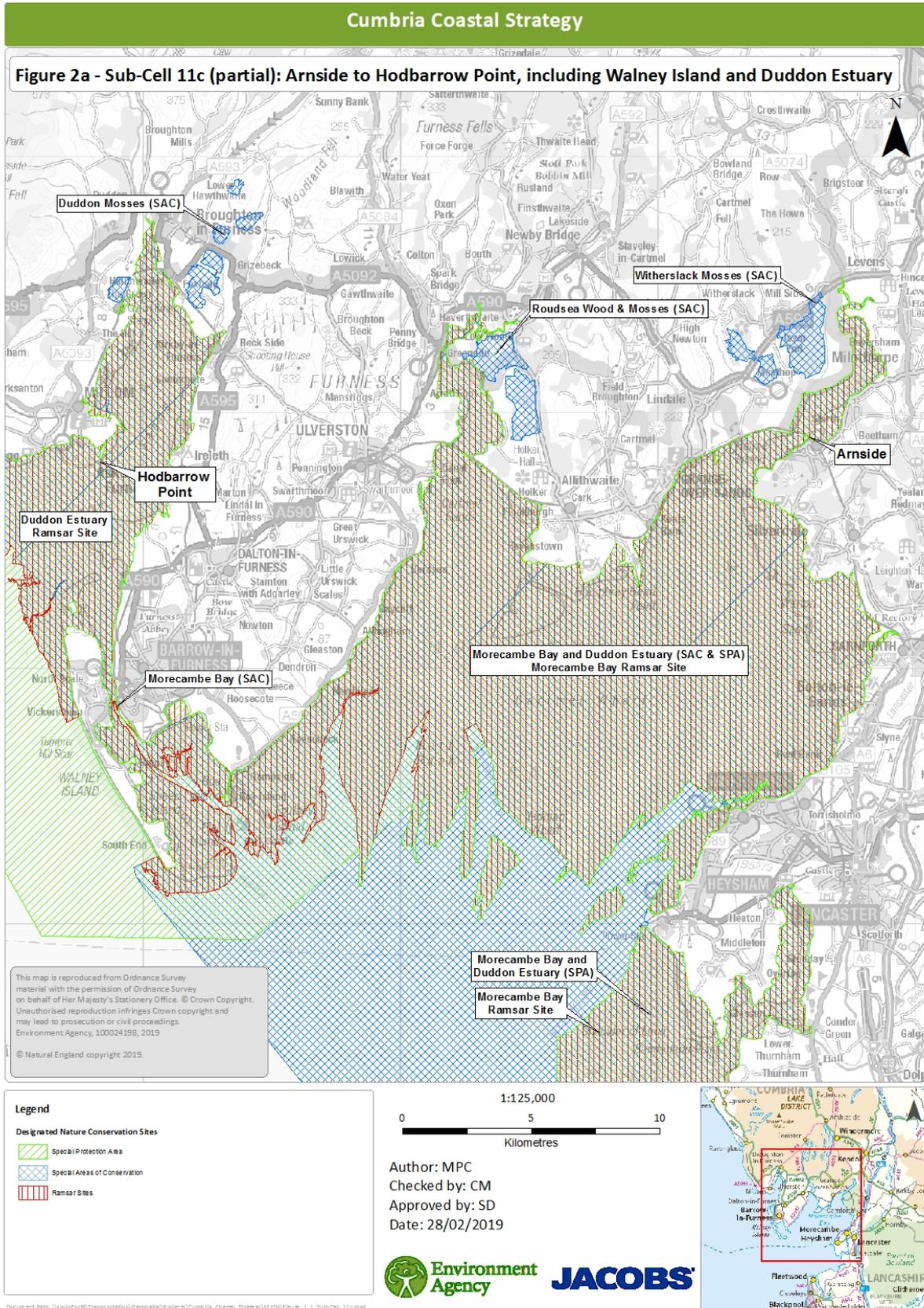
European site name	Qualifying features likely to be sensitive to the Cumbria Coastal Strategy being assessed
<i>Special Areas of Conservation (SAC)</i>	
River Eden SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea.            Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation.            Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae).</p> <p><b>Annex 2 species (primary reason for site selection)</b>            White-clawed (or Atlantic stream) crayfish.            Sea lamprey, Brook lamprey, River lamprey, Atlantic salmon, Bullhead.            Otter.</p>
South Solway Mosses SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Active raised bogs.</p> <p><b>Annex 1 habitats (not a primary reason for site selection)</b>            Degraded raised bogs still capable of natural regeneration.</p>
Solway Firth SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Sandbanks which are slightly covered by sea water all the time.            Estuaries.            Mudflats and sandflats not covered by seawater at low tide.            Salicornia and other annuals colonizing mud and sand.            Atlantic salt meadows (Glauco-Puccinellietalia maritima).</p> <p><b>Annex 1 habitats (not a primary reason for site selection)</b>            Reefs.            Perennial vegetation of stony banks.            Fixed coastal dunes with herbaceous vegetation ('grey dunes').</p> <p><b>Annex 2 species (primary reason for site selection)</b>            Sea lamprey, River lamprey.</p>

European site name	Qualifying features likely to be sensitive to the Cumbria Coastal Strategy being assessed
Drigg Coast SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Estuaries.            Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>).            Dunes with <i>Salix repens ssp. argentea</i> (<i>Salicion arenariae</i>).</p> <p><b>Annex 1 habitats (not a primary reason for site selection)</b>            Mudflats and sandflats not covered by seawater at low tide.            Salicornia and other annuals colonizing mud and sand.            Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)            Embryonic shifting dunes.            Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes').            Fixed coastal dunes with herbaceous vegetation ('grey dunes').            Humid dune slacks</p>
Duddon Mosses SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Active raised bogs.            Degraded raised bogs still capable of natural regeneration.</p>
Roudsea Wood and Mosses SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Active raised bogs.            Degraded raised bogs still capable of natural regeneration.  <i>Tilio-Acerion</i> forests of slopes, screes and ravines.  <i>Taxus baccata</i> woods of the British Isles.</p>
Witherslack Mosses SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Active raised bogs.            Degraded raised bogs still capable of natural regeneration.</p>
Morecambe Bay SAC	<p><b>Annex 1 habitats (primary reason for site selection)</b>            Estuaries.            Mudflats and sandflats not covered by seawater at low tide.            Large shallow inlets and bays.            Perennial vegetation of stony banks.            Salicornia and other annuals colonizing mud and sand.            Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)            Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes')            Fixed coastal dunes with herbaceous vegetation ('grey dunes')            Humid dune slacks.</p> <p><b>Annex 1 habitats (not a primary reason for site selection)</b>            Sandbanks which are slightly covered by sea water all the time.            Coastal lagoons.            Reefs.            Embryonic shifting dunes.            Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>).            Dunes with <i>Salix repens ssp. argentea</i> (<i>Salicion arenariae</i>).</p> <p><b>Annex 2 species (primary reason for site selection)</b>            Great crested newt.</p>

European site name	Qualifying features likely to be sensitive to the Cumbria Coastal Strategy being assessed
<b>Special Protection Areas (SPAs)</b>	
Upper Solway Flats and Marshes SPA	<p><b>Article 4.1: supporting overwintering populations of the following Annex 1 species:</b></p> <p>Whooper swan <i>Cygnus Cygnus</i>, Golden plover <i>Pluvialis apricaria</i>, Bar-tailed godwit <i>Limosa lapponica</i>, Barnacle goose <i>Branta leucopsis</i> (JNCC)</p> <p>[Note the SNH citation excludes Bar-tailed godwit].</p> <p><b>Article 4.2: supporting populations of following migratory species:</b></p> <p>Ringed Plover <i>Charadrius hiaticula</i> (on passage) and overwintering - Curlew <i>Numenius arquata</i>, Dunlin <i>Calidris alpina alpina</i>, Knot <i>Calidris canutus</i>, Oystercatcher <i>Haematopus ostralegus</i>, Pink-footed goose <i>Anser brachyrhynchus</i>, Pintail <i>Anas acuta</i> and Redshank <i>Tringa tetanus</i> (JNCC).</p> <p>[Note the SNH citation also includes Scaup <i>Aythya marila</i>, Bar-tailed godwit <i>Limosa lapponica</i> but excludes ringed plover and dunlin in the international numbers. The SNH citation also notes nationally important numbers Shelduck <i>Tadorna tadorna</i>, Teal <i>Anas crecca</i>, Shoveler <i>Anas clypeata</i>, Goldeneye <i>Bucaphala clangula</i>, Grey plover <i>Pluvialis squatarola</i>, Sanderling <i>Calidris alba</i>, Dunlin <i>Calidris alpina</i> and Turnstone <i>Arenaria interpres</i>.</p> <p><b>Article 4.2: regularly supporting at least 20,000 waterfowl.</b></p>
Solway Firth pSPA (extension to Upper Solway Flats and Marshes SPA)	<p><b>Inclusion of additional species to those described under Upper Solway Flats and Marshes SPA:</b></p> <p><b>Wintering species to be included in the proposed marine extension</b> Common Scoter, Goosander, Red-throated diver</p> <p><b>Proposed additions to the existing part of the SPA</b> Black-headed gull, Common gull, Cormorant, Herring gull, Lapwing, Ringed plover.</p>
Morecambe Bay and Duddon Estuary SPA	<p><b>Article 4.1: regularly used by 1% or more of the GB populations of Annex 1 species:</b></p> <p>Whooper swan <i>Cygnus Cygnus</i>, Little egret <i>Egretta garzetta</i>, Golden plover <i>Pluvialis apricaria</i>, Bar-tailed godwit <i>Limosa lapponica</i>, Ruff <i>Calidris pugnax</i>, Mediterranean gull <i>Larus melancephalus</i>, Little tern <i>Sterna albifrons</i> (breeding), Sandwich tern <i>Sterna sandvicensis</i> (breeding), and Common tern <i>Sterna hirundo</i> (breeding).</p> <p><b>Article 4.2: regularly used by 1% or more of the biogeographical populations of regularly occurring migratory species (non-breeding) (not listed above):</b></p> <p>Pink-footed goose <i>Anser brachyrhynchus</i>, Common shelduck <i>Tadorna tadorna</i>, Northern pintail <i>Anas acuta</i>, Eurasian oystercatcher <i>Haematopus ostralegus</i> and Grey plover <i>Pluvialis squatarola</i>.</p>

European site name	Qualifying features likely to be sensitive to the Cumbria Coastal Strategy being assessed
<b>Ramsar sites</b>	
Upper Solway Flats and Marshes Ramsar Site	<p>Criterion 2: Supports over 10% of the British population of Natterjack toad <i>Bufo calamita</i></p> <p>Criterion 5: internationally important assemblage (species with peak counts in winter): 135720 waterfowl (5 year peak mean 1998/99-2002/2003)</p> <p>Criterion 6: Species/populations occurring at levels of international importance:  Species with peak counts in spring/autumn: Ringed plover.  Species with peak counts in winter: Barnacle goose, Svalbard, Red knot, Curlew, Common redshank, Dunlin, Pink-footed goose, Northern pintail and Bar-tailed godwit</p> <p>Species/populations identified subsequent to designation for possible future consideration under criterion 6. Breeding season: Lesser black-backed gull, Herring gull. Peak counts in spring/autumn: Ringed plover. Peak counts in winter: Dunlin.</p>
Morecambe Bay Ramsar site	<p>Criterion 4: staging area for migratory waterfowl including Ringed plover</p> <p>Criterion 5: Internationally important assemblage: peak counts in winter, 26326 waterfowl (5 year peak mean 1998/99-2002/2003)</p> <p>Criterion 6: Species/populations occurring at levels of international importance:  Regularly supporting breeding Lesser black-backed gull, Herring gull and Sandwich tern.  Peak counts in spring/autumn: Great cormorant, Shelduck, Northern pintail, Common eider, Oystercatcher, Ringed plover, Grey plover, Sanderling, Curlew, Redshank, Ruddy turnstone, Lesser black-backed gull.  Peak counts in winter: Great crested grebe, Pink-footed goose, wigeon, Goldeneye, Red-breasted merganser, Golden plover, Northern lapwing, Red knot, Dunlin, and Bar-tailed godwit.</p>
Duddon Estuary Ramsar Site	<p>Criterion 2: Supports nationally important numbers of Natterjack toads. Rich assemblage of wetland plants and invertebrates - at least one nationally scarce plant and at least two British Red Data Book invertebrates.</p> <p>Criterion 4: nationally important waterfowl during spring and autumn passage</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Peak counts in winter: Northern pintail, Common redshank, Red knot.</p>

Figure 2a-c: Relevant internationally designated nature conservation sites within the strategy area.

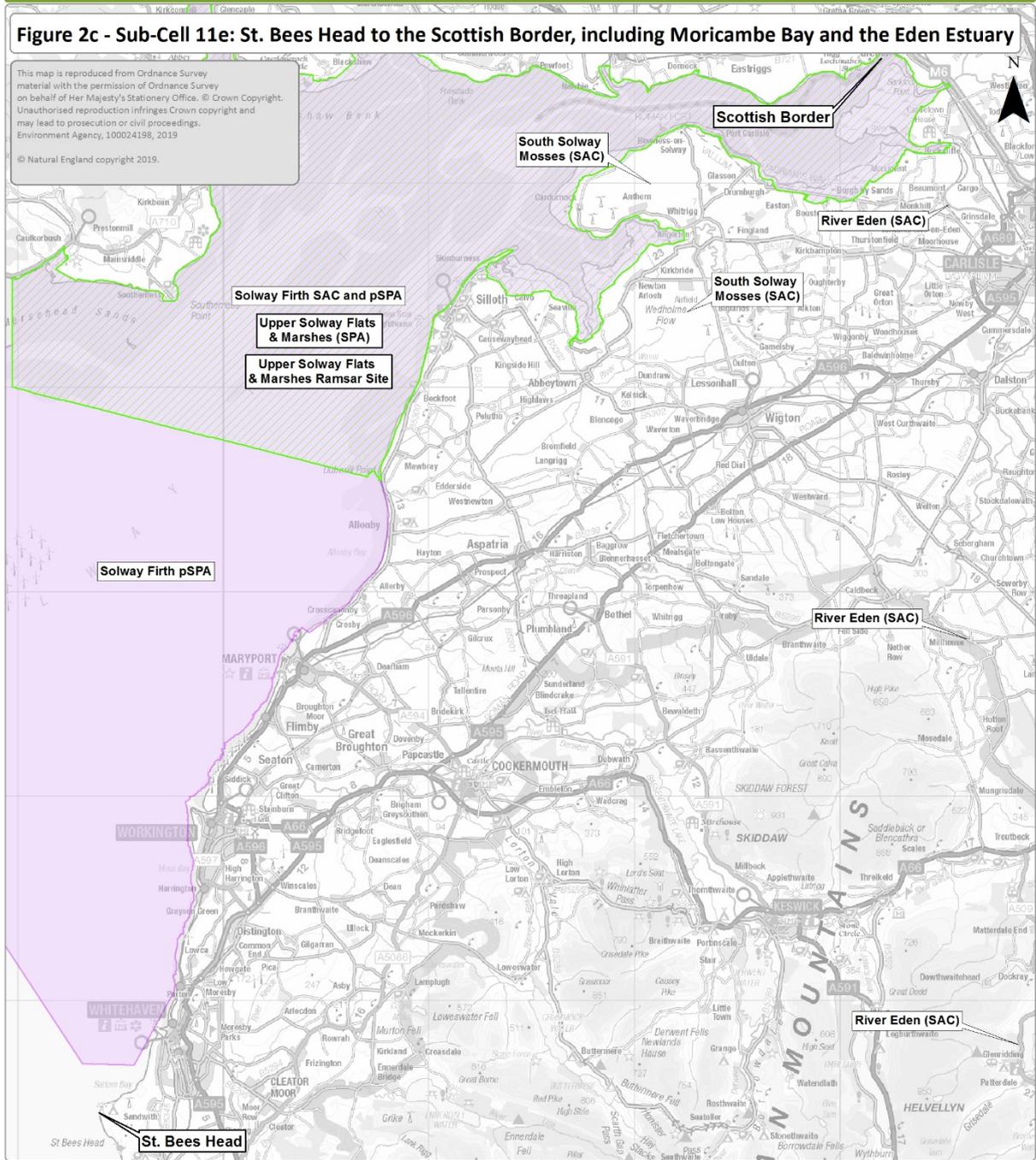




Cumbria Coastal Strategy

Figure 2c - Sub-Cell 11e: St. Bees Head to the Scottish Border, including Moricambe Bay and the Eden Estuary

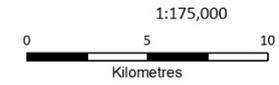
This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of Her Majesty's Stationery Office. © Crown Copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. Environment Agency, 100024198, 2019.  
© Natural England copyright 2019.



**Legend**

**Designated Nature Conservation Sites**

- Special Protection Area
- Potential Special Protection Area
- Special Areas of Conservation
- Ramsar Sites



Author: MPC  
Checked by: CM  
Approved by: SD  
Date: 16/04/2019



Document Path: \\win-fr-06\Transportation\Geospatial\Projects\Cumbria\_Coastal\_Strategy\MXD\Figure\_1\_3\_Sub\_Cell\_11e.mxd

## 5 Conservation objectives

The assessment of likely significant effect will consider the implications of the strategy proposals in view of the site's conservation objectives.

The generic conservation objectives for the sites requiring HRA screening are summarised below, and further details are provided in Annex B. In addition, supplementary advice is available and referenced for individual sites at the links below. For each site, this describes in more detail the range of ecological attributes which are most likely to contribute to a site's overall integrity and the minimum targets each qualifying feature needs to achieve to meet the site's objectives.

### 5.1 Generic conservation objectives for SACs

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its qualifying features, by maintaining or restoring.

For qualifying habitats:

- The extent and distribution of qualifying habitats
- The structure and function (including typical species) of qualifying habitats, and
- The supporting processes on which qualifying habitats rely.

For qualifying species:

- The extent and distribution of habitats of qualifying species
- The structure and function of habitats of qualifying species
- The supporting processes on which habitats of qualifying species rely
- The populations of qualifying species, and
- The distribution of qualifying species within the site.

#### Supplementary objectives and advice for individual SACs

River Eden SAC – <http://publications.naturalengland.org.uk/publication/5935614042046464>  
(November 2018 - version 3)

South Solway Mosses SAC –  
<http://publications.naturalengland.org.uk/publication/5895087833743360> (November 2018  
- version 3)

Solway Firth SAC -  
<http://publications.naturalengland.org.uk/publication/6556237919420416?category=4582026845880320> (November 2018 – version 4)

Drigg Coast -  
<http://publications.naturalengland.org.uk/publication/6720405930770432?category=4582026845880320> (November 2018 – version 3)

Duddon Mosses - <http://publications.naturalengland.org.uk/publication/5497657652936704>  
(November 2018 – version 3)

Roudsea Wood and Mosses SAC -  
<http://publications.naturalengland.org.uk/publication/5161325151911936> (November 2018 - version 3)

Witherslack Mosses SAC - <http://publications.naturalengland.org.uk/publication/6299473500176384>  
(November 2018 - version 3)

Morecambe Bay SAC -  
<http://publications.naturalengland.org.uk/publication/5314736417669120?category=4582026845880320> (November 2018 - version 3)

## 5.2 Generic conservation objectives for SPAs

Ensure that the integrity of the site is maintained or restored as appropriate, and to ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The populations of the qualifying features, and
- The distribution of the qualifying features within the site.

### Supplementary objectives and advice for individual SPAs

Upper Solway Flats and Marshes SPA -

<http://publications.naturalengland.org.uk/publication/5377753788448768?category=4582026845880320> (February 2016 – version 4)

Solway Firth pSPA - <https://www.nature.scot/solway-firth-proposed-marine-spa-supporting-documents>

Morecambe Bay and Duddon Estuary SPA -

<http://publications.naturalengland.org.uk/publication/6242841537806336?category=4582026845880320> (September 2017 – version 5)

## 5.3 Conservation objectives for Ramsar sites

There are currently no conservation objectives for Ramsar sites. The SAC/SPA conservation objectives will be used when the qualifying features are the same, and advice sought from Natural England in other cases if necessary.

## 6 Screening assessment

The HRA screening assessment for the relevant European sites, alone and in-combination, is provided in Table 6.1.

Other plans and strategies have been identified, which may have potential to affect the European sites, in-combination with the Cumbria Coastal Strategy: these are listed below.

- Wyre flood and coastal defence strategy plan (Wyre Council) considers the coastal frontage at Cleveleys, Rossall and Fleetwood and ties into the Blackpool strategy up to Anchorsholme, and associated Wyre beach management scheme (currently at option appraisal stage) – possible sites affected are: Morecambe Bay SAC and Ramsar site, and the Morecambe Bay and Duddon Estuary SPA.
- Network Rail proposals for embankment and rock revetment stabilisation works on the Eskmeals railway viaduct over the River Esk – possible site affected is: Drigg Coast SAC.
- North West Shoreline Management Plan (SMP) policies in remainder of sub-cell 11c (Morecambe Bay) - possible sites affected are: Morecambe Bay SAC and Ramsar site, and the Morecambe Bay and Duddon Estuary SPA.
- The Moorside Project comprises the proposed Moorside new nuclear power station ('Moorside Power Station') and Moorside Project Railway which are located to the west and north of the existing Sellafield Site in Cumbria. The Moorside Project is currently on hold, but potential in-combination impacts have been considered. Possible sites affected are: Morecambe Bay SAC and Ramsar site, and the Morecambe Bay and Duddon Estuary SPA.
- North West Coast Connections project (Cumbria County Council) (at proposals stage) to connect the proposed nuclear power station at Moorside near Sellafield to the main national grid electricity network. As noted above, the Moorside Project is currently on hold but potential in-combination impacts have been considered. Possible sites affected are: Drigg Coast SAC, and the Morecambe Bay and Duddon Estuary SAC/SPA, Duddon Estuary Ramsar and Morecambe Bay SAC/Ramsar.
- West Cumbria Mining proposals for a proposed mine (due to be constructed in 2019) on the former Marchon Industrial site near Woodhouse, from which, access will be gained to the offshore coal seams via the existing Sandwith Anhydrite mine portals. Possible sites affected are: River Eden SAC, Drigg Coast SAC and the Solway Firth pSPA.
- Walney extension offshore wind farm proposals to extend the existing Walney I and Walney II offshore wind farms (the "Existing Wind Farms"). The offshore export cables will run eastwards from the southern perimeter of the development with landfall in the area of Middleton Sands, within Morecambe Bay. The proposed onshore cable route runs eastwards from the proposed landfall site and then northeast to the village of Middleton to a new substation location. Possible sites affected are: Morecambe Bay SAC/Ramsar site, Morecambe Bay and Duddon Estuary SPA and Duddon Estuary Ramsar site.
- Ulverston bypass. This is a project identified in the Cumbria LEP / Cumbria CC / HE "West of M6 Strategic Connectivity Study". A Strategic Outline Business Case is under preparation for this project. Currently there are no proposed route options in the public domain – therefore these works will not be considered further at this stage.
- Potential tidal lagoon and tidal barrage proposals (although none expected to be operational before 2030s according to MMO (2017) "Futures analysis for the north east, north west, south east and south west marine plan areas") – these projects will not be considered at the current time due to lack of available information.

- Recently consented or proposed habitat improvement schemes (e.g. at Flookburgh, Whitehaven Harbour) – these are not considered further as they have been integrated into the strategy development and included as part of strategy assessment
- Dumfries and Galloway Shoreline Management Plan, which is expected to commence in 2019/20 – this will not be considered further due to lack of available details to assess at the current time. The SMP should consider the in-combination effects of the Cumbria Coastal Strategy during its development. [Note: we are consulting Dumfries and Galloway Council with respect to this plan and the Local Development Plan and any other strategic plans they may have in preparation which may act cumulatively on this site].

Table 6.1: Screening assessment (relevant risks to the Cumbria Coastal Strategy)

Details on the proposals for each policy unit are provided in Table 1.1 , with further details in Annex A. Priority units are shown in **bold**.

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<i>River Eden SAC: the component River Eden Caldew confluence to Estuary SSSI within the SAC is in unfavourable recovering:</i>					
<i>11e8.5 - Dykesfield to Kingmoor (Eden NTL)</i>					
<i>11e8.6 - Kingmoor to Rockcliffe</i>					
<b>11e8.7 – Rockcliffe</b>					
<i>11e8.8 - Rockcliffe to Demesne Farm</i>					
<i>11e8.9 - Demesne Farm to Metal Bridge (Esk)</i>					
1.1 Fens and wet habitats (Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> ( <i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i> ))	Habitat loss/change Change in salinity	Implementation of MR will allow the coastline to evolve under natural processes but there is a potential for MR to affect soil/water salinity and affect the extent of alluvial forest present.  <b>Potential for significant impact on alluvial forest from MR due to habitat loss/salinity change (insufficient site-specific information at this stage to determine if impact would occur).</b>  Although the alluvial forests are present throughout the length of the River Eden, any adaptation measures or potential construction of a flood embankment in the longer term along the rear of the marsh at Rockcliffe (not along the river bank) are not anticipated to affect the alluvial forest.  <b>No significant impact on alluvial forest from HTL.</b>	✓	The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The River Eden SAC was scoped out of the mining proposals due to its distance and there is no likelihood of an in-combination impact on the alluvial forest.  <b>No known in-combination impacts</b>	x
1.3 Riverine habitats and running water (water courses of plain to montane levels with the <i>Ranunculion fluitantis</i> and <i>Callitricho-Batrachion</i> vegetation)	Habitat loss/change Change in salinity	Implementation of MR will allow the coastline to evolve under natural processes and is unlikely to affect the existing riverine habitats.  <b>No significant impact on riverine habitats from habitat loss or salinity changes.</b>  Possible construction of set back flood embankment alongside the road at the rear of the marsh at Rockcliffe will not affect this riverine habitat.  <b>No significant impact on riverine habitat from HTL.</b>	x	The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The River Eden SAC was scoped out of the mining proposals due to its distance and there is no likelihood of an in-combination impact on riverine habitats.  <b>No known in-combination impacts</b>	x

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
1.4/1.5 Standing waters (Oligotrophic to mesotrophic standing waters with vegetation of the <i>Littorelletea uniflorae</i> and/or of the <i>Isoëto-Nanojuncetea</i> )	Habitat loss/change	The proposed policies are not anticipated to impact on Ullswater (which is understood to be the standing waters designated), which is located in the catchment of the River Eden, but further east from the strategy changes. <b>No significant impact on standing waters from habitat loss/change.</b>	x	The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The River Eden SAC was scoped out of the mining proposals due to its distance (and will not involve any works in the water column) and there is no likelihood of an in-combination impact on standing waters. <b>No known in-combination impacts</b>	x
2.5 Anadromous fish (Sea lamprey, River lamprey, Atlantic salmon)	Obstacles to migration	The preferred strategy will not introduce obstacles to migration and therefore no significant effects are anticipated. <b>No significant impacts on anadromous fish from obstacles to migration.</b>	x	The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The River Eden SAC was scoped out of the mining proposals due to its distance (and will not involve any works in the water column) and there is no likelihood of an in-combination impact on fish. <b>No known in-combination impacts</b>	x
	Pollution/water quality	The preferred strategy options are unlikely to affect the clean gravel beds that these species use for spawning. <b>No significant impacts on anadromous fish from pollution alone</b>	x	The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The River Eden SAC was scoped out of the mining proposals due to its distance (and will not involve any works in the water column) and there is no likelihood of an in-combination impact on fish. <b>No in-combination impacts with West Cumbria mining proposal</b> It had been determined separately that here is potential for the Moorside project to affect water quality and impact on these species but there is unlikely to be any interaction/in-combination impacts on the fish with the coastal strategy proposals. <b>No in-combination impacts with Moorside project.</b>	x
2.6 Non-migratory fish (White-clawed (or Atlantic stream) crayfish, Brook lamprey, Bullhead)	Pollution Introduction of non-native species	Preferred strategy options are unlikely to affect the clean gravel beds that these species use for spawning. Additionally, the policies will not introduce non-native species affecting the non-migratory fish. <b>No significant impacts on non-migratory fish from pollution</b>	x	The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The River Eden SAC was scoped out of the mining proposals due to its distance (and will not involve any works in the water column) and there is no likelihood of an in-combination impact on fish. <b>No known in-combination impacts</b>	x

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
2.8 Mammals of riverine habitats (Otter)	Loss/change of habitat	None of the habitat enhancement opportunities, adaptation measures or set back defence alongside the road are considered to impact on breeding, foraging and feeding habitats supporting this species. <b>No significant impact on otters</b>	x	The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The River Eden SAC was scoped out of the mining proposals due to its distance and there is no likelihood of an in-combination impact on otters. <b>No known in-combination impacts</b>	x
<p><b>South Solway Mosses SAC:</b>                      11e7.3 Wath Farm                      11e7.5 Anthorn including Wampool to NTL                      11e7.6 Anthorn                      11e7.7 Anthorn to Cardurnock                      11e8.1 (Cardurnock) to 11e8.4 (Dykesfield) including priority unit <b>11e8.2 Bowness-on-Solway</b></p>					
1.2 Bogs and wet habitats (Active raised bogs, degraded raised bogs still capable of natural regeneration)	Hydrological change and lowering of water levels Invasion from invasive species Changes in air pollution	Implementation of MR has the potential to affect (both positively and negatively) water levels and result in hydrological change to the bogs/wet habitats, dependent on location and design. Any works to HTL at Anthorn would not result in hydrological changes. <b>Potential for significant impact on active raised bogs and degraded raised bogs from MR through hydrological change. No significant impacts from implementation of HTL at Anthorn.</b> The strategy will not introduce non-native species affecting the bogs. <b>No significant impact on active raised bogs and degraded raised bogs from invasive species invasion.</b> The preferred strategy options will not affect long-term air quality and therefore will have no impacts on the bogs. <b>No significant impact on active raised bogs and degraded raised bogs from changes in air quality from policy options.</b>	✓	No in-combination impacts have been identified.	N/A

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<b>Solway Firth SAC:</b>					
<b>11e4.4 Allonby</b>		11e7.6 (Anthorn)			
<b>11e4.5 Allonby to Seacroft Farm</b>		11e7.7 (Anthorn to Cardurnock)			
<b>11e4.6 Seacroft Farm to Dubmill Point</b>		11e8.1 (Cardurnock to Bowness-on-Solway)			
<b>11e5.1 Dubmill Point to Silloth</b>		<b>11e8.2 Bowness-on-Solway</b>			
11e6.1 (Silloth Harbour) to <b>11e6.2 Skinburness (open coast)</b>		11e8.3 (Bowness-on-Solway) to 11e8.6 (Rockcliffe)			
11e7.1 Skinburness (east)		<b>11e8.7 Rockcliffe</b>			
11e7.2 Skinburness to Wath Farm		11e8.8 (Rockcliffe) to 11e8.9 (Metal Bridge (Esk))			
11e7.3 (Wath Farm) to 11e7.5 (Anthorn including Wampool to NTL)		11e8.10 Metal Bridge (Esk) to the River Sark			
1.10 Coastal habitats (perennial vegetation of stony banks, fixed dunes with herbaceous vegetation (grey dunes).	Habitat loss/change	The preferred strategy options have the potential to result in habitat change and damage during construction. <b>Potential for significant impact on coastal habitats through habitat change/loss from preferred strategy options.</b>	✓	No in-combination impacts have been identified.	N/A
1.12 Estuarine and intertidal habitats (estuaries, mudflats and sandflats not covered by seawater at low tide, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows	Habitat loss/change	The preferred strategy options have the potential to result in habitat change and damage during construction. <b>Potential for significant impact on estuarine/intertidal habitats through habitat change/loss from preferred strategy options.</b>	✓	No in-combination impacts have been identified.	N/A
1.13 Submerged marine habitats (sandbanks which are slightly covered by seawater all of the time, reefs)	Habitat loss/change	Options to HTL are not anticipated to affect marine habitats. NAI will allow the coastline to evolve under natural processes which will not affect the condition of the submerged marine habitats. Neither NAI nor MR are anticipated to affect the coastal dynamics of the estuary and offshore features, nor the existing sediment rich system.	x	No in-combination impacts have been identified.	N/A

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
		<b>No significant impact on submerged marine habitats through habitat change/loss from NAI/MR.</b>			
2.5 Anadromous fish (Sea lamprey, River lamprey)	Obstacles to migration	The strategy options will not introduce obstacles to migration (and any works to HTL will be undertaken within the existing footprint) and therefore no significant effects are anticipated.  <b>No significant impacts on anadromous fish from obstacles to migration.</b>	x	No in-combination impacts have been identified.	N/A
	Pollution/water quality	Preferred options for implementing MR and HTL are unlikely to affect the clean gravel beds that these species use for spawning, and NAI is not proposed to be implemented where there are known pollution risks.  <b>No significant impacts on non-migratory fish from pollution.</b>			
<p><i>Drigg Coast SAC:</i> <span style="float: right;"><i>11d5.1 Seascale</i></span>  <i>11d2.2 Stubb Place to Eskmeals Dunes</i> <span style="float: right;"><i>11d5.2 Seascale to Sellafield</i></span>  <i>11d3.2 Ravenglass</i></p>					
1.10 Coastal habitats (Atlantic decalcified fixed dunes, embryonic shifting dunes, shifting dunes along the shoreline with <i>Ammophila arenaria</i> , fixed dunes with herbaceous vegetation (grey dunes), dunes with <i>salix repens</i> )	Habitat loss/change	Strategy options to implement HTL and MR have the potential to result in habitat change and damage during construction including any works to reprofile the shingle ridge at Eskmeals Range.  <b>Potential for significant impact on coastal habitats through habitat change/loss from strategy.</b>	✓	<p>The Moorside project (approximately 5km to the north of Drigg Coast SAC) may have potential to affect existing patterns of sediment transport and related changes in coastal morphology (with resulting impacts on dune systems), but the strategic options to HTL from the Cumbria Coastal Strategy are unlikely to have in-combination impacts. <b>No in-combination impacts with Moorside project</b></p> <p>The associated North West Coast Connections project is not considered to have in-combination impacts on coastal habitats in this SAC as the majority of infrastructure works are on land (and the ventilation and emergency exit islet will be located in the centre of Morecambe Bay). <b>No in-combination impacts with the Connections proposals</b></p> <p>The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The Drigg Coast SAC was scoped out</p>	x

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
				of the mining proposals due to its distance and there is no likelihood of an in-combination impact on coastal habitats. <b>No in-combination impacts with West Cumbria mining proposals</b>	
1.11 Coastal habitats (sensitive to abstraction) (humid dune slacks)	Habitat loss/change	The preferred strategy options to implement HTL and MR have the potential to result in changes to the dune slacks and damage during construction including any works to reprofile the shingle ridge at Eskmeals Range. <b>Potential for significant impact on dune slacks through habitat change/loss from strategy.</b>	✓	The Moorside project (approximately 5km to the north of Drigg Coast SAC) may have potential to affect existing patterns of sediment transport and related changes in coastal morphology (with resulting impacts on dune systems), but the strategic options to HTL from the Cumbria Coastal Strategy are unlikely to have in-combination impacts. <b>No in-combination impacts with Moorside project</b>  The associated North West Coast Connections project is not considered to have in-combination impacts on coastal habitats in this SAC as the majority of infrastructure works are on land (and the ventilation and emergency exit islet will be located in the centre of Morecambe Bay). <b>No in-combination impacts with the Connections proposals</b>  The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The Drigg Coast SAC was scoped out of the mining proposals due to its distance and there is no likelihood of an in-combination impact on coastal habitats. <b>No in-combination impacts with West Cumbria mining proposals</b>	x
1.12 Estuarine and intertidal habitats (estuaries, mudflats and sandflats not covered by seawater at low tide, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows,	Habitat loss/change  Pollution	The preferred strategy options (e.g. defence improvements) have the potential to result in habitat change and damage during construction. <b>Potential for significant impact on estuarine/intertidal habitats through habitat change/loss from implementation of the preferred strategy.</b>	✓	There is potential for the Moorside project (approximately 5km to the north of Drigg Coast SAC) to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy. <b>Potential for in-combination impacts with Moorside project</b>  Network Rail proposals for embankment and revetment stabilisation works on the Eskmeals railway viaduct over the River Esk has potential for physical damage and loss to	✓

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
				<p>intertidal habitat, which could have in-combination impacts with the Cumbria Coastal Strategy.</p> <p><b>Potential for in-combination impacts with Network rail railway viaduct improvements</b></p> <p>The associated North West Coast Connections project is not considered to have in-combination impacts on intertidal/estuarine habitats in this SAC as the majority of infrastructure works are on land (and the ventilation and emergency exit islet will be located in the centre of Morecambe Bay).</p> <p><b>No in-combination impacts with Connections proposals</b></p> <p>The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The Drigg Coast SAC was scoped out of the mining proposals due to its distance and there is no likelihood of an in-combination impact on estuarine/intertidal habitats.</p> <p><b>No in-combination impacts with West Cumbria mining proposals</b></p>	
<p><b>Duddon Mosses SAC:</b>                      Duddon Estuary 11c16.7 Galloper Pool to viaduct                      Duddon Estuary 11c16.8 Duddon Estuary (inner)</p>					
<p>1.2 Bogs and wet habitats (active raised bogs, degraded raised bogs still capable of natural regeneration)</p>	<p>Habitat change/loss                      Hydrological change and lowering of water levels                      Invasion from invasive species                      Changes in air pollution</p>	<p>Continuing to carry out minor repairs to the railway embankment as a defence are not anticipated to affect the existing hydrology of the bogs, which are currently in favourable condition. However, any significant modification to the railway embankment structure by Network Rail has the potential to directly encroach on the bogs (which border the landward side of the embankment) and/or affect their hydrology.</p> <p><b>Potential for significant impact on active raised bogs and degraded raised bogs from preferred strategy options to</b></p>	<p>✓</p>	<p>No in-combination impacts have been identified.</p>	<p>N/A</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
		<p><b>implement HTL through possible hydrological change and encroachment.</b></p> <p>Implementation of MR in the inner estuary (up to the railway embankment) has the potential to affect (both positively and negatively) water levels and result in hydrological change to the bogs/wet habitats in the medium to long-term.</p> <p><b>Potential for significant impact on active raised bogs and degraded raised bogs from implementation of MR through hydrological change.</b></p> <p>The preferred strategy options will not introduce non-native species affecting the bogs.</p> <p><b>No significant impact on active raised bogs and degraded raised bogs from invasive species invasion.</b></p> <p>The preferred strategy options will not affect long-term air quality and therefore will have no impacts on the bogs.</p> <p><b>No significant impact on active raised bogs and degraded raised bogs from changes in air quality.</b></p>			
<p><b>Roudsea Wood and Mosses SAC:</b> Leven Estuary 11c12.1 Leven viaduct to Haverthwaite (left bank) and Haverthwaite to Greenodd (right bank)</p>					
<p>1.2 Bogs and wet habitats (active raised bogs, degraded raised bogs still capable of natural regeneration)</p>	<p>Hydrological change and lowering of water levels</p> <p>Invasion from invasive species</p> <p>Changes in air pollution</p>	<p>Continuing to carry out minor repairs to the defences in the short-term are not anticipated to affect the existing hydrology of the bogs.</p> <p>However, there is potential for implementation of MR in the medium and long-term to impact on bogs (both positively and negatively) through hydrological changes.</p> <p><b>Potential for significant impact on active raised bogs and degraded raised bogs from MR through hydrological and salinity changes/habitat change, dependent on extent and location of realignment.</b></p> <p>[It should be noted that a small (5ha) realignment opportunity has been identified on the eastern bank of the</p>	<p>✓</p>	<p>No in-combination impacts have been identified.</p>	<p>N/A</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
		Leven Estuary, as part of a separate project (Preliminary Assessment of Managed Realignment sites)].			
1.6 Dry woodland and scrub (Tilio-Acerion forests of slopes, screes and ravines, taxus baccata woods of the British Isles)	Hydrological change/ Changes in salinity	<p>Continuing to carry out minor repairs to the defences in the short-term are not anticipated to affect the existing woodland habitats.</p> <p>However, there is potential for implementation of MR in the medium and long-term to impact on the woodlands in the medium and long-term through changes in water levels and water chemistry.</p> <p><b>Potential for significant impact on woodlands from MR through hydrological and salinity changes/habitat change, dependent on extent and location of realignment.</b></p>	✓		
<p><b>Witherslack Mosses SAC:</b> Kent Estuary 11c9.3.1 (Hollins Well Road north) to 11c9.3.2 (Levens Bridge to Kent viaduct (west bank))</p>					
1.2 Bogs and wet habitats (active raised bogs, degraded raised bogs still capable of natural regeneration)	Habitat change/loss Hydrological change and lowering of water levels Invasion from invasive species Changes in air pollution	<p>Continuing to carry out minor repairs is not anticipated to affect the existing hydrology of the bogs. Any works will not directly encroach on the bogs, but realignment options have the potential to affect their hydrology.</p> <p><b>Potential for significant impact on active raised bogs and degraded raised bogs from future possible MR through possible hydrological change.</b></p> <p>The policies will not introduce non-native species affecting the bogs as any realignment would be carried out seaward of the bogs.</p> <p><b>No significant impact on active raised bogs and degraded raised bogs from invasive species invasion.</b></p> <p>The proposed policies will not affect long-term air quality and therefore will have no impacts on the bogs.</p> <p><b>No significant impact on active raised bogs and degraded raised bogs from changes in air quality.</b></p>	✓	No in-combination impacts have been identified.	N/A

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p><i>Morecambe Bay SAC: located on the Irish Sea coast of north-west England, within sub-cell 11c:</i></p> <p>11c8.4 (Meadow) to 11c8.6</p> <p><b>11c9.1 (Kent Viaduct to Dick fell Road)</b></p> <p><b>11c9.2 (Sandside) to Hollins Well Road</b></p> <p><b>11c9.3.1 (Hollins Well Road north to Levens Bridge (east bank)) to 11c9.3.2 (11c 9.3.2 - Levens Bridge (east bank) &amp; Levens Bridge to Kent viaduct (west bank))</b></p> <p><b>11c10.2 Humphrey Head to Cowpren Point</b></p> <p>11c11.3 Canal Foot</p> <p><b>11c11.4 Glaxo Factory</b></p> <p>11c11.5 Sandhall to Conishead Priory</p> <p>11c12.1 Leven viaduct to Haverthwaite (left bank) and Haverthwaite to Greenodd (right bank)</p> <p>11c12.2 Greenodd to Barrow End Rocks (A590)</p> <p><b>11c12.3.1 Old Railway Embankment</b></p> <p><b>11c12.3 Barrow End Rocks (A590) to Leven viaduct</b></p> <p><b>11c13.2 Newbiggin to Rampside</b></p> <p><b>11c13.3 Rampside</b></p> <p><b>11c13.4 Roa Island</b></p> <p>11c14.7 part of Area 2 Walney island</p> <p>11c14.7 part of Area 3 to Area 4 of Walney island and 11c14.3 and 11c14.1 (part) (to Area 8) Area 5- Area 6 of Walney island</p> <p>11c15.2 Westfield Point to Hindpool (Barrow in Furness)</p> <p>11c16.2 Askam-in-Furness</p> <p><b>11c16.3 Askam to Dunnerholme</b></p> <p><b>11c16.4 (Dunnerholme) to 11c16.5 (Kirkby-in-Furness)</b></p> <p>11c16.7 Galloper Pool to viaduct</p> <p>11c16.8 (Duddon Estuary (inner)) to 11c16.9 (Millom Marshes)</p> <p><b>11c16.10.1 Millom (old railway embankment)</b></p> <p><b>11c16.10 Millom Iron Works (industrial area)</b></p> <p><b>11c16.11 Hodbarrow Mains</b></p> <p><b>11d1.1 Hodbarrow Point to Haverigg</b></p> <p>11d1.2 Haverigg</p> <p>11d1.4HTL Silecroft (Hartress Hill)</p>					
<p>1.10 Coastal habitats (Perennial vegetation of stony banks, embryonic shifting dunes, shifting dunes along the shoreline with <i>Ammophila arenaria</i>, Atlantic decalcified fixed dunes, fixed dunes with herbaceous vegetation (grey dunes, dunes with <i>Salix repens</i>))</p>	<p>Habitat loss/change</p>	<p>Implementation of NAI/MR will allow the coastline to evolve under natural processes which will be beneficial to the coastal habitats and allow them to maintain their SSSI condition status in favourable condition.</p> <p><b>No significant impact on coastal habitats from implementation of NAI/MR</b></p> <p>Options to implement HTL in some policy units may involve increasing the footprint of defences or constructing new defences, which has the potential to directly impact on coastal habitats. Additionally, in some policy units (e.g. 9.2) continuing to maintain the line of defence may result in intertidal narrowing and impact coastal habitats (although in some areas these would be</p>	<p>✓</p>	<p>The Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme has the potential for in-combination impacts on coastal habitats in this SAC.</p> <p><b>Potential for in-combination impacts with Wyre strategy and beach management scheme</b></p> <p>The North-West SMP policies in the remainder of sub-cell 11c has the potential for in-combination impacts on coastal habitats in this SAC.</p> <p><b>Potential for in-combination impacts with SMP policies.</b></p> <p>The North West Coast Connections project has the potential for in-combination impacts on coastal habitats in this SAC as</p>	<p>✓</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
		<p>constrained by other man-made structures in the longer term).</p> <p><b>Potential for significant impact on coastal habitats from strategy options to implement HTL.</b></p>		<p>the ventilation and emergency exit islet will be located in the centre of Morecambe Bay.</p> <p><b>Potential in-combination impacts with North West Coast Connections project</b></p> <p>The record of the HRA undertaken for the Walney offshore wind farm extension screened out impacts on these coastal habitats, and there are unlikely to be in-combination impacts (the works area/areas of cable installation and rock protection for the offshore wind farm do not overlap with working areas for the Cumbria strategy).</p> <p><b>No in-combination impacts with Walney offshore wind farm extension</b></p>	
<p>1.11 Coastal habitats (sensitive to abstraction) (humid dune slacks, lagoons)</p>	<p>Habitat loss/change</p>	<p>There are no humid dune slacks in areas affected by strategy implementation. NAI at North Walney and Sandscale Hows will allow the coastline to evolve under natural processes which is likely to be beneficial to the humid dune slacks and allow them to roll back/maintain their SSSI condition status in favourable condition.</p> <p><b>No significant impact on humid dune slacks</b></p> <p>Implementation of NAI in the northern and southern parts of Walney Island and NAI in the short-term at Hodbarrow would allow natural evolution of coastal processes which is likely to be beneficial for the manmade lagoons (understood to be restricted to the gravel pits on Walney Island and at Hodbarrow Lagoon in the Duddon Estuary). Possible MR in the longer term at Hodbarrow could result in the loss of the lagoon.</p> <p><b>Potential significant impact on lagoon at Hodbarrow from MR.</b></p> <p>Preferred strategy options will not negatively affect the saline lagoon habitat enhancements at West Plain Marsh but may create opportunities to expand this area if successful.</p>	<p>✓</p>	<p>The Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme have the potential for impacts on coastal habitats in this SAC but are not anticipated to have in-combination impacts on the dune slacks at North Walney and Sandscale Hows.</p> <p><b>No in-combination impacts with Wyre strategy and beach management scheme</b></p> <p>The North-West SMP policies in the remainder of sub-cell 11c have the potential for impacts on coastal habitats in this SAC but are not anticipated to have in-combination impacts on the dune slacks.</p> <p><b>No in-combination impacts with SMP policies.</b></p> <p>The North West Coast Connections project has the potential for impacts on coastal habitats in this SAC but are not anticipated to have in-combination impacts on the dune slacks.</p> <p><b>No in-combination impacts with North West Coast Connections project</b></p> <p>The record of the HRA undertaken for the Walney offshore wind farm extension screened out impacts on these coastal habitats, and there are unlikely to be in-combination impacts (the works area/areas of cable installation and rock protection</p>	<p>x</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
				for the offshore wind farm do not overlap with working areas for the Cumbria strategy). <b>No in-combination impacts with Walney offshore wind farm extension</b>	
1.12 Estuarine and intertidal habitats (estuaries, mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows,	Habitat loss/change	<p>Implementation of NAI will allow the coastline to evolve under natural processes which will be beneficial to the estuarine and intertidal habitats.</p> <p><b>No significant impact on estuarine and intertidal habitats from implementation of NAI.</b></p> <p>Implementation of realignment to provide habitat creation may result in some changes to estuarine and intertidal habitats, which may result in significant impacts, both negative and positive.</p> <p><b>Potential for significant impact on estuarine and intertidal habitats from MR.</b></p> <p>Options to implement HTL in some policy units may involve increasing the footprint of defences or constructing new defences, which has the potential to directly impact on coastal habitats. Additionally, in some policy units continuing to maintain the line of defence may continue to cause coastal squeeze of coastal habitats (although in some areas these would be constrained by other man-made structures in the longer term).</p> <p><b>Potential for significant impact on coastal habitats from options to implement HTL</b></p>	✓	<p>The Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme has the potential for in-combination impacts on intertidal habitats in this SAC.</p> <p><b>Potential for in-combination impacts with Wyre strategy and beach management scheme</b></p> <p>The North-West SMP policies in the remainder of sub-cell 11c has the potential for in-combination impacts on intertidal habitats in this SAC.</p> <p><b>Potential for in-combination impacts with SMP policies.</b></p> <p>The North West Coast Connections project has the potential for in-combination impacts on intertidal habitats in this SAC as the ventilation and emergency exit islet will be located in the centre of Morecambe Bay).</p> <p><b>Potential in-combination impacts with North West Coast Connections project</b></p> <p>The record of the HRA undertaken for the Walney offshore wind farm extension screened in impacts on intertidal mudflats and sandflats not covered by seawater at low tide due to cable installation and associated rock armouring of cables. There is therefore potential for in-combination impacts with the Cumbria strategy.</p> <p><b>Potential in-combination impacts with Walney offshore wind farm extension</b></p>	✓
1.13 Submerged marine habitats (sandbanks which are slightly covered by seawater all of the time, reefs)	Habitat loss/change	<p>No works are proposed offshore and therefore would not impact directly on submerged marine habitats.</p> <p>NAI will allow the coastline to evolve under natural processes which will not affect the condition of the submerged marine habitats. Neither NAI nor MR are anticipated to affect the coastal dynamics of the estuary</p>	x	It is not anticipated that the Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme will affect submerged marine habitats in this SAC and will therefore be unlikely to have in-combination impacts with the Cumbria strategy.	X

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
		<p>and offshore features, nor the existing sediment rich system.</p> <p><b>No significant impact on submerged marine habitats from any strategic options.</b></p>		<p><b>No in-combination impacts with Wyre strategy and beach management scheme</b></p> <p>It is not anticipated that the North-West SMP policies in the remainder of sub-cell 11c will affect submerged marine habitats in this SAC and will therefore be unlikely to have in-combination impacts with the Cumbria strategy.</p> <p><b>No in-combination impacts with SMP policies</b></p> <p>The North West Coast Connections project has the potential to impact on submerged marine habitats in this SAC as the ventilation and emergency exit islet will be located in the centre of Morecambe Bay. However, as the strategy is not anticipated to affect the estuary dynamics, it is not anticipated that there will be any in-combination impacts with the Connections project.</p> <p><b>No in-combination impacts with North West Coast Connections project</b></p> <p>The record of the HRA undertaken for the Walney offshore wind farm extension screened out impacts on these marine habitats, and there are unlikely to be in-combination impacts (the works area/areas of cable installation and rock protection for the offshore wind farm do not overlap with working areas for the Cumbria strategy).</p> <p><b>No in-combination impacts with Walney offshore wind farm extension</b></p>	
<p>2.10 Great crested newt (GCN) <i>Triturus cristatus</i></p> <p>There is no site-specific information on this species available at present.</p>	<p>Habitat loss/change affecting GCN</p>	<p>Where the strategy is to implement NAI, the coastline will continue to evolve under natural processes and will not change the current situation.</p> <p><b>No significant impact on GCNs from implementation of NAI.</b></p> <p>Any works that affect the dune system has the potential to impact on habitats supporting great crested newts.</p> <p><b>Potential for significant impact on GCNs from implementation of HTL.</b></p>	<p>✓</p>	<p>It is not anticipated that the Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme will affect habitats supporting this species in this SAC and will therefore be unlikely to have in-combination impacts with the Cumbria strategy.</p> <p><b>No in-combination impacts with Wyre strategy and beach management scheme</b></p>	<p>✓</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
		<p>There is potential for MR to impact on habitats supporting GCNs, which would require further consideration at scheme level, following GCN survey.</p> <p><b>Potential for significant impact on GCN from MR (insufficient information on species available at this stage to appraise)</b></p>		<p>The remaining SMP policies have the potential for in-combination impacts on habitats supporting great crested newts in this SAC.</p> <p><b>Potential in-combination impacts with remaining SMP policies</b></p> <p>The North West Coast Connections project has the potential for in-combination impacts on habitats supporting this species as much of the work will be carried out over land.</p> <p><b>Potential in-combination impacts with North West Coast Connections project</b></p> <p>The Walney offshore wind farm extension will not affect terrestrial habitats supporting this species, and there will be no in-combination impacts with the Cumbria strategy.</p> <p><b>No in-combination impacts with Walney offshore wind farm extension</b></p>	

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p><b>Upper Solway Flats and Marshes SPA/Ramsar:</b></p> <p><b>11e2.9 Steel Works to The Howe</b></p> <p><b>11e2.10 The Howe to Workington Harbour south breakwater</b></p> <p>11e2.11 Workington Harbour</p> <p><b>11e3.1 Workington Harbour to Siddick</b></p> <p><b>11e3.2 Siddick to Risehow</b></p> <p>11e3.4 (Maryport Harbour and Marina) to 11e3.5 (Maryport Harbour to Roman Fort)</p> <p>11e4.2 Roman Fort to Bank End</p> <p><b>11e4.3 Maryport Golf Course to Allonby</b></p> <p><b>11e4.4 Allonby</b></p> <p><b>11e4.5 Allonby to Seacroft Farm</b></p> <p><b>11e4.6 Seacroft Farm to Dubmill Point</b></p>		<p><b>11e5.1 Dubmill Point to Silloth</b></p> <p>11e6.1 (Silloth Harbour) to <b>11e6.2 Skinburness (open coast)</b></p> <p>11e7.1 Skinburness (east)</p> <p>11e7.2 Skinburness to Wath Farm</p> <p>11e7.3 (Wath Farm) to 11e7.5 (Anthorn including Wampool to NTL)</p> <p>11e7.6 (Anthorn)</p> <p>11e7.7 (Anthorn to Cardurnock)</p> <p>11e8.1 (Cardurnock to Bowness-on-Solway)</p> <p><b>11e8.2 Bowness-on-Solway</b></p> <p>11e8.3 (Bowness-on-Solway) to 11e8.6 (Rockcliffe)</p> <p><b>11e8.7 Rockcliffe</b></p> <p>11e8.8 (Rockcliffe) to 11e8.9 (Metal Bridge (Esk))</p> <p>11e8.10 Metal Bridge (Esk) to the River Sark</p>			
<p><b>Article 4.1: overwintering populations of Annex 1 species:</b></p> <p>Whooper swan <i>Cygnus Cygnus</i>, Golden plover <i>Pluvialis apricaria</i>, Bar-tailed godwit <i>Limosa lapponica</i>, Barnacle goose <i>Branta leucopsis</i> (JNCC)</p> <p>[Note the SNH citation excludes Bar-tailed godwit].</p> <p><b>Article 4.2: populations of migratory species:</b></p> <p>Ringed Plover <i>Charadrius hiaticula</i> (on passage) and overwintering - Curlew <i>Numenius arquata</i>,</p>	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the SPA from habitat change.</b></p>	<p>✓</p>	<p>No in-combination impacts have been identified.</p>	<p>N/A</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p>Dunlin <i>Calidris alpina alpina</i>, Knot <i>Calidris canutus</i>, Oystercatcher <i>Haematopus ostralegus</i>, Pink-footed Goose <i>Anser brachyrhynchus</i>, Pintail <i>Anas acuta</i> and Redshank <i>Tringa tetanus</i> (JNCC).</p> <p>[Note the SNH citation also includes Scaup, Bar-tailed godwit but excludes Ringed plover and Dunlin in the international numbers. The SNH citation also notes nationally important numbers Shelduck, Teal, shoveler, Goldeneye, Grey plover, Sanderling, Dunlin and Turnstone.</p> <p><b>Article 4.2: regularly supporting at least 20,000 waterfowl</b></p>					
<p>Criterion 2: Supports over 10% of the British population of Natterjack toad</p>	<p>Habitat loss/change</p>	<p>The Natterjack toad is currently supported in the Solway Merse between Powfoot and Caerlaverock within this Ramsar site in Scotland, which will be unaffected by the Strategy.</p> <p>The Natterjack toad is also currently breeding in ephemeral ponds in the sand dunes at the Grune (which will not be affected by strategy implementation) and at Anthorn. At this latter site, there is potential for habitat change or loss of toad breeding sites due to potential realignment proposals at 11e7.5.</p> <p><b>Uncertain impact on Natterjack toad around Anthorn from realignment in 11e7.5.</b></p>	<p>✓</p>	<p>No in-combination impacts have been identified.</p>	<p>N/A</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p>Ramsar Criterion 5: internationally important assemblage (species with peak counts in winter): 135720 waterfowl (5 year peak mean 1998/99-2002/2003)</p> <p>Criterion 6: Species/populations occurring at levels of international importance: Species with peak counts in spring/autumn: Ringed plover.</p> <p>Species with peak counts in winter: Barnacle goose, Svalbard, Red knot, Curlew, Common Redshank, Dunlin, Pink-footed goose, Northern pintail and Bar-tailed godwit</p> <p>Species/populations identified subsequent to designation for possible future consideration under criterion 6. Breeding season: Lesser black-backed gull, Herring gull. Peak counts in spring/autumn: Ringed plover. Peak counts in winter: Dunlin.</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the Ramsar from habitat change.</b></p>	<p>✓</p>	<p>No in-combination impacts have been identified.</p>	<p>N/A</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p><b>Solway Firth pSPA:</b></p> <p><i>11d5.1 Seascale</i> <span style="float: right;"><i>11e3.4 Maryport Harbour and Marina)</i></span></p> <p><i>11d5.2 Seascale to Sellafield</i> <span style="float: right;"><i>11e4.1 Maryport Harbour to Roman Fort</i></span></p> <p><i>11d5.3 Sellafield</i> <span style="float: right;"><i>11e4.2 Roman Fort to Bank End</i></span></p> <p><i>11d5.4 Sellafield to Braystones</i> <span style="float: right;"><b>11e4.3 Maryport Golf Course to Allonby</b></span></p> <p><i>11d5.5 Braystones, Nethertown and Couderton</i> <span style="float: right;"><b>11e4.4 Allonby</b></span></p> <p><i>11d5.6 Couderton to Seamill</i> <span style="float: right;"><b>11e4.5 Allonby to Seacroft Farm</b></span></p> <p><i>11d5.7 Seamill to Pow Beck</i> <span style="float: right;"><b>11e4.6 Seacroft Farm to Dubmill Point</b></span></p> <p><i>11d6.1 Pow Beck to St Bees Promenade</i> <span style="float: right;"><b>11e5.1 Dubmill Point to Silloth</b></span></p> <p><i>11d6.2 St Bees Promenade</i> <span style="float: right;"><i>11e6.1 Silloth Harbour</i></span></p> <p><i>11e1.2 Saltom Pit</i> <span style="float: right;"><b>11e6.2 Silloth to Skinburness (open coast)</b></span></p> <p><b>11e1.4 Whitehaven South Beach</b> <span style="float: right;"><i>11e7.1 Skinburness (east)</i></span></p> <p><i>11e2.1 Whitehaven Harbour and north beach</i> <span style="float: right;"><i>11e7.2 Skinburness to Wath Farm</i></span></p> <p><b>11e2.2 (Bransty) to 11e2.4 (Harrington Parks)</b> <span style="float: right;"><i>11e7.3 (Wath Farm to Saltcoates) to 11e7.5 (Newton Marsh to Anthorn including Wampool to NTL)</i></span></p> <p><b>11e2.5 Harrington Parks to Harrington Harbour</b> <span style="float: right;"><i>11e7.6 Anthorn</i></span></p> <p><i>11e2.6 Harrington Harbour</i> <span style="float: right;"><i>11e7.7 (Anthorn to Cardurnock) and 11e8.1 (Cardurnock to Bowness-on-Solway)</i></span></p> <p><b>11e2.7 (Harrington) to 11e2.8 (Steel Works Site)</b> <span style="float: right;"><b>11e8.2 Bowness-on-Solway</b></span></p> <p><b>11e2.9 Steel Works to The Howe</b> <span style="float: right;"><i>11e8.3 (Bowness-on-Solway to Drumburgh) to 11e8.6 (Kingmoor to Rockcliffe)</i></span></p> <p><b>11e2.10 The Howe to Workington Harbour south breakwater</b> <span style="float: right;"><b>11e8.7 Rockcliffe</b></span></p> <p><i>11e2.11 Workington Harbour</i> <span style="float: right;"><i>11e8.8 (Rockcliffe to Demesne Farm) to 11e8.9 (Demesne Farm to Metal Bridge (Esk))</i></span></p> <p><b>11e3.1 Workington Harbour to Siddick</b> <span style="float: right;"><i>11e8.10 (Metal Bridge (Esk) to the River Sark)</i></span></p> <p><b>11e3.2 Siddick to Risehow</b></p>					
<p><b>Inclusion of additional species to those described under Upper Solway Flats and Marshes SPA:</b></p>	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>Common scoter and red throated diver, as additional species included within the marine extension do not extend east of Silloth. Any policy changes in units 11e6.1 to 11e8.10 are therefore screened out of further assessment for the <u>common scoter and red-throated diver in the proposed extension</u>, as their non-breeding distributions do not extend to these policy units.</p>	<p>✓</p>	<p>The West Cumbria mining proposal was considered with regard to in-combination impacts but will not be considered further during this HRA. The Solway Firth pSPA was scoped out of the mining proposals assessment as none of the species included within the pSPA citation are likely to occur within any of the zones directly affected by the mining development, and underground mining operations are considered unlikely to</p>	<p>x</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p><b>Wintering species to be included in the proposed marine extension</b> Common Scoter, Goosander, Red-throated diver.</p> <p><b>Proposed additions to the existing part of the SPA</b> Black-headed gull, Common gull, Cormorant, Herring gull, Lapwing, Ringed plover.</p>		<p>However, in the remaining relevant policy units, there is potential for the strategy to alter the availability and distribution of habitat for these birds in the Solway Firth.</p> <p>Goosander and the birds included in the existing SPA may be found close to all policy stretches in the Solway and there is therefore potential for the strategy to alter the availability and distribution of habitat for these species.</p> <p>Although the advice note for the pSPA indicates that coastal protection and flood defence are not considered likely to affect the qualifying features of the pSPA (other than insignificantly), there is some potential and therefore options to implement HTL, NAI and MR will proceed to Appropriate Assessment.</p> <p><b>Potential for significant impacts on qualifying birds in the proposed marine extension (except common scoter and red throated diver in policy units 11e6.1 to 11e8.10) from habitat change.</b></p> <p><b>Potential for significant impacts on additional qualifying birds in the existing part of the pSPA from habitat change.</b></p>		<p>have any significant impact upon off-shore habitats used by these species. There is therefore no likelihood of an in-combination impact on these qualifying birds.</p> <p><b>No in-combination impacts</b></p>	

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p><b>Morecambe Bay and Duddon Estuary SPA, Morecambe Bay Ramsar, Duddon Estuary Ramsar birds:</b></p> <p>11c8.4 (Meadow) to 11c8.6</p> <p><b>11c9.1 (Kent Viaduct to Dick fell Road)</b></p> <p><b>11c9.2 (Sandside) to Hollins Well Road</b></p> <p><b>11c9.3.1 (Hollins Well Road north to Levens Bridge (east bank)) to 11c9.3.2 (11c 9.3.2 - Levens Bridge (east bank) &amp; Levens Bridge to Kent viaduct (west bank))</b></p> <p><b>11c10.2 Humprey Head to Cowpren Point</b></p> <p>11c11.3 Canal Foot</p> <p><b>11c11.4 Glaxo Factory</b></p> <p>11c11.5 Sandhall to Conishead Priory</p> <p>11c12.1 Leven viaduct to Haverthwaite (left bank) and Haverthwaite to Greenodd (right bank)</p> <p>11c12.2 Greenodd to Barrow End Rocks (A590)</p> <p><b>11c12.3.1 Old Railway Embankment</b></p> <p><b>11c12.3 Barrow End Rocks (A590) to Leven viaduct</b></p> <p><b>11c13.2 Newbiggin to Rampside</b></p> <p><b>11c13.3 Rampside</b></p> <p><b>11c13.4 Roa Island</b></p> <p>11c14.7 part of Area 2 Walney island</p> <p>11c14.7 part of Area 3 to Area 4 of Walney island and 11c14.3 and 11c14.1 (part) (to Area 8)</p> <p>11c14.5, 11c14.2 (part), 11c14.1 (part) Strategy Benefit Area 5: Nanny Point Scar to Hillock Whins (unit 5) and Biggar to Tummer Hill (unit 8). Area 5- Area 6 of Walney island</p> <p>11c14.4 Strategy Benefit Area 6: Hillock Whins to Hare Hill</p> <p>11c15.2 Westfield Point to Hindpool (Barrow in Furness)</p> <p>11c16.2 Askam-in-Furness</p> <p><b>11c16.3 Askam to Dunnerholme</b></p> <p><b>11c16.4 (Dunnerholme) to 11c16.5 (Kirkby-in-Furness)</b></p> <p>11c16.7 Galloper Pool to viaduct</p> <p>11c16.8 (Duddon Estuary (inner)) to 11c16.9 (Millom Marshes)</p> <p><b>11c16.10.1 Millom (old railway embankment)</b></p> <p><b>11c16.10 Millom Iron Works (industrial area)</b></p> <p><b>11c16.11 Hodbarrow Mains</b></p> <p><b>11d1.1 Hodbarrow Point to Haverigg</b></p> <p>11d1.2 Haverigg</p> <p>11d1.4 Silecroft (Hartress Hill)</p> <p><b>11d2.2 Stubb Place to Eskmeals Dunes</b></p> <p>11d3.2 Ravenglass</p> <p><b>11d5.1 Seascale</b></p> <p><b>11d5.2 Seascale to Sellafield</b></p> <p><b>11d5.3 Sellafield</b></p> <p><b>11d5.4 Sellafield to Braystones</b></p> <p><b>11d5.5 Braystones, Nethertown and Coulderton</b></p> <p><b>11d5.6 Coulderton to Seamill</b></p> <p><b>11d5.7 Seamill to Pow Beck</b></p> <p>11d6.1 Pow Beck to St Bees Promenade</p> <p><b>11d6.2 St Bees Promenade</b></p>					
<p>Article 4.1: regularly used by 1% or more of Annex 1 species:</p> <p>Whooper swan <i>Cygnus Cygnus</i>, Little egret <i>Egretta garzetta</i>, Golden</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the SPA from habitat change.</b></p>	<p>✓</p>	<p>The Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme has the potential for in-combination impacts on habitats supporting these species in this SAC.</p> <p><b>Potential for in-combination impacts with Wyre strategy and beach management scheme</b></p>	<p>✓</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p>plover <i>Pluvialis apricaria</i>, Bar-tailed godwit <i>Limosa lapponica</i>, Ruff <i>Calidris pugnax</i>, Mediterranean gull <i>Larus melancephalus</i>, Little tern <i>Sterna albifrons</i> (breeding), Sandwich tern <i>Sterna sandvicensis</i> (breeding), and Common tern <i>Sterna hirundo</i> (breeding),</p>	<p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to result in noise/visual disturbance during construction works with associated displacement of qualifying birds, and the construction of new structures may result in barrier effects. <b>Potential for significant impacts on qualifying birds in the SPA from disturbance and barrier effects.</b></p>		<p>The North-West SMP policies in the remainder of sub-cell 11c has the potential for in-combination impacts on habitats supporting these species in this SAC. <b>Potential for in-combination impacts with SMP policies.</b></p> <p>There is potential for the Moorside project to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy on coastal habitats supporting qualifying birds. <b>Potential for in-combination impacts with Moorside project</b></p> <p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species. <b>Potential for in-combination impacts with North-West Coast Connections project</b></p> <p>The Walney offshore wind farm is within the foraging range of many of the qualifying SPA bird species and there is therefore potential for in-combination disturbance/displacement impacts with the Cumbria strategy <b>Potential in-combination impacts with Walney offshore wind farm extension</b></p>	
<p>Article 4.2: regularly used by 1% or more of regularly occurring migratory species (non-breeding) (not listed above): Pink-footed goose <i>Anser brachyrhyncus</i>, Common shelduck <i>Tadorna tadorna</i>, Northern pintail <i>Anas acuta</i>, Eurasian oystercatcher</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing  Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds. <b>Potential for significant impacts on qualifying birds in the SPA from habitat change.</b></p>	✓	<p>The Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme has the potential for in-combination impacts on habitats supporting these species in this SAC. <b>Potential for in-combination impacts with Wyre strategy and beach management scheme</b></p> <p>The North-West SMP policies in the remainder of sub-cell 11c has the potential for in-combination impacts on habitats supporting these species in this SAC. <b>Potential for in-combination impacts with SMP policies.</b></p>	✓

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p><i>Haematopus ostralegus</i> and Grey plover <i>Pluvialis squatarola</i></p>				<p>There is potential for the Moorside project to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy on coastal habitats supporting qualifying birds.</p> <p><b>Potential for in-combination impacts with Moorside project</b></p> <p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species.</p> <p><b>Potential for in-combination impacts with North-West Coast Connections project</b></p> <p>The Walney offshore wind farm is within the foraging range of many of the qualifying SPA bird species and there is therefore potential for in-combination disturbance/displacement impacts with the Cumbria strategy</p> <p><b>Potential in-combination impacts with Walney offshore wind farm extension</b></p>	
<p>Morecambe Bay Ramsar criterion 4: staging area for migratory waterfowl including ringed plover</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the Ramsar from habitat change.</b></p>	<p>✓</p>	<p>The Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme has the potential for in-combination impacts on habitats supporting these species in this SAC.</p> <p><b>Potential for in-combination impacts with Wyre strategy and beach management scheme</b></p> <p>The North-West SMP policies in the remainder of sub-cell 11c has the potential for in-combination impacts on habitats supporting these species in this SAC.</p> <p><b>Potential for in-combination impacts with SMP policies.</b></p> <p>There is potential for the Moorside project to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy on coastal habitats supporting qualifying birds.</p> <p><b>Potential for in-combination impacts with Moorside project</b></p>	<p>✓</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
				<p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species.</p> <p><b>Potential for in-combination impacts with North-West Coast Connections project</b></p> <p>The Walney offshore wind farm is within the foraging range of many of the qualifying SPA bird species and there is therefore potential for in-combination disturbance/displacement impacts with the Cumbria strategy</p> <p><b>Potential in-combination impacts with Walney offshore wind farm extension</b></p>	
<p>Duddon Estuary Ramsar criterion 4: nationally important waterfowl during spring and autumn passage</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the Ramsar from habitat change.</b></p>	<p>✓</p>	<p>There is potential for the Moorside project to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy on coastal habitats supporting qualifying birds.</p> <p><b>Potential for in-combination impacts with Moorside project</b></p> <p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species.</p> <p><b>Potential for in-combination impacts with North-West Coast Connections project</b></p>	<p>✓</p>
<p>Duddon Estuary Ramsar criterion 5: Internationally important assemblage: peak counts in winter, 26326 waterfowl (5 year peak mean 1998/99-2002/2003)</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the Ramsar from habitat change.</b></p>	<p>✓</p>	<p>There is potential for the Moorside project to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy on coastal habitats supporting qualifying birds.</p> <p><b>Potential for in-combination impacts with Moorside project</b></p> <p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species.</p> <p><b>Potential for in-combination impacts with North-West Coast Connections project</b></p>	<p>✓</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p>Morecambe Bay Ramsar Criterion 6: Regularly supporting breeding Lesser black-backed gull, Herring gull and Sandwich tern.</p> <p>Peak counts in spring/autumn: Great cormorant, Shelduck, Northern pintail, Common eider, Oystercatcher, Ringed plover, Grey plover, Sanderling, Curlew, Redshank, Ruddy turnstone, Lesser black-backed gull.</p> <p>Peak counts in winter: Great crested grebe, Pink-footed goose, Wigeon, Goldeneye, Red-breasted merganser, Golden plover, Northern lapwing, Red knot, Dunlin, and Bar-tailed godwit</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the Ramsar from habitat change.</b></p>		<p>The Wyre flood and coastal defence strategy plan and associated Wyre beach management scheme has the potential for in-combination impacts on habitats supporting these species in this SAC.</p> <p><b>Potential for in-combination impacts with Wyre strategy and beach management scheme</b></p> <p>The North-West SMP policies in the remainder of sub-cell 11c has the potential for in-combination impacts on habitats supporting these species in this SAC.</p> <p><b>Potential for in-combination impacts with SMP policies.</b></p> <p>There is potential for the Moorside project to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy on coastal habitats supporting qualifying birds.</p> <p><b>Potential for in-combination impacts with Moorside project</b></p> <p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species.</p> <p><b>Potential for in-combination impacts with North-West Coast Connections project</b></p> <p>The HRA record for the Walney Island project screened in potential turbine impacts on breeding lesser black-backed gull and herring gull and there is therefore potential for in-combination impacts on these species with the Cumbria strategy. The Walney Island project restricts timing of construction to avoid disturbance to overwintering birds and therefore there are not anticipated to be any in-combination impacts on overwintering species.</p> <p><b>Potential in-combination impacts with Walney offshore wind farm extension</b></p>	

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
<p>Duddon Estuary Ramsar Criterion 6: Peak counts in winter: Northern pintail, Common redshank, Red knot.</p>	<p>Habitat loss/change affecting feeding, roosting, breeding and loafing</p> <p>Disturbance through displacement and barrier effects</p>	<p>There is potential for the strategy to alter the availability and distribution of habitat for the qualifying birds.</p> <p><b>Potential for significant impacts on qualifying birds in the Ramsar from habitat change.</b></p>	<p>✓</p>	<p>There is potential for the Moorside project to affect existing patterns of sediment transport and related changes in coastal morphology, and thus have in-combination impacts with the Cumbria Coastal Strategy on coastal habitats supporting qualifying birds.</p> <p><b>Potential for in-combination impacts with Moorside project</b></p> <p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species.</p> <p><b>Potential for in-combination impacts with North-West Coast Connections project</b></p>	<p>✓</p>
<p><b>Duddon Estuary Ramsar site: Criterion 2 only (the remaining qualifying features are integrated above):</b></p> <p><b>11c13.2 Newbiggin to Rampside</b></p> <p><b>11c13.3 Rampside</b></p> <p><b>11c13.4 Roa Island</b></p> <p>11c14.7 part of Area 2 Walney island</p> <p>11c14.7 part of Area 3 to Area 4 of Walney island and 11c14.3 and 11c14.1 (part) (to Area 8)</p> <p>11c14.5, 11c14.2 (part), 11c14.1 (part) Strategy Benefit Area 5: Nanny Point Scar to Hillock Whins (unit 5) and Biggar to Tummer Hill (unit 8). Area 5- Area 6 of Walney Island.</p> <p>11c14.4 Strategy Benefit Area 6: Hillock Whins to Hare Hill</p> <p>11c15.2 Westfield Point to Hindpool (Barrow in Furness)</p> <p>11c16.2 Askam-in-Furness</p> <p>11c16.3 Askam to Dunnerholme</p> <p>11c16.4 (Dunnerholme) to 11c16.5 (Kirkby-in-Furness)</p> <p>11c16.7 Galloper Pool to viaduct</p> <p>11c16.8 (Duddon Estuary (inner)) to 11c16.9 (Millom Marshes)</p> <p><b>11c16.10.1 Millom (old railway embankment)</b></p> <p><b>11c16.10 Millom Iron Works (industrial area)</b></p> <p><b>11c16.11 Hodbarrow Mains</b></p> <p><b>11d1.1 Hodbarrow Point to Haverigg</b></p> <p>11d1.2 Haverigg</p> <p>11d1.4 Silecroft (Hartress Hill)</p> <p><b>11d2.2 Stubb Place to Eskmeals Dunes</b></p> <p>11d3.2 Ravenglass</p>					
<p>Natterjack toad</p>	<p>Habitat change/loss</p>	<p>There is potential for the strategy to result in changes to habitat supporting this species, particularly at known breeding locations such as at Millom Ironworks and Haverigg dunes.</p> <p><b>Potential for significant impacts on Natterjack toads in the Ramsar from habitat change (insufficient information available at this stage to appraise).</b></p>	<p>✓</p>	<p>The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species.</p> <p><b>Potential for in-combination impacts with North-West Coast Connections project</b></p>	<p>✓</p>

EA habitat/species group	Risk	Likely significant effect alone	Yes (✓)/ No (x)	Likely significant effect in combination	Yes (✓)/ No (x)
Rich assemblage of wetland plants and invertebrates - at least one nationally scarce plant and at least two British Red Data Book invertebrates.	Habitat change/loss	There is potential for the strategy to result in changes to habitat supporting these floral and invertebrate species. <b>Potential for significant impacts on plants and invertebrates in the Ramsar from habitat change.</b>	✓	The associated North West Coast Connections project could also have in-combination impacts on habitats supporting these species. <b>Potential for in-combination impacts with North-West Coast Connections project</b>	✓

## 7 Conclusions of HRA Screening

The screening assessment has identified that some of the Strategy proposals could have a likely significant effect (or the risk of this remains uncertain and hence the precautionary principle applies) on features of several European and Ramsar sites (see Table 7.1). Consequently, these need to be subject to an appropriate assessment.

**This screening of significant effects has been sent to Natural England/Scottish Natural Heritage for consultation.**

**Table 7.1. European site qualifying features subject to appropriate assessment, following Stage 1**

Qualifying Feature	Timescale/ scenario	Risk	Potential for Likely significant effect (LSE) alone	LSE in combination
<b>River Eden SAC</b>				
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicion albae)	Short-term onwards	Habitat change/salinity change from implementation of MR due to habitat loss/salinity change	Yes	No
<b>South Solway Mosses SAC</b>				
Active raised bogs and degraded raised bogs still capable of natural regeneration	Short-term onwards	Hydrological change from implementation of MR	Yes	No
<b>Solway Firth SAC</b>				
Coastal habitats - Perennial vegetation of stony banks, fixed dunes with herbaceous vegetation (grey dunes).	Short-term onwards	Habitat loss/change from implementation of MR, NAI and HTL	Yes	No
Estuarine and intertidal habitats - estuaries, mudflats and sandflats not covered by seawater at low tide, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows	Short-term onwards	Habitat loss/change from implementation of MR, NAI and HTL	Yes	No
<b>Drigg Coast SAC</b>				
Coastal habitats - Atlantic decalcified fixed dunes, embryonic shifting dunes, shifting dunes along the shoreline with <i>Ammophila arenaria</i> , fixed dunes with herbaceous vegetation (grey dunes), dunes with <i>salix repens</i> )	Short-term onwards	Habitat loss/change from implementation of MR, NAI and HTL	Yes	No
Coastal habitats – humid dune slacks	Short-term onwards	implementation of Habitat loss/change from MR, NAI and HTL	Yes	No
Estuarine and intertidal habitats - estuaries, mudflats and sandflats not covered by seawater at low tide, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows,	Short-term onwards	Habitat loss/change from implementation of MR, NAI and HTL	Yes	Yes – Moorside and Eskmeals Viaduct improvement works
<b>Duddon Mosses SAC</b>				
Active raised bogs and degraded raised bogs still capable of natural regeneration	Short-term onwards	Hydrological change and habitat loss/change from implementation of HTL and MR	Yes	No
<b>Roudsea Wood and Mosses SAC</b>				
Active raised bogs and degraded raised bogs still capable of natural regeneration	Medium-term onwards	Hydrological/salinity change and habitat loss/change from implementation of MR	Yes	No

Qualifying Feature	Timescale/ scenario	Risk	Potential for Likely significant effect (LSE) alone	LSE in combination
Dry woodland and scrub - Tilio-Acerion forests of slopes, screes and ravines, taxus baccata woods of the British Isles	Medium-term onwards	Hydrological/salinity change and habitat loss/change from implementation of MR	Yes	No
<b>Witherslack Mosses SAC</b>				
Active raised bogs and degraded raised bogs still capable of natural regeneration	Medium-term onwards	Hydrological change and habitat loss/change from implementation of MR	Yes	No
<b>Morecambe Bay SAC</b>				
Coastal habitats - Perennial vegetation of stony banks, embryonic shifting dunes, shifting dunes along the shoreline with <i>Ammophila arenaria</i> , Atlantic decalcified fixed dunes, fixed dunes with herbaceous vegetation (grey dunes, dunes with <i>Salix repens</i> )	Short-term onwards	Habitat loss/change from implementation of HTL	Yes	Yes – Wyre strategy/beach management, NW SMP policies, North West Coast Connections project
Coastal habitats – lagoon at Hodbarrow	Longer term	Habitat loss from potential implementation of MR	Yes	No
Estuarine and intertidal habitats - estuaries, mudflats and sandflats not covered by seawater at low tide, large shallow inlets and bays, <i>Salicornia</i> and other annuals colonising mud and sand, Atlantic salt meadows,	Short-term onwards	Habitat loss/change from implementation of HTL and MR	Yes	Yes – Wyre strategy/beach management, NW SMP policies, North West Coast Connections project
Great crested newt	Short-term onwards	Habitat loss from implementation of MR and HTL	Yes	Yes – NW SMP policies, North West Coast Connections project
<b>Upper Solway Flats and Marshes SPA</b>				
Article 4.1: overwintering populations of Annex 1 species: Whooper swan, Golden plover, Bar-tailed godwit, Barnacle goose (JNCC) [Note the SNH citation excludes Bar-tailed godwit]. Article 4.2: supporting populations of following migratory species: Ringed Plover (on passage) and overwintering - Curlew, Dunlin, Knot, Oystercatcher, Pink-footed Goose, Pintail and Redshank (JNCC). [Note the SNH citation also includes Scaup, Bar-tailed godwit but excludes Ringed plover and Dunlin in the international numbers. The SNH citation also notes nationally important numbers Shelduck, Teal, Shoveler, Goldeneye, Grey Plover, Sanderling, Dunlin and Turnstone. <b>Article 4.2: regularly supporting at least 20,000 waterfowl</b>	Short-term onwards	Habitat loss/change affecting feeding, roosting and loafing from implementation of HTL, NAI, MR  Disturbance through displacement from implementation of HTL, NAI, MR	Yes	No

Qualifying Feature	Timescale/ scenario	Risk	Potential for Likely significant effect (LSE) alone	LSE in combination
<b>Solway Firth pSPA</b>				
Wintering species to be included in the proposed marine extension: Common Scoter, Goosander, Red-throated diver	Short-term onwards	Habitat loss/change affecting feeding, roosting and loafing  Disturbance through displacement  See relevant policies – excluding common scoter and red throated diver in units 11e6.1 to 11e8.10	Yes	No
Proposed additions to the existing part of the SPA: Black-headed gull, Common gull, Cormorant, Herring gull, Lapwing, Ringed plover	Short-term onwards	Habitat loss/change affecting feeding, roosting and loafing  Disturbance through displacement	Yes	No
<b>Morecambe Bay and Duddon Estuary SPA</b>				
Article 4.1: regularly used by 1% or more of Annex 1 species: Whooper swan, Little egret, Golden plover, Bar-tailed godwit, Ruff, Mediterranean gull, Little tern (breeding), Sandwich tern (breeding), and Common tern (breeding),	Short-term onwards	Habitat loss/change affecting feeding, roosting and loafing  Disturbance through displacement	Yes	Yes – Wyre strategy/beach management, NW SMP policies, North West Coast Connections project, Moorside and Walney offshore extension
Article 4.2: regularly used by 1% or more of regularly occurring migratory species (non-breeding) (not listed above): Pink-footed goose, Common shelduck, Northern pintail, Eurasian oystercatcher and Grey plover	Short-term onwards	Habitat loss/change affecting feeding, roosting and loafing  Disturbance through displacement	Yes	Yes – Wyre strategy/beach management, NW SMP policies, North West Coast Connections project, Moorside and Walney offshore extension
<b>Morecambe Bay Ramsar</b>				
Criterion 4: staging area for migratory waterfowl including Ringed plover	Short-term onwards	Habitat loss/change affecting feeding, roosting and loafing  Disturbance through displacement	Yes	Yes – Wyre strategy/beach management, NW SMP policies, North West Coast Connections project, Moorside and Walney offshore extension
Criterion 5: Internationally important assemblage: peak counts in winter, 26326 waterfowl (5 year peak mean 1998/99-2002/2003)	Short-term onwards	Habitat loss/change affecting feeding, roosting and loafing  Disturbance through displacement	Yes	Yes – Wyre strategy/beach management, NW SMP policies, North West Coast Connections project, Moorside and Walney offshore extension

Qualifying Feature	Timescale/ scenario	Risk	Potential for Likely significant effect (LSE) alone	LSE in combination
<p>Criterion 6: Regularly supporting breeding Lesser black-backed gull, Herring gull and Sandwich tern.</p> <p>Peak counts in spring/autumn: Great cormorant, Shelduck, Northern pintail, Common eider, Oystercatcher, Ringed plover, Grey plover, Sanderling, Curlew, Redshank, Ruddy turnstone, Lesser black-backed gull.</p> <p>Peak counts in winter: Great crested grebe, Pink-footed goose, wigeon, Goldeneye, Red-breasted merganser, Golden plover, Northern lapwing, Red knot, Dunlin, and Bar-tailed godwit</p>	Short-term onwards	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement</p>	Yes	Yes – Wyre strategy/beach management, NW SMP policies, North West Coast Connections project, Moorside and Walney offshore extension
<b><i>Duddon Estuary Ramsar</i></b>				
<p>Criterion 2: Supports nationally important numbers of Natterjack toads.</p> <p>Rich assemblage of wetland plants and invertebrates - at least one nationally scarce plant and at least two British Red Data Book invertebrates.</p>	Short-term onwards	<p>Habitat loss/change affecting breeding of natterjack toads at Millom Ironworks and Haverigg dunes, and loss of habitat supporting Ramsar flora and invertebrates</p>	Yes	Yes – North West Coast Connections project
<p>Criterion 4: nationally important waterfowl during spring and autumn passage</p>	Short-term onwards	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement</p>	Yes	Yes – North West Coast Connections project and Moorside
<p>Criterion 5: Internationally important assemblage: peak counts in winter, 26326 waterfowl (5 year peak mean 1998/99-2002/2003)</p>	Short-term onwards	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement</p>	Yes	Yes – North West Coast Connections project and Moorside
<p>Criterion 6: Peak counts in winter: Northern pintail, Common redshank, Red knot.</p>	Short-term onwards	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement</p>	Yes	Yes – North West Coast Connections project and Moorside
<b><i>Upper Solway Flats and Marshes Ramsar</i></b>				
<p>Criterion 2: Supports over 10% of the British population of Natterjack toad</p>	Short-term onwards	<p>Habitat loss/change affecting breeding</p>	Yes	No
<p>Criterion 5: internationally important assemblage (species with peak counts in winter): 135720 waterfowl (5 year peak mean 1998/99-2002/2003)</p>	Short-term onwards	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement</p>	Yes	No

Qualifying Feature	Timescale/ scenario	Risk	Potential for Likely significant effect (LSE) alone	LSE in combination
<p>Criterion 6: Species/populations occurring at levels of international importance:</p> <p>Species with peak counts in spring/autumn: Ringed plover.</p> <p>Species with peak counts in winter: Barnacle goose, Svalbard, Red knot, Curlew, Common redshank, Dunlin, Pink-footed goose, Northern pintail and Bar-tailed godwit</p> <p>Species/populations identified subsequent to designation for possible future consideration under criterion 6. Breeding season: Lesser black-backed gull, Herring gull. Peak counts in spring/autumn: Ringed plover.</p> <p>Peak counts in winter: Dunlin.</p>	Short-term onwards	<p>Habitat loss/change affecting feeding, roosting and loafing</p> <p>Disturbance through displacement</p>	Yes	No

## 8 References

Defra (2006): Shoreline Management Plan Guidance

European Commission (2002): Assessment of plans and projects significantly affecting Natura 2000 sites: Methodological Guidance on the provisions of Article 6 (3) and (4) of the Habitats Directive 92/43/EEC

EU Birds Directive (Council Directive 2009/147/EC): The UK Habitats and Species Conservation Regulations 2010 (as amended in 2012) and the Offshore Marine Conservation (Natural Habitats & c.) (Amendment) Regulations 2010

North West England and North Wales Coastal Group (2011): North West England and North Wales Shoreline Management Plan SMP2

# Annex B - Conservation objectives of relevant European sites

## Conservation objectives for SACs

- River Eden SAC – <http://publications.naturalengland.org.uk/publication/5935614042046464> (November 2018 - version 3)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed in Table 4.1 of the HRA Screening Report), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

- South Solway Mosses SAC – <http://publications.naturalengland.org.uk/publication/5895087833743360> (November 2018 - version 3)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats, and,
- The supporting processes on which qualifying natural habitats rely.

- Solway Firth SAC - <http://publications.naturalengland.org.uk/publication/6556237919420416?category=4582026845880320> (November 2018 – version 4)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species

- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

- Drigg Coast -

<http://publications.naturalengland.org.uk/publication/6720405930770432?category=4582026845880320> (November 2018 – version 3)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

- Duddon Mosses - <http://publications.naturalengland.org.uk/publication/5497657652936704> (November 2018 – version 3)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats, and
- The supporting processes on which qualifying natural habitats rely.

- Roudsea Wood and Mosses SAC -

<http://publications.naturalengland.org.uk/publication/5161325151911936> (November 2018 - version 3)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats
- The structure and function (including typical species) of qualifying natural habitats, and
- The supporting processes on which qualifying natural habitats rely.

- Witherslack Mosses SAC - <http://publications.naturalengland.org.uk/publication/6299473500176384> (November 2018 - version 3)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of the qualifying natural habitats
- The structure and function (including typical species) of the qualifying natural habitats, and,
- The supporting processes on which the qualifying natural habitats rely.

- Morecambe Bay SAC - <http://publications.naturalengland.org.uk/publication/5314736417669120?category=4582026845880320> (November 2018 - version 3)

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- The extent and distribution of qualifying natural habitats and habitats of qualifying species
- The structure and function (including typical species) of qualifying natural habitats
- The structure and function of the habitats of qualifying species
- The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely
- The populations of qualifying species, and,
- The distribution of qualifying species within the site.

### **Conservation objectives for SPAs**

- Upper Solway Flats and Marshes SPA - <http://publications.naturalengland.org.uk/publication/5377753788448768?category=4582026845880320> (February 2016 – version 4)

With regard to the SPA and pSPA and the individual species and/or assemblage of species for which the site has been or may be classified (the 'Qualifying Features' and 'additional Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,

➤ The distribution of the qualifying features within the site.

- Solway Firth pSPA - <https://www.nature.scot/solway-firth-proposed-marine-spa-supporting-documents>

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

The conservation objectives for the Solway Firth proposed SPA are:

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

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

- a) Avoid significant mortality, injury and disturbance of the qualifying features, so that the distribution of the species and ability to use the site are maintained in the long-term;
- b) To maintain the habitats and food resources of the qualifying features in favourable condition.

- Morecambe Bay and Duddon Estuary SPA - <http://publications.naturalengland.org.uk/publication/6242841537806336?category=4582026845880320> (September 2017 – version 5)

With regard to this SPA and the individual species and/or assemblages of species for which the site has been classified (the 'Qualifying Features'), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving some of the aims of the Wild Bird Directive, by maintaining or restoring;

- The extent and distribution of the habitats of the qualifying features
- The structure and function of the habitats of the qualifying features
- The supporting processes on which the habitats of the qualifying features rely
- The population of each of the qualifying features, and,
- The distribution of the qualifying features within the site.

### 1.1.1 Conservation objectives for Ramsar sites

There are currently no conservation objectives for Ramsar sites. The SAC/SPA conservation objectives will be used when the qualifying features are the same, and advice sought from Natural England in other cases if necessary.