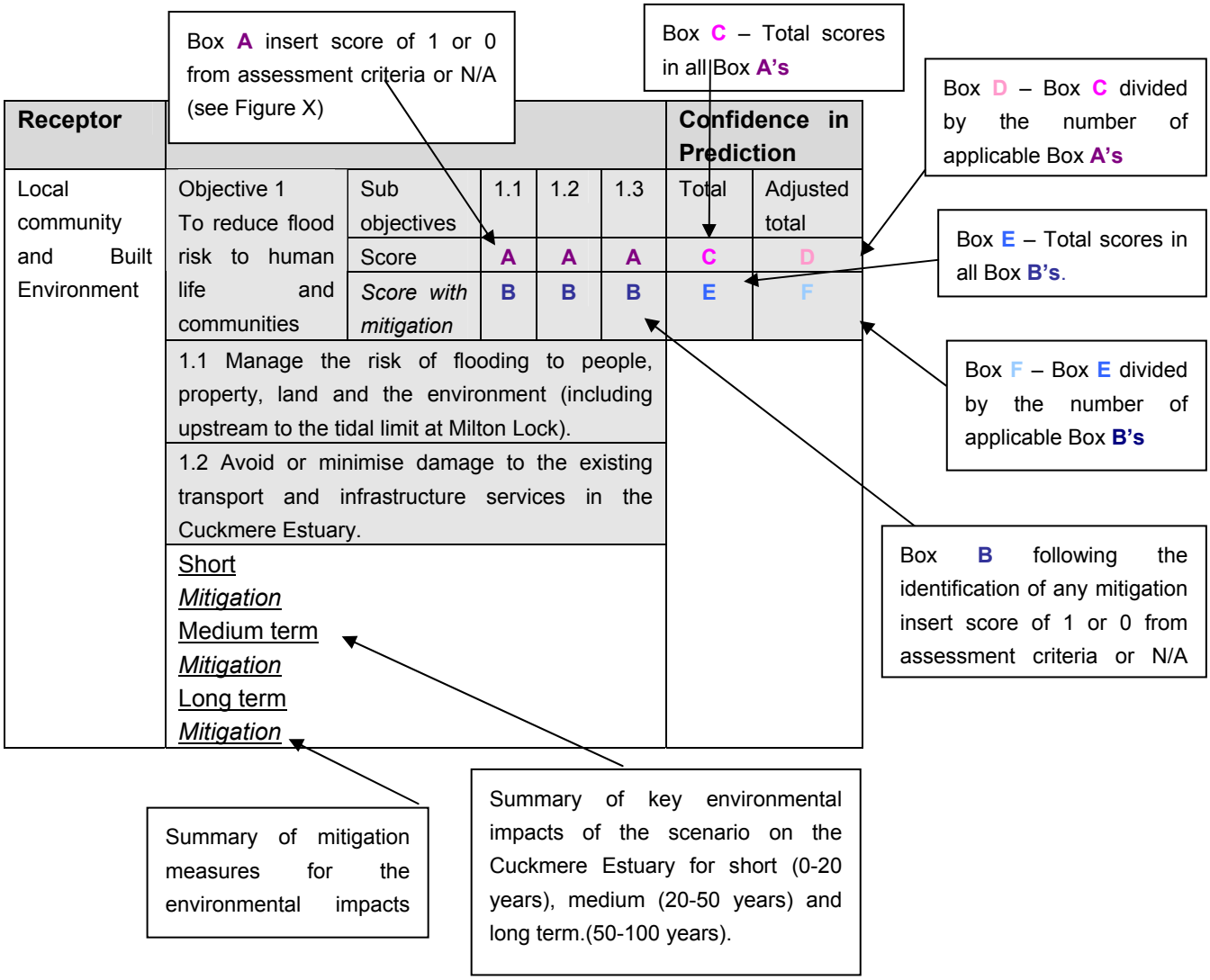
Example Environmental Assessment Table




| Receptor | | | | | | Confidence in Prediction | |
|---|---|---|---|---|---|---|---|
| Local community and Built Environment | Objective 1 To reduce flood risk to human life and communities | Sub objectives | 1.1 | 1.2 | 1.3 | Total | Adjusted total |
| | | Score | A | A | A | C | D |
| | | *Score with mitigation* | B | B | B | E | F |
| | 1.1 Manage the risk of flooding to people, property, land and the environment (including upstream to the tidal limit at Milton Lock). | | | | | | |
| | 1.2 Avoid or minimise damage to the existing transport and infrastructure services in the Cuckmere Estuary. | | | | | | |
| | Short<br>*Mitigation*<br>Medium term<br>*Mitigation*<br>Long term<br>*Mitigation* | | | | | | |

**No Active Intervention**

<table>
<tr><th>Receptor</th><th colspan="13">Environmental Impact</th><th colspan="7">Confidence in Prediction</th></tr>
<tr><td rowspan="6">Local community and Built Environment</td><td colspan="2" rowspan="4">Objective 1<br>To reduce flood risk to human life and communities</td><td>Sub Objectives</td><td colspan="3">1.1</td><td colspan="3">1.2</td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="14">1.1 Manage the risk of flooding to people, property, land and the environment (including upstream to the tidal limit at Milton Lock).</td><td colspan="7" rowspan="3">Medium confidence – modelling, but uncertainty over movement of the mouth.<br><br>High confidence – A breach is likely to occur in the short term.</td></tr>
<tr><td colspan="14">1.2 Avoid or minimise damage to the existing transport and infrastructure services in the Cuckmere Estuary.</td></tr>
<tr><td></td><td colspan="14"><u>Short term</u><br>If the mouth blocks it would result in an increase in flood risk to the whole of the Cuckmere Valley, including areas above the tidal limit. Overtopping of the defences leading to erosion of the bank crest and inundation of the floodplain is expected to occur. However, the frequency, probability and extent of this is unknown. Erosion of the earth banks along the channel is expected to be a gradual process with a breach likely to occur within 15 years. The increase in flood risk in the estuary will adversely affect assets within the floodplain including the access to the Foxhole Cottages, the Canoe Barn and the car park.<br><br>The beach will begin to migrate landwards. The profile of the beach is likely to flatten and widen. This will potentially have an impact on the stability of the western cliff face and the privately owned defences which could be subject to greater erosive forces.</td></tr>
</table>

| | | |
|---|---|---|
| | Medium term<br>The river channel flood bank will be vulnerable to erosion at the bridge and just downstream from this point. This could lead to potential failure of Exceat Bridge which carries the A259.<br><br>The mouth will begin to widen and deepen to cater for the increase in tidal prism once the banks have breached. The uncertain movement of the mouth could result in erosion of the cliffs to the west, threatening the Coastguard Cottages or directly eroding the existing sea defences.<br><br>The formation of a self sustaining, naturally functioning system is likely to occur in the medium term onwards. This is likely to include reinstatement of the meander in some form.<br><br>Long term<br>In the long term the estuary will continue to develop in a self sustaining manner. The damage from flood risk will already have occurred and impacted on features within the Cuckmere Estuary. There is still a potential risk that the mouth will form on the western side affecting the stability of the western cliff face and the privately owned defences. | Low confidence for long term predictions about the mouth, no modelling at present. |

<table>
<tr><td rowspan="6">Biodiversity</td><td rowspan="4">Objective 2<br>To protect and enhance biodiversity</td><td>Sub Objectives</td><td colspan="3">2.1</td><td colspan="3">2.2</td><td colspan="3">2.3</td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>3</td><td>3</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="10">2.1 Protect or create habitats that result from, or are subject to, natural coastal and estuarine processes.</td><td colspan="6" rowspan="4">Low for the short-term due to the potential for the mouth to block and the uncertainties over where and when the flood banks will breach and effect that the increase in sea level rise will have on the potential for saltmarsh growth in the floodplains.</td></tr>
<tr><td colspan="10">2.2 Provide opportunities to enhance or protect the favourable condition status of habitats and species for which Seaford to Beachy Head SSSI is designated. Ensure any change in habitat provides net environmental gain.</td></tr>
<tr><td colspan="10">2.3 Protect, create or enhance biodiversity in the Cuckmere Estuary, in particular Biodiversity Action Plan (BAP) species and habitats.</td></tr>
<tr><td colspan="10"><u>Short term</u><br>During the short term the saltmarsh present in the channel will be subject to coastal squeeze until the breach occurs. Prior to a breach, there will be an increase in the number of overtopping events which will create a more brackish environment behind the sea wall. Once the breach occurs some areas of saltmarsh are likely to be subject to greater erosive forces and will be lost from in the channel.<br><br>Once the breach occurs there will be a reversion of the fresh water and terrestrial habitats to maritime and coastal habitats, the estuary will be in a state of instability/transition until the intertidal habitats begin to form. The existing saltmarsh habitat in the channel will continue to be lost as described above.<br><br>The reversion of the coastal floodplain grazing marsh, a Biodiversity Action Plan (BAP) habitat to stable intertidal habitats will only occur once the estuary processes have adjusted to the effects of each breach of the existing river walls. Until then the existing intertidal habitat and newly inundated freshwater and brackish habitats will be subject to varying degrees of erosion and deposition of sediment.<br>Inundation would result in habitat such as saltmarsh and mudflats forming, which are also Biodiversity Action Plan (BAP) habitats.</td></tr>
</table>

| | | |
|---|---|---|
| | The beach will begin to migrate landwards forming a pocket beach. The profile of the beach is likely to flatten and widen. The condition of the vegetated shingle habitat in the Seaford to Beachy Head SSSI as compiled by English Nature is unfavourable but recovering. This is due to the annual maintenance undertaken by the Environment Agency. Vegetated shingle is also a local BAP habitat. The changes in beach profile will result in the creation of a more stable system in which vegetation can develop, undisturbed by maintenance operations. | Medium confidence - the breaches will occur in the short term. |
| | <u>Medium term</u><br>This scenario has the potential to create 112ha of intertidal habitat (saltmarsh and mudflat). However it is difficult to predict the extent of saltmarsh since there are too many unknown factors with this approach; when and where the breaches will occur and the amount of sea level rise that will have occurred in the interim period before the floodplain becomes inundated on a regular basis. An increase in sea level rise could affect the amount of saltmarsh coverage because the growth of saltmarsh species is sensitive to water levels and the frequency of inundation. | English Nature (EC48/05) Discussion Paper: A decision framework for dealing with freshwater habitats and species in the sustainable management of coasts and estuaries, 12 December 2005 |
| | The formation of a self sustaining, naturally functioning system is likely to occur in the medium term onwards. This will result in a stable intertidal environment. The loss of the existing saltmarsh vegetation in the channel will have been outweighed by a gain of intertidal habitats, which are subject to natural coastal and estuarine process. The intertidal habitat will continue to develop and diversify, as will the species associated with them e.g. invertebrate and bird populations. | |
| | Once the estuary and the intertidal habitats have stabilised there will be a net gain in BAP Habitats. The coastal grazing marsh will revert to intertidal habitats including saltmarsh and mudflats. The stable system will gave greater conservation value with increased biodiversity. | Water levels will increase with climate change. This will be off-set by the creation of a wider, deeper mouth. |
| | The SSSI will benefit from an overall increase in habitat diversity, with a greater mosaic of habitats than are currently present. The reversion of the freshwater and terrestrial habitats to intertidal habitats provides a net environmental gain, with the area upstream of Exceat Bridge retaining similar freshwater and terrestrial habitats. | |

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|---|---|---|
| | English Nature in a recent discussion paper have stated that complete transformation of a freshwater to a more brackish or intertidal assemblage may be accepted without the requirement for recreated freshwater habitat elsewhere, where the replacement coastal habitat is considered to represent the preferred conservation outcome or adequately mitigates for the loss of the freshwater habitat.<br><br><u>Long term</u><br>The intertidal habitat will continue to develop and diversify, as will the species associated with them e.g. invertebrate and bird populations. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Recreation and Tourism | Objective 3<br>To maintain and enhance opportunities for recreation and tourism | Sub Objectives | 3.1 | | | 3.2 | | | | Total | | | Adjusted Total | | |
| | | | S | M | L | S | M | L | | S | M | L | S | M | L |
| | | Score | 0 | 1 | 1 | 0 | 1 | 1 | | 0 | 2 | 2 | 0 | 1 | 1 |
| | | *Score with mitigation* | *N/A* | | | *N/A* | | | | *N/A* | | | *N/A* | | |
| | 3.1 Maintain quality of public rights of way and access. | | | | | | | | | | | | | | |
| | 3.2 To maintain amenity and tourist facilities and informal recreation and where possible provide opportunities to enhance facilities in the Cuckmere Estuary. | | | | | | | | | | | | | | |
| | <u>Short term</u><br>The Canoe Barn and Public Rights of Way (PRoW) along both embankments would be lost once the banks breach. The other permitted footpaths and paths on the eastern floodplain would become inundated with increasing frequency as the floodplain becomes inundated as water levels rise. Operating authorities have a duty of care to ensure that appropriate warnings are given to users of the areas that will become inundated under a No Active Intervention scenario. The Environment Agency will adopt a positive approach to the maintenance of access and protection of public rights of way affected by flood risk management proposals. Consultation with the appropriate authority, normally the local highway authority, and landowners will identify roles and responsibilities as well as an appropriate way forward to mitigate the impact on public rights of way. Therefore rights of way and footpaths inundated in the short term are likely to be re-routed in the short to medium term. Stopping orders and special orders for the South Downs Way would be required to close the footpaths/access tracks. | | | | | | | | | | | | | | |

High confidence – detailed topographic survey for level of the footpaths.

High confidence – A breach is likely to occur in the short term.

Defra Guidance Note - Managed Realignment: Land purchase, compensation and

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|---|---|---|
| | Access to the western beach will still be possible via the Vanguard Way which is a raised route, however, once the banks have been breached the Vanguard Way could become inundated during extreme tidal events. Access to the eastern beach will be significantly reduced once the floodplain is inundated. There will be no specific access route as all the existing paths will become inundated or are currently closed.<br><br><u>Medium and long term</u><br>Operating authorities have a duty of care to ensure that appropriate warnings are given to users of the area that will become inundated under a No Active Intervention scenario. The Environment Agency will adopt a positive approach to the maintenance of access and protection of public rights of way affected by flood risk management proposals. Consultation with the appropriate authority, normally the local highway authority, and landowners will identify roles and responsibilities as well as an appropriate way forward to mitigate the impact on public rights of way. Therefore it is assumed that rights of way and footpaths inundated in the short term would be re-routed to more sustainable locations.<br><br>The formation of a self sustaining, naturally functioning system is likely to occur in the medium term onwards. This is likely to include reinstatement of part of the meander into the tidal regime. This will result in a loss of the meander as a still water recreational facility for the canoe club. The main river channel and the beach for kayak surfing will still be available to more experienced canoeists as will the river upstream of Exceat Bridge.<br><br>There will be an overall net gain in recreation and amenity in the Cuckmere Estuary. The meander will have silted up in the long term under the current hold the line regime negating its use as a canoe facility. The creation of intertidal habitat will improve the site for bird watchers, and even provide the possibility for new recreational pursuits such as wildfowling and sports fishing. | payment for alternative beneficial use.<br><br>RPA Report (June, 2005) Assessment of potential impacts of managed realignment |

<table>
<tr><td rowspan="6">Farmland</td><td rowspan="4">Objective 4<br>To protect farmland where sustainable to do so</td><td>Sub Objectives</td><td colspan="3">4.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td></td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="8">4.1 To seek new opportunities for agricultural diversification and extensive farming i.e environmental stewardship payments for saltmarsh/habitat creation and restoring farming on natural systems such as floodplain wetlands.</td><td colspan="4" rowspan="2">High certainty of inundation.<br><br>Medium certainty over agri-environmental schemes</td></tr>
<tr><td colspan="8"><u>Short term</u><br>Inundation of the floodplains would result in a change from grazing marsh to intertidal habitats. The method does not allow for Environmental Stewardship schemes to be sought, however, there may be new agri-environmental schemes that are applicable to the new land use. Existing payments would continue until the breach occurs.<br><br><u>Medium and long term</u><br>Once the estuary and intertidal habitats have stabilised there is the potential for alternative agricultural practices to be undertaken. Saltmarsh and the creek habitats that form would be suitable for a number of commercial fishery species e.g. bass and mullet and form an important nursery area for other marine fish. The saltmarsh itself could provide a crop species in the form of samphire (Salicornia). Wildfowling is also a possible alternative agricultural practice.</td></tr>
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<table>
<tr><td rowspan="6">Water Resources</td><td rowspan="4">Objective 5<br>To protect and enhance water resources</td><td>Sub Objectives</td><td colspan="3">5.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td></td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="8">5.1 Protect and enhance where possible the existing water quality of the tidal Cuckmere River.</td><td colspan="4">High short term.<br><br>Medium long term</td></tr>
<tr><td colspan="8"><u>Short term</u><br>Inundation of the floodplains following the breach may result in an increase in turbidity which would affect the surface water quality of the estuary. This has the potential to impact on species diversity, in particular fish and invertebrates.<br><br><u>Medium and long term</u><br>Following the stabilisation of the estuary and formation of intertidal habitats the saltmarsh will act as a sediment trap.</td><td colspan="4"></td></tr>
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Archaeology and Cultural Heritage | Objective 6<br>To protect features of archaeology and cultural heritage | Sub Objectives | 6.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *N/A* | | | | | *N/A* | | | *N/A* | | | |
| | 6.1 Protect or record features of archaeological and heritage importance in the Cuckmere Estuary. | | | | | | | Low confidence in predicting the movement of the mouth.<br><br>Low confidence with regards to the potential for unknown archaeology.<br><br>High confidence in location of Second World War artefacts (English Heritage survey, 2001) | | | | | | |
| | Short term<br>The archaeological desk study has concluded that inundation of the floodplains would result in damage to significant archaeological features within the Cuckmere Estuary. These include the remains of a system of medieval 'innings' or dykes. Creation of saltmarsh and mudflat is likely to reduce the potential for future palaeo-environmental analysis of the valley floor and damage underlying deposits. However, gradual overtopping and inundation will result in the creation of a more stable and wet environment with preservation of buried artefacts.<br><br>The migration of the beach has the potential to impact on the Second World War military defences (anti tank traps).<br><br>Medium term<br>As the channel and mouth adjust there will be impacts on the Second World War military defences. It is likely that the features towards the mouth of the estuary will either be buried by the migration of the beach or encapsulated in the channel as it adjusts.<br><br>Long term<br>No further impact. | | | | | | | | | | | | | |

<table>
<tr><td rowspan="5">Landscape Character and Visual Amenity</td><td rowspan="4">Objective 7<br>To maintain and enhance landscape character and visual amenity features</td><td>Sub Objectives</td><td colspan="3">7.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td></td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="10">7.1 To maintain and enhance the landscape character in keeping with natural processes and the Sussex Downs AONB and Heritage Coast.</td></tr>
<tr><td colspan="9"><u>Short term</u><br>No significant visual change is predicted in the short term. Erosion of the earth banks along the channel, flooding of the floodplain and landward erosion of the beach is likely to be gradual; therefore a moderate adverse impact on landscape character is concluded.<br><br><u>Medium term</u><br>In the medium term, the beach will have migrated landward giving a wider, flatter profile. The flood banks are likely to have deteriorated substantially by this epoch, allowing the water through the banks of the channel to create a visually more wetland valley character across the valley floor. Mudflats may have developed in places, with an increase of wetland and saltmarsh vegetation being likely. The meanders may have been reintroduced as a limb to the tidal channel. Salicornia (Glasswort) is likely to have established across the valley floor.<br><br><u>Long term</u><br>In the long term, the estuary is likely to be self sustaining. The mouth will have become wider and deeper and may have migrated to the east. Creeks may potentially be cutting through the floodplain creating a visual network of water paths. Mudflats with associated birdlife will have established around the estuary as it adjusts. The wetland character is likely to have established further as a result of continued succession, with Halimione (Sea purslane) coming to dominate the vegetation in the place of Salicornia..</td><td></td></tr>
</table>

<table>
<tr><td rowspan="6">Climate Change</td><td rowspan="4">Objective 8<br>To mitigate/minimise future impacts of climate change</td><td>Sub Objectives</td><td colspan="3">8.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td></td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="9">8.1 Ensure the strategy is sustainable in terms of long term climate change, specifically sea level rise.</td><td>High</td></tr>
<tr><td colspan="9"><u>Short term</u><br>Sea level rise is occurring now, therefore in the short term until the breach occurs the defences are not providing sustainable management of flood risk in terms of climate change.<br><br><u>Medium and long term</u><br>The formation of a self sustaining, naturally functioning system is likely to occur in the medium term onwards. This is likely to include reinstatement of part of the meander. As the system adjusts the channel will improve the conveyance of flows and further improve the flood risk upstream. The floodplain will act as flood storage.</td></tr>
</table>

<table>
<tr><td rowspan="5"></td><td rowspan="5">Objective 9<br>To promote the principles of sustainable development</td><td>Sub Objectives</td><td colspan="3">9.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td></td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="10">9.1 Ensure the option promotes the principles of sustainable development in terms of use of natural resources, including minimisation of waste and, where possible, use of materials from sustainable sources.</td><td>High</td></tr>
<tr><td colspan="11">Short term<br>The ability of this scenario to promote sustainable development will largely depend on natural processes and the order in which these processes occur in the immediate epoch. There are adverse consequences if the risks that are present in the No Active Intervention scenario occur. The table below outlines the consequences of the key risks.<br><br>
<table>
<tr><th>Consequence</th><th>Impact</th></tr>
<tr><td>Blockage of the mouth.</td><td>Potential for greater risk of flooding upstream.</td></tr>
<tr><td>Erosion of the earth banks along the channel leading to a breach/failure.</td><td>Inundation of the assets within the floodplain.<br>Impact on the local infrastructure i.e the A259.</td></tr>
<tr><td>Landward erosion of the beach</td><td>Threatens the stability of the western cliff face.</td></tr>
<tr><td>Regular overtopping of the defences.</td><td>Inundation of the assets within the floodplain.<br>Erosion of the bank crest.</td></tr>
</table>
<br>Medium term<br>The formation of a self sustaining, naturally functioning estuary is likely to occur during this epoch. This is likely to include reinstatement of part of the meander.<br><br>Long term<br>Further development of a self sustaining, naturally functioning system.</td></tr>
<tr><td colspan="11"></td><td>I</td><td>M</td><td>L</td></tr>
<tr><td colspan="11">OVERALL SCORE</td><td>0</td><td>7</td><td>7</td></tr>
<tr><td colspan="11">OVERALL SCORE WITH MITIGATION</td><td colspan="3">N/A</td></tr>
</table>

**No Active Intervention –Exit Strategy**

<table>
<tr><th>Receptor</th><th colspan="14">Environmental Impact</th><th colspan="6">Confidence in Prediction</th></tr>
<tr><td rowspan="6">Local community and Built Environment</td><td colspan="2" rowspan="3">Objective 1<br>To reduce flood risk to human life and communities</td><td>Sub Objectives</td><td colspan="3">1.1</td><td colspan="3">1.2</td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td>2</td><td>2</td><td>2</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="2">Score with mitigation</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="10">1.1 Manage the risk of flooding to people, property, land and the environment (including upstream to the tidal limit at Milton Lock).</td><td colspan="6" rowspan="3">Medium confidence – uncertainty over movement of the mouth.<br><br>High confidence - the breaches will occur in the short term.</td></tr>
<tr><td colspan="10">1.2 Avoid or minimise damage to the existing transport and infrastructure services in the Cuckmere Estuary.</td></tr>
<tr><td colspan="10"><u>Short term</u><br>The risk of the mouth blocking is removed by the continued monitoring and removal of material where required. This will continue annually until the system adjusts, and is self cleansing.<br><br>Overtopping of the defences, erosion of the bank crest and flooding of the floodplain is expected to occur. Erosion of the earth banks along the channel is expected to be a gradual process with a breach likely to occur within 15 years. This would result in an increase in flood risk in the estuary, affecting structures within the floodplain including the access to Foxhole Cottages, the Canoe Barn and car park.<br><br>The exit strategy allows for monitoring of the section of bank downstream from Exceat Bridge and bank stabilisation if required. This will continue until the system adjusts. The Highways Authority will be informed of any deterioration of the bridge.<br><br>The west beach will begin to migrate landward. The profile of the beach is likely to flatten and widen. The beaches on the west and east will be monitored for erosion. This reduces the risk to the cliffs on the west and the privately owned defences.</td></tr>
</table>

| Receptor | Environmental Impact | Confidence in Prediction |
|---|---|---|
| | Medium term<br>The mouth will begin to widen and deepen to cater for the increase in tidal prism. Monitoring will continue and beach nourishment will be used to protect the cliff face on the west.<br><br>The formation of a self sustaining, naturally functioning system is likely to occur during this epoch. This is likely to include reinstatement of part of the meander.<br><br>Long term<br>Formation of a self sustaining, naturally functioning system. Current predictions are that a delta will form at the mouth assisting the protection of the western beach, the cliff face and the privately owned defences. | Low confidence for long term predictions about the mouth, no modelling at present. |

<table>
<tr><td rowspan="6">Biodiversity</td><td rowspan="4">Objective 2<br>To protect and enhance biodiversity</td><td>Sub Objectives</td><td colspan="3">2.1</td><td colspan="3">2.2</td><td colspan="3">2.3</td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>2</td><td>2</td><td>0</td><td>.5</td><td>.5</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="11">2.1 Protect or create habitats that result from, or are subject to, natural coastal and estuarine processes.</td><td colspan="6" rowspan="4">Low for the short-term due to the potential for the mouth to block and the uncertainties over where and when the flood banks will breach and effect that the increase in sea level rise will have on the potential for saltmarsh growth in the floodplains.</td></tr>
<tr><td colspan="11">2.2 Provide opportunities to enhance or protect the favourable condition status of habitats and species for which Seaford to Beachy Head SSSI is designated. Ensure any change in habitat provides net environmental gain.</td></tr>
<tr><td colspan="11">2.3 Protect, create or enhance biodiversity in the Cuckmere Estuary, in particular Biodiversity Action Plan (BAP) species and habitats.</td></tr>
<tr><td colspan="11"><u>Short term</u><br>During the short term the saltmarsh present in the channel will be subject to coastal squeeze until the breach occurs. Prior to a breach, there will be an increase in the number of overtopping events which will create a more brackish environment behind the sea wall. Once the breach occurs some areas of the saltmarsh are likely to be subject to greater erosive forces and will be lost from in the channel..<br><br>Once the breach occurs there will be a reversion of the fresh water and terrestrial habitats to maritime and coastal habitats, the estuary will be in a state of instability/transition until the intertidal habitats begin to form. The existing saltmarsh habitat in the channel will continue to be lost as described above.<br><br>The reversion of the coastal floodplain grazing marsh, a Biodiversity Action Plan (BAP) habitat to stable intertidal habitats will only occur once the estuary processes have adjusted to the effects of each breach of the existing river walls. Until then the existing intertidal habitat and newly inundated freshwater and brackish habitats will be subject to varying degrees of erosion and deposition of sediment.<br>Inundation would result in habitat such as saltmarsh and mudflats forming, which are also Biodiversity Action Plan (BAP) habitats.</td></tr>
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| | The beach will begin to migrate landwards forming a pocket beach. The profile of the beach is likely to flatten and widen. The condition of the vegetated shingle habitat in the Seaford to Beachy Head SSSI as compiled by English Nature is unfavourable but recovering. This is due to the annual maintenance undertaken by the Environment Agency. Vegetated shingle is also a local BAP habitat. The changes in beach profile will result in the creation of a more stable system in which vegetation can develop, undisturbed by maintenance operations. | Medium confidence - the breaches will occur in the short term. |
| | <u>Medium term</u><br>This scenario has the potential to create 112ha of intertidal habitat (saltmarsh and mudflat). However it is difficult to predict the extent of saltmarsh since there are too many unknown factors with this approach; when and where the breaches will occur and the amount of sea level rise that will have occurred in the interim period before the floodplain becomes inundated on a regular basis. An increase in sea level rise could affect the amount of saltmarsh coverage because the growth of saltmarsh species is sensitive to water levels and the frequency of inundation. | English Nature (EC48/05) Discussion Paper: A decision framework for dealing with freshwater habitats and species in the sustainable management of coasts and estuaries, 12 December 2005 |
| | The formation of a self sustaining, naturally functioning system is likely to occur in the medium term onwards. This will result in a stable intertidal environment. The loss of the existing saltmarsh vegetation in the channel will have been outweighed by a gain of intertidal habitats, which are subject to natural coastal and estuarine process. The intertidal habitat will continue to develop and diversify, as will the species associated with them e.g. invertebrate and bird populations. | Water levels will increase with climate change. This will be off-set by the creation of a wider, deeper mouth. |
| | Once the estuary and the intertidal habitats have stabilised there will be a net gain in BAP Habitats. The coastal grazing marsh will revert to intertidal habitats including saltmarsh and mudflats. The stable system will gave greater conservation value with increased biodiversity. | |
| | The SSSI will benefit from an overall increase in habitat diversity, with a greater mosaic of habitats than are currently present. The reversion of the freshwater and terrestrial habitats to intertidal habitats provides a net environmental gain, with the area upstream of Exceat Bridge retaining similar freshwater and terrestrial habitats. | |

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| | English Nature in a recent discussion paper have stated that complete transformation of a freshwater to a more brackish or intertidal assemblage may be accepted without the requirement for recreated freshwater habitat elsewhere, where the replacement coastal habitat is considered to represent the preferred conservation outcome or adequately mitigates for the loss of the freshwater habitat.<br><br><u>Long term</u><br>The intertidal habitat will continue to develop and diversify, as will the species associated with them e.g. invertebrate and bird populations. | |

<table>
<tr><td rowspan="6">Recreation and Tourism</td><td rowspan="4">Objective 3<br>To maintain and enhance opportunities for recreation and tourism</td><td>Sub Objectives</td><td colspan="3">3.1</td><td colspan="3">3.2</td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td></td><td>0</td><td>2</td><td>2</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td colspan="3">N/A</td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="11">3.1 Maintain quality of public rights of way and access.</td><td rowspan="3">High confidence – detailed topographic survey for level of the footpaths.<br><br>High confidence - the breaches will occur in the short term.<br>Defra Guidance Note - Managed Realignment: Land purchase, compensation and payment for alternative beneficial use.<br><br>RPA Report (June, 2005) Assessment of potential impacts of managed realignment</td></tr>
<tr><td colspan="11">3.2 To maintain amenity and tourist facilities and informal recreation and where possible provide opportunities to enhance facilities in the Cuckmere Estuary.</td></tr>
<tr><td colspan="11"><u>Short term</u><br>The Canoe Barn and Public Rights of Way (PRoW) along both embankments would be lost once the banks breach. The other permitted footpaths and paths on the eastern floodplain would become inundated with increasing frequency as the floodplain becomes inundated as water levels rise. Operating authorities have a duty of care to ensure that appropriate warnings are given to users of the areas that will become inundated under a No Active Intervention scenario. The Environment Agency will adopt a positive approach to the maintenance of access and protection of public rights of way affected by flood risk management proposals. Consultation with the appropriate authority, normally the local highway authority, and landowners will identify roles and responsibilities as well as an appropriate way forward to mitigate the impact on public rights of way. Therefore rights of way and footpaths inundated in the short term are likely to be re-routed in the short to medium term Stopping orders and special orders for the South Downs Way would be required to close the footpaths/access tracks.<br><br>Access to the western beach will still be possible via the Vanguard Way which is a raised route, however, once the banks have been breached the Vanguard Way could become inundated during extreme tidal events. Access to the eastern beach will be significantly reduced once the floodplain is inundated. There will be no specific access route as all the existing paths will become inundated or are currently closed.</td></tr>
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|---|---|---|
| | Medium and long term<br>Operating authorities have a duty of care to ensure that appropriate warnings are given to users of the area that will become inundated under a No Active Intervention scenario. The Environment Agency will adopt a positive approach to the maintenance of access and protection of public rights of way affected by flood risk management proposals. Consultation with the appropriate authority, normally the local highway authority, and landowners will identify roles and responsibilities as well as an appropriate way forward to mitigate the impact on public rights of way. Therefore rights of way and footpaths inundated in the short term would be re-routed.<br><br>The formation of a self sustaining, naturally functioning system is likely to occur in the medium term onwards. This is likely to include reinstatement of part of the meander into the tidal regime. This will result in a loss of the meander as a still water recreational facility for the canoe club. The main river channel and the beach for kayak surfing will still be available to more experienced canoeists as will the river upstream of Exceat Bridge.<br><br>There will be an overall net gain in recreation and amenity in the Cuckmere Estuary, the meander will have silted up in the long term under the current hold the line regime negating its use as a canoe facility. The creation of intertidal habitat will improve the site for bird watchers, and even provide the possibility for new recreational pursuits such as wildfowling and sports fishing. | |

<table>
<tr><td rowspan="6">Farmland</td><td rowspan="4">Objective 4<br>To protect farmland where sustainable to do so</td><td>Sub Objectives</td><td colspan="3">4.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td>N/A</td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="7">4.1 To seek new opportunities for agricultural diversification and extensive farming i.e environmental stewardship payments for saltmarsh/habitat creation and restoring farming on natural systems such as floodplain wetlands.</td><td colspan="6" rowspan="2">High certainty of inundation.<br><br>Medium certainty over agri-environmental schemes.</td></tr>
<tr><td colspan="7"><u>Short term</u><br>Inundation of the floodplains would result in a change from grazing marsh to intertidal habitats. The method does not allow for Environmental Stewardship schemes to be sought, however, there may be new agri-environmental schemes that are applicable to the new land use. Any existing payments would continue until the breach occurs<br><br><u>Medium and long term</u><br>Once the estuary and intertidal habitats have stabilised there is the potential for alternative agricultural practices to be undertaken. Saltmarsh and the creek habitats that form are suitable for a number of commercial fishery species e.g. bass and mullet and form an important nursery area for other marine fish. The saltmarsh itself could provide a crop species in the form of samphire (Salicornia). Wildfowling is also a possible alternative agricultural practice.</td></tr>
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water Resources | Objective 5<br>To protect and enhance water resources | Sub Objectives | 5.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 1 | 1 | | | 0 | 1 | 1 | 0 | 1 | 1 | |
| | | *Score with mitigation* | *N/A* | | | | | *N/A* | | | *N/A* | | | |
| | 5.1 Protect and enhance where possible the existing water quality of the tidal Cuckmere River. | | | | | | | High short term | | | | | | |
| | Short term<br>Inundation of the floodplains following the breach may result in an increase in sedimentation which would affect the surface water quality of the estuary. This has the potential to impact on species diversity, in particular fish.<br><br>Medium and long term<br>Following the stabilisation of the estuary and formation of intertidal habitats the saltmarsh will act as a sediment trap. | | | | | | | Medium long term | | | | | | |

<table>
<tr><td rowspan="6">Archaeology and Cultural Heritage</td><td rowspan="4">Objective 6<br>To protect features of archaeology and cultural heritage</td><td>Sub Objectives</td><td colspan="3">6.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td></td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="9">6.1 Protect or record features of archaeological and heritage importance in the Cuckmere Estuary.</td><td colspan="3" rowspan="2">Low confidence in movement of mouth.</td></tr>
<tr><td colspan="9"><u>Short term</u><br>The archaeological desk study has concluded that inundation of the floodplains would result in damage to significant archaeological features within the Cuckmere Estuary. This includes the remains of a system of medieval ‘innings’ or dykes. Creation of saltmarsh and mudflat is likely to reduce the potential for future palaeo-environmental analysis of the valley floor and alter underlying deposits. However, gradual overtopping and inundation will result in the creation of a more stable and wet environment with preservation of buried artefacts.<br><br>The beach will begin to migrate landwards. This has the potential to impact on the Second World War military defences (anti tank traps).<br><br><u>Medium and long term</u><br>As the channel and mouth adjust there will be an impact on the Second World War military defences. It is likely that the features towards the mouth of the estuary will either be buried by the migration of the beach or encapsulated in the channel as it adjusts.</td></tr>
</table>

<table>
<tr><td rowspan="5">Landscape Character and Visual Amenity</td><td rowspan="4">Objective 7<br>To maintain and enhance landscape character and visual amenity features</td><td>Sub Objectives</td><td colspan="3">7.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td colspan="3">N/A</td><td></td><td></td><td colspan="3">N/A</td><td colspan="3">N/A</td></tr>
<tr><td colspan="11">7.1 To maintain and enhance the landscape character in keeping with natural processes and the Sussex Downs AONB and Heritage Coast.</td></tr>
<tr><td colspan="11"><u>Short term</u><br>No significant visual change is predicted in the short term, with any blockages at the mouth removed. However, the flood banks are likely to have deteriorated substantially towards the end of this epoch, allowing the water through the banks of the channel, resulting in inundation of the floodplain and an instable intertidal environment.<br><br><u>Medium term</u><br>In the medium term, the beach will have migrated landward giving a wider, flatter profile. The flood banks are likely to have deteriorated further during this epoch, allowing the water through the banks of the channel to create a more wetland valley character across the valley floor. Overtopping of the defences is likely to be occurring at least annually. Mudflats may have developed in places, with an increase of wetland and saltmarsh vegetation being likely. The meanders may have been reintroduced as a limb to the tidal channel. Salicornia (Glasswort) is likely to have established across the valley floor.<br><br><u>Long term</u><br>In the long term, the estuary is likely to be self sustaining. The mouth will have become wider and deeper and may have migrated to the east. Creeks may potentially be cutting through the floodplain creating a visual network of water paths. Mudflats with associated birdlife will have established around the estuary as it adjusts. The wetland character is likely to have established further, with Halimione (Sea purslane) dominating the vegetation.</td></tr>
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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Climate Change | Objective 8<br>To mitigate/minimise future impacts of climate change | Sub Objectives | 8.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | |
| | | *Score with mitigation* | *N/A* | | | | | *N/A* | | | *N/A* | | | |
| | 8.1 Ensure the strategy is sustainable in terms of long term climate change, specifically sea level rise. | | | | | | | | | | | | | High |
| | Short term<br>Prior to the natural breaching of the defences there will be limited change to minimise the impact of climate change. Once the banks breach, the low grade agricultural land and the limited number of assets within the floodplain will be inundated. However, this will lead to improved hydraulic performance of the river which will help to minimise future impacts of climate change.<br><br>Medium term<br>The formation of a self sustaining, naturally functioning estuary is likely to occur during this epoch. This will limit the need for future intervention at the mouth and improve the hydraulic performance of the channel, therefore reducing the potential for flooding upstream.<br><br>Long term<br>As the estuary develops the impact of climate change will be managed naturally. The hydraulic benefits mentioned above will continue to mitigate against the impact of climate change. | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use of Natural Resources | Objective 9<br>To promote the principles of sustainable development | Sub Objectives | 9.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | |
| | | *Score with mitigation* | *N/A* | | | | | *N/A* | | | *N/A* | | | |
| | 9.1 Ensure the option promotes the principles of sustainable development in terms of use of natural resources, including minimisation of waste and, where possible, use of materials from sustainable sources. | | | | | | | High | | | | | | |
| | Short term<br>The bridge and bank just downstream will also be monitored and stabilisation may be required if failure occurs. Monitoring will continue into the medium term until the system adjusts.<br><br>Medium term<br>The formation of a self sustaining, naturally functioning system is likely to occur during the epoch. This is likely to include reinstatement of part of the meander.<br><br>Long term<br>No future impact. | | | | | | | | | | | | | |
| | | | | | | | | **I** | | **M** | | | **L** | |
| **OVERALL SCORE** | | | | | | | | **3** | | **7** | | | **7** | |
| **OVERALL SCORE WITH MITIGATION** | | | | | | | | **N/A** | | | | | | |

**Hold the Line – Maintain the Existing Defences**

| Receptor | Environmental Impact | | | | | | | | | | | | | | Confidence in Prediction |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Local community and Built Environment | Objective 1<br>To reduce flood risk to human life and communities | Sub Objectives | 1.1 | | | 1.2 | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | S | M | L | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | 1 | 1 | 1 | | 1 | 1 | 1 | 0.5 | 0.5 | 0.5 | |
| | | *Score with mitigation* | *0* | *0* | *0* | *1* | *1* | *1* | | *1* | *1* | *1* | *0.5* | *0.5* | *0.5* | |
| | 1.1 Manage the risk of flooding to people, property, land and the environment (including upstream to the tidal limit at Milton Lock). | | | | | | | | | | | | | | | High confidence – modelling (continuing existing practice). |
| | 1.2 Avoid or minimise damage to the existing transport and infrastructure services in the Cuckmere Estuary. | | | | | | | | | | | | | | | |
| | <u>Short term</u><br>The existing maintenance practices will continue in the immediate term. These include removal of material from the mouth to prevent blocking, placement of this material on the west beach to prevent landward erosion and maintenance of the earth banks along the channel. This maintenance work would not reduce the flood risk associated with overtopping and would therefore present a health and safety risk. The existing defences will not be raised to manage climate change.<br><br>The number of incidences of over topping would increase. There is a requirement to reinforce the bank crest to prevent scour during an overtopping event. The construction works are likely to have a temporary effect on the local community and residents. | | | | | | | | | | | | | | | |

| Receptor | Environmental Impact | Confidence in Prediction |
|---|---|---|
| | Medium term<br>The existing maintenance practices as outlined above will continue in the medium term.<br><br>The groynes will require replacement in the medium term. The groynes will assist in the stabilisation of the western beach.<br><br>Long term<br>Due to long term erosion of the banks annual patch and repair will not be sufficient and harder engineering solutions would be required. There would be significant construction work however, the effect on the local community and local residents would be temporary.<br><br>Further work will be required at the mouth of the estuary to replace the training structures with more substantial structures.<br><br>The western beach would require further stabilisation using rock armour and the eastern beach would need to be monitored and managed through breach renourishment.<br><br>This scenario provides limited protection to the floodplain from flooding as the existing standard of protection is reduced. The risks of flooding upstream will remain. Stabilisation of both western and eastern beaches are provided throughout this scenario. | |

<table>
<tr><td rowspan="13">Biodiversity</td><td rowspan="4">Objective 2<br>To protect and enhance biodiversity</td><td>Sub Objectives</td><td colspan="3">2.1</td><td colspan="3">2.2</td><td colspan="3">2.3</td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Score with mitigation</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td colspan="12">2.1 Protect or create habitats that result from, or are subject to, natural coastal and estuarine processes.</td><td rowspan="9">High confidence (current habitats have been mapped in phase 1 habitat surveys (see Figure 4 in Appendix 9).<br><br>Low/Medium confidence with regards to the rate of siltation of the meanders.</td></tr>
<tr><td colspan="12">2.2 Provide opportunities to enhance or protect the favourable condition status of habitats and species for which Seaford to Beachy Head SSSI is designated. Ensure any change in habitat provides net environmental gain</td></tr>
<tr><td colspan="12">2.3 Protect, create or enhance biodiversity in the Cuckmere Estuary, in particular Biodiversity Action Plan (BAP) species and habitats.</td></tr>
<tr><td colspan="12"><u>Short term</u><br>The continuing erosion and loss of intertidal habitat in the main channel river will continue due to coastal squeeze. It is anticipated that the area of saltmarsh will be lost in the short term but highly likely by the medium term.<br><br>The habitat diversity of the SSSI will deteriorate with the loss of the saltmarsh in the main channel. This may result in a net environmental loss and may affect the favourable condition status of the site.<br><br>Continued recycling of shingle on the western beach and restoration following storm damage will continue to adversely impact on the vegetated shingle. The condition of this habitat in the Seaford to Beachy Head SSSI as compiled by English Nature is unfavourable but recovering, mainly due to impacts from flood defence maintenance on the western beach.<br><br>The loss of the saltmarsh in the main channel and the impact on the vegetated shingle, both Biodiversity Action Plan (BAP) habitats will result in a net environmental loss of BAP habitats.<br><br><u>Mitigation</u><br>Mitigation for this scenario would include protection of species during construction e.g reptile exclusion around the working areas. Works would also be undertaken outside of sensitive periods ie breeding bird season.</td></tr>
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| | *English Nature should be consulted to prepare a method for shingle recycling that has the least damaging effect on the vegetated shingle.*<br><br><u>Medium term</u><br>Shingle recycling on the western beach will continue affecting the vegetated shingle. The continuing effects of coastal squeeze will result in the loss of the saltmarsh in the main channel. Both will result in a loss of BAP habitats causing a net environmental loss of habitat diversity in the SSSI.<br><br><u>Long term</u><br>Further work will be required at the mouth of the estuary to replace the training structures with more substantial structures. The removal of the old structures and construction of the new structures are likely to have an effect on the vegetated shingle of both the east and west beaches. The western beach will need to be stabilised with rock armour. This will result in loss of a local BAP habitat as well as the condition status of the SSSI Unit. The eastern beach, which is currently generally stable will need shingle re-nourishment in the longer term. Again this will adversely impact on a BAP habitat and further deteriorate the condition of the SSSI Unit.<br><br>The meanders classed as saline lagoons within the Sussex Biodiversity Action Plan and are currently silting up due to lack of flow through them. Although rates are unknown it is expected that in the long term the meanders will silt up completely.<br><br>*<u>Mitigation</u>*<br>*Mitigation for this scenario would include protection of species during construction e.g reptile exclusion around the working areas. Works would also be undertaken outside of sensitive periods ie breeding bird season.*<br><br>*English Nature should be consulted to prepare a method for shingle recycling that has the least damaging effect on the vegetated shingle. The meanders could be dredged in order to increase their depth and reduce the impact on fish. The dredged material would need to be disposed of appropriately.* | |

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<tr><td colspan="16"><u>Short term</u><br>Under this scenario all the paths, permitted or otherwise will be maintained in the Cuckmere Estuary. There will be short term, temporary diversions associated with the works to reinforce the crest of the banks and the patch and repair works required on the faces of the earth banks.<br><br>The number of incidences of over topping would increase (leading to the increase in time when the footpaths on the banks cannot be accessed). The floodplain would be protected from flooding, although the area immediately surrounding the embankments would be subject to over topping.<br><br><u>Mitigation</u><br>Temporary closures and diversions of the footpaths will be implemented during construction work.<br><br><u>Medium term</u><br>Ongoing maintenance of the earth banks with patch and repair work will result in temporary closures of the footpaths on the earth banks.<br><br><u>Mitigation</u><br>Temporary closures and diversions of the footpaths will be implemented during construction work.</td></tr>
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| | Long term<br>In the long term harder engineering solutions on the earth banks will be required. This will result in temporary closures of the footpaths on the earth banks.<br><br>More substantial works will be required on both beaches, the eastern beach will require renourishment which will have temporary short term impacts on the use of the beach by tourists. The western beach will require rock armour protection in the longer term which will reduce the area of shingle beach available for recreational use.<br><br>The meanders are currently silting up due to lack of flow through them. Although rates are unknown it is expected that in the long term the meanders will silt up completely. This will have a detrimental effect on the use of the meanders as a canoe facility, resulting in a net loss of recreation and amenity in the Cuckmere Estuary as there will be no alternative recreational pursuit to replace it.<br><br>*Mitigation*<br>*Temporary closures and diversions of the footpaths will be implemented during construction work.*<br><br>*The meanders could be dredged in order to increase their depth and maintain them as a recreational facility for canoeing. The increased depth will benefit fish, reducing number of fish deaths and the associated smell. The dredged material would need to be disposed of appropriately.*<br><br>General<br>Hold the line maintain scenario will result in the long term protection of the Public Rights of Way (although with increasingly reduces accessibility during overtopping for paths on the flood banks) and the existing access routes to Foxhole Cottages and Coastguard Cottages. | |

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<tr><td rowspan="5">Farmland</td><td rowspan="4">Objective 4<br>To protect farmland where sustainable to do so</td><td>Sub Objectives</td><td colspan="3">4.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
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<tr><td colspan="8">4.2 To seek new opportunities for agricultural diversification and extensive farming i.e environmental stewardship payments for saltmarsh/habitat creation and restoring farming on natural systems such as floodplain wetlands.</td><td colspan="6" rowspan="2">Medium confidence (uncertainty over the number of incidences of over topping)</td></tr>
<tr><td colspan="8"><u>Short term</u><br>The number of incidences of over topping would increase. The floodplain would be protected from flooding, although the area immediately surrounding the embankments would be subject to over topping. This would over the longer-term lead to a degradation of grazing land, with no opportunity for agricultural diversification e.g. fisheries, wildfowling.<br><br><u>Medium and long term</u><br>As the number of over topping incidences increase the area of inundation will increase, resulting in the whole floodplain becoming wetter. This will eventually become unsuitable for grazing.</td></tr>
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<table>
<tr><td rowspan="6">Water Resources</td><td rowspan="4">Objective 5<br>To protect and enhance water resources</td><td>Sub Objectives</td><td colspan="3">5.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
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<tr><td colspan="8">5.1 Protect and enhance where possible the existing water quality of the tidal Cuckmere River.</td><td colspan="4" rowspan="2">High confidence (continuing existing practice).</td></tr>
<tr><td colspan="8"><u>Short term</u><br>The existing surface water quality of the tidal Cuckmere River would be maintained. There will be limited impacts during this epoch.<br><br><u>Medium and long term</u><br>The impact of climate change may impact on the ability of the land drainage system to drain surface water from the floodplain. This could have an adverse impact on the existing management practices. In addition, there is evidence of saline intrusion into the freshwater environment through the outfall (south of Exceat Bridge).</td></tr>
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<table>
<tr><td rowspan="5">Archaeology and Cultural Heritage</td><td rowspan="3">Objective 6<br>To protect features of archaeology and cultural heritage</td><td>Sub Objectives</td><td colspan="3">6.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
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<tr><td colspan="8">6.1 Protect or record features of archaeological and heritage importance in the Cuckmere Estuary.</td><td colspan="4" rowspan="2">High confidence (archaeological desk study) but low confidence with regards to potential for unknown sites.</td></tr>
<tr><td colspan="8"><u>Short term</u><br>Reinforcement of the bank crest will be required. The earth bank itself may be historic in places and construction works may affect areas of a medieval bank.<br><br>Over time the number of incidences of overtopping would increase. The floodplain would be protected from flooding, although the area immediately surrounding the embankments would be subject to over topping. In general the archaeology and cultural heritage of the Cuckmere estuary will remain undisturbed.<br><br>The mouth will be managed, ensuring no movement and therefore no impact on the anti-tank traps and other World War II artefacts.<br><br><u>Mitigation</u><br>Archaeological recording of the banks and provision of a watching brief on site during any excavation works.<br><br><u>Medium term</u><br>No further impacts.<br><br><u>Long term</u><br>Harder engineering solution will be required on the channel face of the earth banks. The earth bank itself may be historic in places and construction works may affect areas of a medieval bank.</td></tr>
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| | The western beach would require further stabilisation using rock armour and the eastern beach would be stabilised involving shingle renourishment. This will further protect the anti-tank traps and other second world war artefacts located behind the storm ridge.<br><br>*<u>Mitigation</u>*<br>*Archaeological recording of the banks and provision of a watching brief on site during any excavation works.* | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Landscape Character and Visual Amenity | Objective 7<br>To maintain and enhance landscape character and visual amenity features | Sub Objectives | 7.1 | | | | | Total | | | Adjusted Total | | |
| | | | S | M | L | | | S | M | L | S | M | L |
| | | Score | 1 | 0 | 0 | | | 1 | 0 | 0 | 1 | 0 | 0 |
| | | *Score with mitigation* | *1* | *0* | *0* | | | *1* | *0* | *0* | *1* | *0* | *0* |
| | 7.1 To maintain and enhance the landscape character in keeping with natural processes and the Sussex Downs AONB and Heritage Coast. | | | | | | | | | | | | | |
| | Short term<br>In the short term, erosion of the earth banks along the channel will continue, causing a gradual slight decline in visual quality. Siltation of the meanders will begin to be noticeable by the end of this epoch. The channel and flood banks will be patch repaired where necessary., and the general visual attributes of the area would remain static. The need to protect the crest of the flood bank will have visual implications both during and post construction, no PROW would be significantly affected. The existing native vegetation currently growing alongside the channel is likely to be lost through the construction stage, causing a moderate level of impact. The position of the channel across the centre of the valley floor means that this will have visual implications upon all identified viewpoints. However the general visual attributes of the area would remain static.<br><br>Medium term<br>It is likely that during this period, the form of channel and bank protection used will be similar to the existing practice. However, regular maintenance will be required. There will be an increase in number of over topping events, this could result in a wetter, more brackish environment on the floodplain potentially affecting the species composition. Replacement of groynes would be like for like, causing no visual change, however siltation of the meanders may be more evident during this epoch. The training walls would require replacing with more substantial structures to protect against scouring at the mouth. It is likely that these structures would be constructed from concrete and steel rather than timber (as existing). The level of impact would therefore be moderate adverse again. | | | | | | | | | | | | |

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| | Long term<br>Further siltation of the meanders will have occurred. Long term erosion of the earth banks along the channel will lead to the need for hard engineering solutions.<br><br>This will involve protection of the upper section (towards Exceat Bridge) with concrete revetment and protection of the lower section, towards the mouth, using steel sheet piling. Rock armour stabilisation of the western beach will also be necessary. The level of hard engineering protection required in the long term will cause a moderate adverse impact on landscape character. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Climate Change | Objective 8<br>To mitigate/minimise future impacts of climate change | Sub Objectives | 8.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *0* | *0* | *0* | | | *0* | *0* | *0* | *0* | *0* | *0* | |
| | 8.1 Ensure the strategy is sustainable in terms of long term climate change, specifically sea level rise. | | | | | | | | | | | | | High confidence |
| | Short term<br>This option would maintain the existing level of flood protection, and therefore does not take into account future requirements for climate change. The number of incidences of overtopping would increase, leading to regular inundation of the floodplain.<br><br>Medium and long term<br>The level of protection would continue to decrease, resulting in greater frequency of overtopping and an increase in the volume of saline water entering the floodplain. | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use of Natural Resources | Objective 9<br>To promote the principles of sustainable development | Sub Objectives | 9.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *0* | *0* | *0* | | | *0* | *0* | *0* | *0* | *0* | *0* | |
| | 9.1 Ensure the option promotes the principles of sustainable development in terms of use of natural resources, including minimisation of waste and, where possible, use of materials from sustainable sources. | | | | | | | High confidence | | | | | | |
| | This scenario does not promote the principles of sustainable development. There are a number of elements of work that require significant engineering works throughout the appraisal period. There is a significant amount of material required for the work, sustainable materials will be used where feasible however, it is anticipated that much of the materials required would have to be obtained from finite/unsustainable resources. | | | | | | | | | | | | | |

| | **S** | **M** | **L** |
|---|---|---|---|
| **OVERALL SCORE** | **3.5** | **2.5** | **2** |
| **OVERALL SCORE WITH MITIGATION** | **4.5** | **3.5** | **3.5** |

**Hold the Line – Sustain the Existing Line of Defence**

| **Receptor** | **Environmental Impact** | | | | | | | | | **Confidence in Prediction** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Local community and Built Environment | Objective 1<br>To reduce flood risk to human life and communities | Sub Objectives | 1.1 | | | 1.2 | | | | Total | | | Adjusted Total | | |
| | | | S | M | L | S | M | L | | S | M | L | S | M | L |
| | | Score | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | 2 | 2 | 1 | 1 | 1 |
| | | *Score with mitigation* | *1* | *1* | *1* | *1* | *1* | *1* | | *2* | *2* | *2* | *1* | *1* | *1* |
| | 1.1 Manage the risk of flooding to people, property, land and the environment (including upstream to the tidal limit at Milton Lock). | | | | | | | | | High confidence – modelling (continuing existing practice). | | | | | |
| | 1.2 Avoid or minimise damage to the existing transport and infrastructure services in the Cuckmere Estuary. | | | | | | | | | | | | | | |
| | <u>Short term</u><br>The existing maintenance practices will continue in the immediate term. These include removal of material from the mouth to prevent blocking, placement of this material on the west beach to prevent landward erosion and maintenance of the earth banks along the channel.<br><br>To sustain the existing level of protection the banks will be raised in phases. Phase 1 will be undertaken in the immediate term with the bank being raised and widened. There is also a requirement to reinforce the bank crest to prevent scour during an overtopping event. These construction works are likely to have a significant but temporary effect on the local community and residents.<br><br>This scenario will provide flood protection for the floodplain and the A259 to the existing standard for the duration of the appraisal period. The risks of flooding upstream are continually being managed. Stabilisation of both western and eastern beaches are provided at all stages of the appraisal period. | | | | | | | | | | | | | | |

| Receptor | Environmental Impact | Confidence in Prediction |
|---|---|---|
| | Medium term<br>The existing maintenance practices as outlined above will continue in the medium term.<br><br>The groynes will require replacement in the medium term, this will be required every 30 years. The groynes will assist in the stabilisation of the western beach.<br><br>Long term<br>The second phase of bank raising will be during this epoch. The construction work associated with this will be significant but temporary affecting the local community and residents.<br><br>Due to long term erosion of the banks, annual patch and repair work will not be sufficient. Harder engineering solutions are required. Further work will be required at the mouth of the estuary to replace the training structures with more substantial structures. The western beach will require further stabilisation using rock armour and the eastern beach would be stabilised using shingle renourishment. Again there would be significant construction work but the effect on the visiting community and local residents would be temporary.<br><br>This scenario will provide flood protection for the floodplain and the A259 to the existing standard for the duration of the appraisal period. The risks of flooding upstream are continually being managed. Stabilisation of both western and eastern beaches are provided at all stages of the appraisal period. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Biodiversity | Objective 2<br>To protect and enhance biodiversity | Sub Objectives | 2.1 | | | 2.2 | | | 2.3 | | | Total | | | Adjusted Total | | |
| | | | S | M | L | S | M | L | S | M | L | S | M | L | S | M | L |
| | | Score | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | *Score with mitigation* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* | *0* |
| | 2.1 Protect or create habitats that result from, or are subject to, natural coastal and estuarine processes. | | | | | | | | | | | | | | High confidence (current habitats have been mapped in phase 1 habitat surveys.<br><br>Low/Medium confidence with regards to the rate of siltation of the meanders. | | |
| | 2.2 Provide opportunities to enhance or protect the favourable condition status of habitats and species for which Seaford to Beachy Head SSSI is designated. Ensure any change in habitat provides net environmental gain | | | | | | | | | | | | | | | | |
| | 2.3 Protect, create or enhance biodiversity in the Cuckmere Estuary, in particular Biodiversity Action Plan (BAP) species and habitats. | | | | | | | | | | | | | | | | |

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| | Short term<br>The continuing erosion and loss of intertidal habitat in the main channel river will continue due to coastal squeeze. It is anticipated that the area of saltmarsh will be lost in the short term but highly likely by the medium term.<br><br>The habitat diversity of the SSSI will deteriorate with the loss of the saltmarsh in the main channel. This may result in a net environmental loss and may affect the favourable condition status of the site.<br><br>Continued recycling of shingle on the western beach and restoration following storm damage will continue to adversely impact on the vegetated shingle. The condition of this habitat in the Seaford to Beachy Head SSSI as compiled by English Nature is unfavourable but recovering, mainly due to impacts from flood defence maintenance on the western beach.<br><br>The loss of the saltmarsh in the main channel and the impact on the vegetated shingle, both Biodiversity Action Plan (BAP) habitats will result in a net environmental loss of BAP habitats.<br><br>*Mitigation*<br>*Mitigation for this scenario would include protection of species during construction e.g reptile exclusion around the working areas. Works would also be undertaken outside of sensitive periods ie breeding bird season.*<br><br>*English Nature should be consulted to prepare a method for shingle recycling that has the least damaging effect on the vegetated shingle.*<br><br>Medium term<br>Shingle recycling on the western beach will continue affecting the vegetated shingle. The continuing effects of coastal squeeze will result in the loss of the saltmarsh in the main channel. Both will result in a loss of BAP habitats causing a net environmental loss of habitat diversity in the SSSI. | |

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| | Long term<br>Further work will be required at the mouth of the estuary to replace the training structures with more substantial structures. The removal of the old structures and construction of the new structures are likely to have an effect on the vegetated shingle of both the east and west beaches. The western beach will need to be stabilised with rock armour. This will result in loss of a local BAP habitat as well as the condition status of the SSSI Unit. The eastern beach, which is currently generally stable will need shingle re-nourishment in the longer term. Again this will adversely impact on a BAP habitat and further deteriorate the condition of the SSSI Unit.<br><br>The meanders are currently silting up due to lack of flow through them. Although rates are unknown it is expected that in the long term the meanders could silt up completely. These are classed as saline lagoons within the Sussex Biodiversity Action Plan.<br><br>*Mitigation*<br>*Mitigation for this scenario would include protection of species during construction e.g reptile exclusion around the working areas. Works would also be undertaken outside of sensitive periods ie breeding bird season.*<br><br>*English Nature should be consulted to prepare a method for shingle recycling that has the least damaging effect on the vegetated shingle. The meanders could be dredged in order to increase their depth and reduce the impact on fish. The dredged material would need to be disposed of appropriately.* | |

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<tr><td colspan="8">3.1 Maintain quality of public rights of way and access.<br>3.2 To maintain amenity and tourist facilities and informal recreation and where possible provide opportunities to enhance facilities in the Cuckmere Estuary.</td><td colspan="6" rowspan="2">High confidence – detailed topographic survey for level of the footpaths.<br><br>Low/Medium confidence with regards to the rate of siltation of the meanders.</td></tr>
<tr><td colspan="8"><u>Short term</u><br>All the paths, permitted or otherwise will be protected from flooding and erosion in the Cuckmere Estuary. There will be short term, temporary diversions associated with the works to raise the banks during phase 1 and the patch and repair works required on the faces of the earth banks.<br><br>There is also a requirement to reinforce the bank crest to prevent scour during an overtopping event. These construction works are likely to have a benefit for users of the footpaths on the tops of the banks, creating a more substantial surface on which to walk.<br><br><u>Mitigation</u><br>Temporary closures and diversions of the footpaths will be implemented during construction work.<br><br><u>Medium term</u><br>Ongoing maintenance of the earth banks with patch and repair work will result in temporary closures of the footpaths on the earth banks.<br><br><u>Mitigation</u><br>Temporary closures and diversions of the footpaths will be implemented during construction work.</td></tr>
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| | Long term<br>In the long term phase 2 of the bank raising will be undertaken. This will need to combine with harder engineering solutions on the river channel and flood banks to provide protection from erosion. Both schemes will result in temporary closures of the footpaths on the earth banks.<br><br>More substantial works will be required on both beaches, the eastern beach will require renourishment which will have temporary short term impacts on the use of the beach by tourists. The western beach will require rock armour in the longer term which will reduce the area of shingle beach available for recreational use.<br><br>The meanders are currently silting up due to lack of flow through them. Although rates are unknown it is expected that in the long term the meanders could silt up completely. This will have a detrimental effect on the use of the meanders as a recreation (canoeing) facility, resulting in a net loss of recreation and amenity in the Cuckmere Estuary as there will be no alternative recreational pursuit to replace it.<br><br>*Mitigation*<br>*Temporary closures and diversions of the footpaths will be implemented during construction work.*<br><br>*The meanders could be dredged in order to increase their depth and maintain them as a recreational facility for canoeing. This will also reduce the number of fish deaths which are unpleasant for visitors to the estuary. The dredged material would need to be disposed of appropriately.*<br><br>General<br>Hold the line sustain scenario will result in the long term protection of the Public Rights of Way and the existing access routes to Foxhole Cottages and Coastguard Cottages. This makes the whole of the valley south of Exceat Bridge very accessible to all visitors. | |

<table>
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<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Score with mitigation</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td colspan="8">4.1 To protect the best and most versatile agricultural land, where sustainable.</td><td colspan="4" rowspan="3">Medium confidence (uncertainty over the number of incidences of over topping)</td></tr>
<tr><td colspan="8">4.2 To seek new opportunities for agricultural diversification and extensive farming i.e environmental stewardship payments for saltmarsh/habitat creation and restoring farming on natural systems such as floodplain wetlands.</td></tr>
<tr><td colspan="8"><u>Short term</u><br>The first phase of bank raising will involve increasing the crest height and widening the banks to provide stability. This will result in a loss of farmland in the new footprint of the bank but also on the wider working area. Raising the height of the wall will protect the farmland from overtopping events. This does not allow for agricultural diversification e.g. fisheries, wildfowling.<br><br><u>Medium term</u><br>Ongoing protection of the farmland from overtopping.<br><br><u>Long term</u><br>The second phase of bank raising will involve raising solely the crest of the defences.</td></tr>
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| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Water Resources | Objective 5<br>To protect and enhance water resources | Sub Objectives | 5.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | |
| | | *Score with mitigation* | *1* | *1* | *1* | | | *1* | *1* | *1* | *1* | *1* | *1* | |
| | 5.1 Protect and enhance where possible the existing water quality of the tidal Cuckmere River. | | | | | | | High confidence (continuing existing practice). | | | | | | |
| | Short term<br>The existing surface water quality of the tidal Cuckmere River would be maintained.<br><br>Medium term<br>No future impact.<br><br>Long term<br>No future impact. | | | | | | | | | | | | | |

<table>
<tr><td rowspan="6">Archaeology and Cultural Heritage</td><td rowspan="4">Objective 6<br>To protect features of archaeology and cultural heritage</td><td>Sub Objectives</td><td colspan="3">6.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Score with mitigation</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="10">6.1 Protect or record features of archaeological and heritage importance in the Cuckmere Estuary.</td><td rowspan="2">High confidence (archaeological desk study) but low confidence with regards to potential for unknown sites.</td></tr>
<tr><td colspan="10"><u>Short term</u><br>The first phase of bank raising will involve increasing the crest height and widening the banks to provide stability. This may result in an impact on unknown buried archaeology present in the footprint of the flood bank and strip of adjacent land. The earth bank itself may be historic in places and construction works may affect areas of a medieval constructed bank.<br><br>Although there is potential to impact archaeology in the footprint of the new earth bank, the raising height of the bank will result in protection of any archaeology in the wider floodplains.<br><br><u>Mitigation</u><br>Archaeological recording of the banks and provision of a watching brief on site during any excavation works.</td></tr>
</table>

| | | |
|---|---|---|
| | Medium term<br>No further impact in this epoch.<br><br>Long term<br>The second phase of bank raising will involve raising the crest of the defences. This will have a limited impact on the historic flood banks. Harder engineering solution will be required on the channel face of the earth banks. The earth bank itself may be historic in places and construction works may affect areas of a medieval bank.<br><br>The western beach would require further stabilisation using rock armour and the eastern beach would be stabilised using shingle renourishment. This will further protect the anti-tank traps and other Second World War.<br><br>*Mitigation*<br>*Archaeological recording of the banks and provision of a watching brief on site during any excavation works.* | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Landscape Character and Visual Amenity | Objective 7<br>To maintain and enhance landscape character and visual amenity features | Sub Objectives | 7.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *0* | *0* | *0* | | | *0* | *0* | *0* | *0* | *0* | *0* | |
| | 7.1 To maintain and enhance the landscape character in keeping with natural processes and the Sussex Downs AONB and Heritage Coast. | | | | | | | | | | | | | |
| | Short term<br>Due to the initial raising and the channel's pathway across the centre of the valley floor, the scenario would have slight visual implications from all identified viewpoints. Siltation of the meanders will be noticeable by the end of the short term period. The existing vegetation currently growing alongside the channel is likely to be lost through the construction stages. A moderate change in visual character will be evident in the short term from most receptor sites due to the expected loss of vegetation adjacent to the channel and the immediate raising in channel bank level.<br><br>Medium term<br>Regular maintenance of the channel and bank protection will be required. Replacement of groynes would be like for like, causing no visual change, however siltation of the meanders may be more evident during this epoch. The training walls would require replacing with more substantial structures to protect against scouring at the mouth. It is likely that these structures would be constructed from concrete and steel rather than timber (as existing). Therefore a moderate level of change is anticipated.<br>The Countryside Agency's response to this scenario is that is would have an adverse affect on the landscape<br><br>Long term<br>In the long term, complete siltation of the meanders will have occurred and the banks would be raised again. This would be in a manner consistent with existing trends due to the first raising in level whilst increasing the visual prominence of the banks, thereby giving a significant change from most viewpoints. | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Climate Change | Objective 8<br>To mitigate/minimise future impacts of climate change | Sub Objectives | 8.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *0* | *0* | *0* | | | *0* | *0* | *0* | *0* | *0* | *0* | |
| | 8.1 Ensure the strategy is sustainable in terms of long term climate change, specifically sea level rise. | | | | | | | High confidence | | | | | | |
| | Short term<br>This scenario takes into account climate change but not in a sustainable fashion. It will require ongoing maintenance and significant engineering work throughout the appraisal period. | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use of Natural Resources | Objective 9<br>To promote the principles of sustainable development | Sub Objectives | 9.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *0* | *0* | *0* | | | *0* | *0* | *0* | *0* | *0* | *0* | |
| | 9.1 Ensure the option promotes the principles of sustainable development in terms of use of natural resources, including minimisation of waste and, where possible, use of materials from sustainable sources. | | | | | | | High confidence | | | | | | |
| | This scenario does not promote the principles of sustainable development. There are a number of elements of work that require significant engineering works throughout the appraisal period. There is a significant amount of material required for the work, sustainable materials will be used where feasible however, it is anticipated that much of the materials required would have to be obtained from finite/unsustainable resources.. | | | | | | | | | | | | | |

| | **S** | **M** | **L** |
|---|---|---|---|
| **OVERALL SCORE** | **3** | **3** | **2.5** |
| **OVERALL SCORE WITH MITIGATION** | **4** | **4** | **4** |

**Managed Realignment – Breach Realignment (Cells B &C)**

| **Receptor** | **Environmental Impact** | | | | | | | | | **Confidence in Prediction** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Local community and Built Environment | Objective 1<br>To reduce flood risk to human life and communities | Sub Objectives | 1.1 | | | 1.2 | | | | Total | | | Adjusted Total | | |
| | | | S | M | L | S | M | L | | S | M | L | S | M | L |
| | | Score | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | 2 | 2 | 1 | 1 | 1 |
| | | *Score with mitigation* | *1* | *1* | *1* | *1* | *1* | *1* | | *2* | *2* | *2* | *1* | *1* | *1* |
| | 1.1 Manage the risk of flooding to people, property, land and the environment (including upstream to the tidal limit at Milton Lock). | | | | | | | | | Medium confidence – (modelling)<br><br>High confidence (breaches are planned, western training structure will remain to control the mouth). | | | | | |
| | 1.2 Avoid or minimise damage to the existing transport and infrastructure services in the Cuckmere Estuary. | | | | | | | | | | | | | | |

| Receptor | Environmental Impact | Confidence in Prediction |
|---|---|---|
| | Short term<br>The risk of the mouth blocking is removed by the continued monitoring and removal of material where required and maintenance of the western training wall.<br><br>The eastern training wall will be removed to allow the mouth to widen and deepen in order to cater for the increase in tidal prism.<br><br>The flood bank will be extended to isolate Cell A from Cell C. To sustain the existing level of protection the bank will also be raised in phases. Phase 1 will be undertaken in the short term with the bank being raised and widened. There is also a requirement to reinforce the bank crest to prevent scour during an overtopping event. These construction works are likely to have a significant but temporary effect on the local community and residents. This will allow for protection of the Foxhole Cottages access, the Canoe Barn and car park.<br><br>Controlled breaches of the flood banks will be undertaken at strategic locations. This will increase flood storage in the system.<br><br>Medium term<br>No further change.<br><br>Long term<br>The second phase of bank raising will be undertaken. The construction work associated with this will be significant but temporary affecting the local community and residents. This will allow for protection of the Foxhole Cottages access, Canoe Barn and car park.<br><br>In the long term the bank downstream from Exceat Bridge would need to be protected from erosion, this would require a hard engineering solution. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Biodiversity | Objective 2<br>To protect and enhance biodiversity | Sub Objectives | 2.1 | | | 2.2 | | | 2.3 | | | Total | | | Adjusted Total | | |
| | | | S | M | L | S | M | L | S | M | L | S | M | L | S | M | L |
| | | Score | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| | | *Score with mitigation* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *3* | *3* | *3* | *1* | *1* | *1* |
| | 2.1 Protect or create habitats that result from, or are subject to, natural coastal and estuarine processes.<br>2.2 Provide opportunities to enhance or protect the favourable condition status of habitats and species for which Seaford to Beachy Head SSSI is designated. Ensure any change in habitat provides net environmental gain<br>2.3 Protect, create or enhance biodiversity in the Cuckmere Estuary, in particular Biodiversity Action Plan (BAP) species and habitats. | | | | | | | | | | | | | | | | | | High confidence (niche modelling predicts likely communities that will develop). Current habitats have been mapped in Phase 1 habitat surveys.<br><br>High confidence (breaches are planned, western training structure will remain to control the mouth).<br><br>Low/medium confidence with regards to the rate of siltation of the meanders. |

| | | |
|---|---|---|
| | Short term<br>A planned breach of the flood banks will occur in the short term which will result in inundation of the western and southern part of the eastern floodplain. This inundation will result in freshwater habitat reverting to maritime and coastal habitat eg saltmarsh and mudflats. The formation of a partially self-sustaining, stable estuary and intertidal habitats will occur during the short term resulting in a net gain of habitats created from natural coastal and estuarine processes.<br><br>The SSSI will benefit from an overall increase in habitat diversity, with a greater mosaic of habitats than are currently present. The reversion of the freshwater and terrestrial habitats to intertidal habitats provides a net environmental gain, with the area upstream of Exceat Bridge retaining similar freshwater and terrestrial habitats.<br><br>English Nature in a recent discussion paper have stated that complete transformation of a freshwater to a saline habitat may be accepted without the requirement for recreated freshwater habitat elsewhere, where the replacement coastal habitat is considered to represent the preferred conservation outcome or adequately mitigates for the loss of the freshwater habitat.<br><br>Once the estuary and the intertidal habitats have stabilised there will be a net gain in BAP Habitats. The coastal grazing marsh will revert to intertidal habitats including saltmarsh and mudflats. The stable system will gave greater conservation value with increased biodiversity. The loss of BAP habitat will be addressed in suitable areas outside of the estuary. No loss or gain in BAP species will occur through the change to intertidal habitats. A large area of grazing marsh upstream of Exceat will still remain.<br><br>Medium and long term<br>The intertidal habitat will continue to develop and diversify, as will the species associated with them eg invertebrate and bird populations.<br><br>*Mitigation*<br>*Mitigation for this method would include protection of species during construction e.g reptile exclusion around the working areas. Works would also be undertaken outside of sensitive periods ie breeding bird season.*<br><br>*Prior to breaches, protected species will be moved from the floodplain. English Nature should be consulted to prepare a method for shingle recycling that has the least damaging effect on the vegetated shingle.*<br><br>*The meanders could be dredged in order to increase their depth and reduce the impact on fish. The dredged material would need to be disposed of appropriately.* | English Nature (EC48/05) Discussion Paper: A decision framework for dealing with freshwater habitats and species in the sustainable management of coasts and estuaries, 12 December 2005 |

<table>
<tr><td rowspan="6">Recreation and Tourism</td><td rowspan="4">Objective 3<br>To maintain and enhance opportunities for recreation and tourism</td><td>Sub Objectives</td><td colspan="3">3.1</td><td colspan="3">3.2</td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td></td><td>1</td><td>1</td><td>1</td><td>.5</td><td>.5</td><td>.5</td></tr>
<tr><td>Score with mitigation</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td>2</td><td>2</td><td>2</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="11">3.1 Maintain quality of public rights of way and access.</td><td rowspan="3">High confidence – detailed topographic survey for level of the footpaths.<br><br>Low/medium confidence with regards to the rate of siltation of the meanders.</td></tr>
<tr><td colspan="11">3.2 To maintain amenity and tourist facilities and informal recreation and where possible provide opportunities to enhance facilities in the Cuckmere Estuary.</td></tr>
<tr><td colspan="11"><u>Short term</u><br>Inundation of the western and southern part of the eastern floodplain would result in a loss of the Public Right of Way (PRoW) on the western flood bank as well as the southerly section on the eastern flood bank. A number of other permitted footpaths leading to the beach on the east would become inundated. Operating authorities have a duty of care to ensure that appropriate warnings are given to users of the area that will become inundated. It is the duty of the Environment Agency to provide re-routed footpaths under the Managed Realignment scenario.<br><br>The PRoW on the eastern flood bank would remain on the section bordering Cell A and would be extended as part of the works to isolate Cell A from Cell C. There would be temporary disruption to this route during Phase 1 of the raising of the flood banks.<br><br>Access to the beach on the east would become inundated but a route will remain on the west via the Vanguard Way. The eastern training wall will not be maintained, which will allow the mouth to widen and deepen to cater for the increased tidal prism. This will have an impact by shortening the length of beach on the east.<br><br>The isolation of Cell A would ensure that the existing meanders are protected and remain as a recreational resource for canoeing. It also affords protection to the Canoe Barn, the car park and the access track to the Foxhole Cottages.</td></tr>
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| | | |
|---|---|---|
| | There will be an overall net gain in recreation and amenity in the Cuckmere Estuary. The creation of intertidal habitat will improve the site for bird watchers, and even provide the possibility for new recreational pursuits such as wildfowling and sports fishing.<br><br>*Mitigation*<br>*Temporary closures and diversions of the footpaths will be implemented during construction work.*<br><br>*A new PRoW on the west would be created on higher ground to replace the one lost on the flood embankment. This would combine with the Vanguard way and form a circular route with access to the western beach.*<br><br>*On the east an access route to the beach will be maintained, this will be in the form of a raised boardwalk or a raised path cut into the chalk ridge.*<br><br>Medium term<br>No further change.<br><br>Long term<br>In the long term phase 2 of the bank raising will be undertaken. This will need to combine with harder engineering solutions on the earth banks. Both schemes will result in temporary closures of the footpaths on the earth banks.<br><br>The meanders are currently silting up due to lack of flow through them. Although rates are unknown it is expected that in the long term the meanders could silt up completely.<br><br>*Mitigation*<br>*Temporary closures and diversions of the footpaths will be implemented during construction work. The meanders could be dredged in order to increase their depth and maintain them as a recreational facility for canoeing. This will also reduce the number of fish deaths which are unpleasant for visitors to the estuary. The dredged material would need to be disposed of appropriately.* | |

<table>
<tr><td rowspan="5">Farmland</td><td rowspan="4">Objective 4<br>To protect farmland where sustainable to do so</td><td>Sub Objectives</td><td colspan="3">4.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>I</td><td>M</td><td>L</td><td></td><td></td><td>I</td><td>M</td><td>L</td><td>I</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="8">4.2 To seek new opportunities for agricultural diversification and extensive farming i.e environmental stewardship payments for saltmarsh/habitat creation and restoring farming on natural systems such as floodplain wetlands.</td><td colspan="6" rowspan="2">High certainty of inundation.<br><br>Medium certainty over agri-environmental schemes.</td></tr>
<tr><td colspan="8"><u>Short term</u><br>Inundation of the western and southern part of the eastern floodplain will result in flooding of grazed land and a reversion to intertidal habitats. This will allow opportunities for agricultural diversification and for environmental stewardships to be applied for.<br><br>Extension of the eastern flood bank to isolate Cell A from Cell C and raising it will protect Cell A from flooding which can continue to be used for grazing.<br><br>Once the estuary and intertidal habitats have stabilised there is the potential for alternative agricultural practices to be undertaken. Saltmarsh and the creek habitats that form are suitable for a number of commercial fishery species. The saltmarsh itself could provide a crop species in the form of samphire (Salicornia). Wildfowling is also a possible alternative agricultural practice.<br><br><u>Medium and long term</u><br>No further impact</td></tr>
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<table>
<tr><td rowspan="5">Water Resources</td><td rowspan="4">Objective 5<br>To protect and enhance water resources</td><td>Sub Objectives</td><td colspan="3">5.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>I</td><td>M</td><td>L</td><td></td><td></td><td>I</td><td>M</td><td>L</td><td>I</td><td>M</td><td>L</td></tr>
<tr><td></td><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td></td><td>Score with mitigation</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td colspan="9">5.1 Protect and enhance where possible the existing water quality of the tidal Cuckmere River.</td><td colspan="4" rowspan="2">High short term<br><br>Medium long term</td></tr>
<tr><td colspan="9"><u>Short term</u><br>Inundation of the floodplains following the breach may result in an increase in turbidty which would affect the surface water quality of the estuary. This has the potential to impact on species diversity, in particular fish and invertebrates.<br><br><u>Medium and long term</u><br>Following the stabilisation of the estuary and intertidal habitats the saltmarsh will act as a sediment trap.</td></tr>
</table>

<table>
<tr><td rowspan="6">Archaeology and Cultural Heritage</td><td rowspan="4">Objective 6<br>To protect features of archaeology and cultural heritage</td><td>Sub Objectives</td><td colspan="3">6.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Score with mitigation</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="8">6.1 Protect or record features of archaeological and heritage importance in the Cuckmere Estuary.</td><td colspan="6" rowspan="2">Low confidence with regards to the potential for unknown archaeology.<br><br>High confidence in location of the</td></tr>
<tr><td colspan="8"><u>Short term</u><br>Phase 1 of bank raising will involve raising and widening the banks remaining adjacent to Cell A. The flood banks are also going to be extended to isolate Cell A from Cell C. This may result in an impact on unknown buried archaeology present in the footprint of the flood bank. The earth bank itself may be historic in places and construction works may affect areas of a medieval constructed bank.<br><br>Although there is potential to impact archaeology in the footprint of the new earth bank, raising the height of the remaining flood bank will result in protection of any archaeology present in Cell A.<br><br>Gradual inundation will result in the creation of a more stable and wet environment with preservation of buried artefacts.<br><br><u>Mitigation</u><br>Archaeological recording of the banks and second world war artefacts and provision of a watching brief on site during any excavation works.</td></tr>
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| | | |
|---|---|---|
| | Medium term<br>No further impact<br><br>Long term<br>Phase 2 of bank raising will involve raising and widening the banks as well as further harder engineering to protect Exceat Bridge. This may result in an impact on unknown buried archaeology present in the footprint of the wider wall. The earth bank itself may be historic in places and construction works may affect areas of a medieval constructed bank.<br><br>Removal of the eastern training wall will result in the widening and deepening of the mouth. This may have an impact on the second world war artefacts on the east. Some may require removal for health and safety reasons.<br><br>*Mitigation*<br>Archaeological recording of the banks and second world war artefacts and provision of a watching brief on site during any excavation works. | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Landscape Character and Visual Amenity | Objective 7<br>To maintain and enhance landscape character and visual amenity features | Sub Objectives | 7.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *0* | *0* | *0* | | | *0* | *0* | *0* | *0* | *0* | *0* | |
| | 7.1 To maintain and enhance the landscape character in keeping with natural processes and the Sussex Downs AONB and Heritage Coast. | | | | | | | | | | | | | |
| | Short term<br>By the end of the short term epoch, initial siltation of the meanders is likely to be noticeable. Hard engineering solutions and bank raising would create an immediate visual change to the valley floor in the short term. The proposed diversion of the South Downs Way and footpath extension around Harry's Bush and Walls Brow may be slightly noticeable as additional tracks. An extension of the existing defence line will cut short the existing receptor footpath (4a) which runs alongside the east side of the river. The landscape to the north of the site, covering cell A, should remain in its current visual form. The eastern training wall will be removed prior to the in order to allow the widening and deepening of the mouth and the migration of the mouth to the east. This will lead to a loss of beach on the eastern side of the valley. It is anticipated that a moderate visual change will be noticed from all identified viewpoints in the short term, with a more wetland character spreading across cells B and C. An increase in saltmarsh related vegetation is expected in these areas, giving a more varied and textural visual appearance. | | | | | | | | | | | | | |

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|---|---|---|
| | Medium term<br>In the medium term, the valley will continue to adjust and establish. Siltation of the meanders will be more obvious and the creek system will be more defined, providing a slight adverse level of impact. Regular maintenance of the channel and bank protection will be required.<br><br>Long term<br>In the long term, complete siltation of the meanders will have occurred. The banks along cell A would be further raised, creating a visually more prominent line across the landscape. The channel adjacent to the bridge and top of the meanders may require hard engineering to protect against erosion, creating a slightly heavier visual quality from viewpoints encompassing the bridge. The estuary (south of Exceat Bridge) will be functioning as a mature estuary. Sea level rise will start to impact on the extent and spread of saltmarsh in the estuary. | |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Climate Change | Objective 8<br>To mitigate/minimise future impacts of climate change | Sub Objectives | 8.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 1 | 1 | | | 0 | 1 | 1 | 0 | 1 | 1 | |
| | | *Score with mitigation* | *0* | *1* | *1* | | | *0* | *1* | *1* | *0* | *1* | *1* | |
| | 8.1 Ensure the strategy is sustainable in terms of long term climate change, specifically sea level rise. | | | | | | | | | | | | | High |
| | Short term<br>The existing defences are protecting low grade agricultural land and few properties at a current low level of protection. Breaches will occur in a controlled manner with monitoring of the mouth. The creation of an extended flood embankment does not make this sustainable in terms of long term climate change as it will need to be maintained and raised.<br><br>Medium and long term<br>The formation of a partially self sustaining, naturally functioning system is likely to occur in the medium term onwards. There will be a change in the performance of the estuary to cope with climate change. The mouth will widen and deepen as the sea level rises There will be a need to maintain the eastern flood bank and undertake a second phase of bank raising to sustain the existing standard of protection for Cell A.<br>No further impact. | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use of Natural Resources | Objective 9<br>To promote the principles of sustainable development | Sub Objectives | 9.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 0 | 0 | 0 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| | | *Score with mitigation* | *0* | *0* | *0* | | | *0* | *0* | *0* | *0* | *0* | *0* | |
| | 9.1 Ensure the option promotes the principles of sustainable development in terms of use of natural resources, including minimisation of waste and, where possible, use of materials from sustainable sources. | | | | | | | High | | | | | | |
| | Short term<br>Phase 1 of bank raising works and the extension of the flood bank to isolate Cell A from Cell C will involve substantial material being brought into the site for use in extending, raising and widening the bank. The crest of the bank will also require reinforcement to prevent scour during an overtopping event.<br><br>The mouth will continue to be monitored and shingle recycled onto the western beach where necessary. Although this is recycling of material, the system will never become fully naturalised and therefore will always require a certain amount of intervention.<br><br>Medium term<br>No further impact<br><br>Long term<br>Phase 2 of bank raising works will involve substantial material being brought into the site for use in raising the bank again and widening it. Further harder engineering will also be required to protect Exceat Bridge. | | | | | | | | | | | | | |

| | I | M | L |
|---|---|---|---|
| **OVERALL SCORE** | **3.5** | **5.5** | **5.5** |
| **OVERALL SCORE WITH MITIGATION** | **5** | **7** | **7** |

**Managed Realignment – Breach Realignment (Cells A, B & C)**

| **Receptor** | **Environmental Impact** | | | | | | | | | **Confidence in Prediction** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Local community and Built Environment | Objective 1<br>To reduce flood risk to human life and communities | Sub Objectives | 1.1 | | | 1.2 | | | | Total | | | Adjusted Total | | |
| | | | S | M | L | S | M | L | | S | M | L | S | M | L |
| | | Score | 1 | 1 | 1 | 1 | 1 | 1 | | 2 | 2 | 2 | 1 | 1 | 1 |
| | | *Score with mitigation* | *1* | *1* | *1* | *1* | *1* | *1* | | *2* | *2* | *2* | *1* | *1* | *1* |
| | 1.1 Manage the risk of flooding to people, property, land and the environment (including upstream to the tidal limit at Milton Lock). | | | | | | | | | Medium confidence – modelling<br><br>High confidence (breaches are planned, western training structure will remain to control the mouth). | | | | | |
| | 1.2 Avoid or minimise damage to the existing transport and infrastructure services in the Cuckmere Estuary. | | | | | | | | | | | | | | |

| Receptor | Environmental Impact | Confidence in Prediction |
|---|---|---|
| | Short term<br>The eastern training wall will be removed to allow the mouth to widen in an easterly direction in order to cater for the increase in tidal prism. There will be a one off removal of material at the mouth which will aid migration to the east. The material that is removed from the mouth will be redistributed on to the western beach to provide additional protection and hence protect the western cliffs.<br><br>In order to stabilise the system during neap tides there is a requirement for excavation of material in the floodplain in Cell C. This material will be used to construct a shallow gradient closing bank in Cell A to protect the Canoe Barn, car park and provide some protection to the A259. These construction works are likely to have a significant but temporary effect on the local community and residents.<br><br>Once the above work has been completed a controlled breach of the flood banks will be undertaken at strategic locations. This will increase flood storage in the system.<br><br>The beach will begin to migrate landwards by 20m (on the west) forming a pocket beach. The profile of the beach is likely to flatten and widen. The beaches on the east and west will be monitored for erosion. This reduces the risk to the cliffs on the west and the privately owned defences.<br><br>The formation of a self sustaining, naturally functioning system is likely to occur in the short term onwards. This is likely to include part of the meander as a tidal limb to the main channel.<br><br>Medium term<br>The mouth will continue to widen and deepen to cater for the increase in tidal prism.<br><br>Long term<br>Current predictions are that a delta will form at the mouth assisting the protection on the western beach, the cliff face and the privately owned defences. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Biodiversity | Objective 2<br>To protect and enhance biodiversity | Sub Objectives | 2.1 | | | 2.2 | | | 2.3 | | | Total | | | Adjusted Total | | |
| | | | S | M | L | S | M | L | S | M | L | S | M | L | S | M | L |
| | | Score | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 3 | 1 | 1 | 1 |
| | | *Score with mitigation* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *1* | *3* | *3* | *3* | *1* | *1* | *1* |
| | 2.1 Protect or create habitats that result from, or are subject to, natural coastal and estuarine processes. | | | | | | | | | | | High confidence (niche modelling predicts likely communities that will develop). Current | | | | | |
| | 2.2 Provide opportunities to enhance or protect the favourable condition status of habitats and species for which Seaford to Beachy Head SSSI is designated. Ensure any change in habitat provides net environmental gain | | | | | | | | | | | | | | | | |
| | 2.3 Protect, create or enhance biodiversity in the Cuckmere Estuary, in particular Biodiversity Action Plan (BAP) species and habitats. | | | | | | | | | | | | | | | | |

| | | |
|---|---|---|
| | Short term<br>Once the flood banks are breached, inundation of the whole estuary south of the Exceat Bridge will result in a change of ecological assemblages with freshwater and terrestrial habitat reverting to maritime and coastal habitat. The estuary will go through a phase of instability and transition whilst the intertidal habitat forms. A naturally functioning system is likely to occur in the short term onwards resulting in a stable intertidal environment.<br><br>There will be a one off removal of material from the mouth to aid migration eastwards. The removal of the eastern training wall will result in the widening and deepening of the mouth, with the likely result of the mouth migrating to the east. This will create a more stable shingle ridge for the vegetated shingle.<br><br>In the short term the reversion of freshwater and terrestrial habitats to marine and coastal habitats would be considered a net environmental gain to the SSSI. The site will benefit from an overall increase in habitat diversity, with a greater mosaic of habitats than are currently present.<br><br>English Nature in a recent discussion paper have stated that complete transformation of a freshwater to a saline habitat may be accepted without the requirement for recreated freshwater habitat elsewhere, where the replacement coastal habitat is considered to represent the preferred conservation outcome or adequately mitigates for the loss of the freshwater habitat. | habitats have been mapped in Phase 1 habitat surveys.<br><br>High confidence (breaches are planned, western training structure will remain to control the mouth). |

| | | |
|---|---|---|
| | The formation of a self sustaining, naturally functioning system is likely to occur in the short term onwards. This will result in a stable intertidal environment and the creation of 108ha of intertidal habitat a Biodiversity Action Plan (BAP) habitat.<br><br><u>*Mitigation*</u><br>*Mitigation for this method would include protection of species during construction e.g reptile exclusion around the working areas. Works would also be undertaken outside of sensitive periods ie breeding bird season.*<br><br>*Prior to breaches, protected species will be moved from the floodplains, either naturally or through management. Habitats in the surrounding area can be enhanced as habitat or foraging grassland.*<br><br>*Compensatory habitats for those terrestrial and freshwater habitats lost could be created in the surrounding area. Habitats such as the saline lagoons may be recreated as scrapes in the floodplain.*<br><br>*English Nature should be consulted to prepare a method for shingle recycling that has the least damaging effect on the vegetated shingle.*<br><br><u>Medium and long term</u><br>The intertidal habitat will continue to evolve ie *Salicornia* to *Halimone*, as will the species associated with them e.g. invertebrate and bird populations.<br><br><u>*Mitigation*</u><br>Protection of species during construction e.g. reptile exclusion around the working areas. Works would also be undertaken outside of sensitive periods i.e. bird breeding season. | English Nature (EC48/05) Discussion Paper: A decision framework for dealing with freshwater habitats and species in the sustainable management of coasts and estuaries, 12 December 2005 |

<table>
<tr><td rowspan="6">Recreation and Tourism</td><td rowspan="4">Objective 3<br>To maintain and enhance opportunities for recreation and tourism</td><td>Sub Objectives</td><td colspan="3">3.1</td><td colspan="3">3.2</td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td></td><td>1</td><td>1</td><td></td><td>.5</td><td>.5</td><td>.5</td></tr>
<tr><td>Score with mitigation</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td></td><td>2</td><td>2</td><td>2</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="11">3.1 Maintain quality of public rights of way and access.</td><td rowspan="3">High confidence – detailed topographic survey for level of the footpaths.<br><br>Low/medium confidence with regards to the rate of siltation of the meanders.</td></tr>
<tr><td colspan="11">3.2 To maintain amenity and tourist facilities and informal recreation and where possible provide opportunities to enhance facilities in the Cuckmere Estuary.</td></tr>
<tr><td colspan="11"><u>Short term</u><br>The Public Right of Way (PRoW) along both embankments would be lost once the banks are breached. The other permitted footpaths and paths on the eastern floodplain would be subject to increasingly frequent inundation as water levels rise. Operating authorities have a duty of care to ensure that appropriate warnings are given to users of the area that will become inundated. It is the duty of the Environment Agency to provide re-routed footpaths under the Managed Realignment scenario where this provides a benefit for flood risk.<br><br>The formation of a self sustaining, naturally functioning system is likely to occur in the short term onwards. This is likely to include reinstatement of the meander into the tidal regime. The construction of the closing bank would ensure that a short length of the meander would remain protected as a recreational resource for canoeing. It would also afford protection to the Canoe Barn and the car park. The remaining length of the meander will form a limb to the main channel, which may be accessible for more experienced canoeists.</td></tr>
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|---|---|---|
| | There will be an overall net gain in recreation and amenity in the Cuckmere Estuary, the meander will have silted up in the long term under the current hold the line regime negating its use as a canoe facility. The creation of intertidal habitat will improve the site for bird watchers, and even provide the possibility for new recreational pursuits such as wildfowling and sports fishing.<br><br>*Mitigation*<br>*A new PRoW on the west would be created on higher ground to replace the one lost on the flood embankment. This would combine with the Vanguard way and form a circular route with access to the western beach.*<br><br>*On the east an access route to the beach will be maintained. This will be in the form of a raised boardwalk or a high level path cut into the chalk ridge.*<br><br>Medium term<br>No further change.<br><br>Long term<br><br>The existing length of meander, protected by the closing bank would continue to silt up. Although the rates are unknown, it is expected that in the long term the length of meander behind the closing bank could silt up completely. This will have a detrimental effect on the use of the meanders as a canoe facility. The fish deaths associated with shallow waters will also make an unpleasant environment for tourists.<br><br>*Mitigation*<br><br>The remaining length of meander could be dredged in order to increase their depth and maintain them as a recreational facility for canoeing. This will also reduce the number of fish deaths which are unpleasant for visitors to the estuary. The dredged material would need to be disposed of appropriately. | |

<table>
<tr><td rowspan="6">Farmland</td><td rowspan="4">Objective 4<br>To protect farmland where sustainable to do so</td><td>Sub Objectives</td><td colspan="3">4.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="8">4.1 To protect the best and most versatile agricultural land, where sustainable.</td><td colspan="6" rowspan="3">High certainty of inundation.<br><br>Medium certainty over agri-environmental schemes.</td></tr>
<tr><td colspan="8">4.2 To seek new opportunities for agricultural diversification and extensive farming i.e environmental stewardship payments for saltmarsh/habitat creation and restoring farming on natural systems such as floodplain wetlands.</td></tr>
<tr><td colspan="8"><u>Short term</u><br>Inundation of the western and eastern flood plain will result in flooding of grazed land and a reversion to intertidal habitats. This will allow for environmental stewardships to be applied for.<br><br>Once the estuary and intertidal habitats have stabilised there is the potential for alternative agricultural practices to be undertaken. Saltmarsh and the creek habitats that form are suitable for a number of commercial fishery species e.g. bass and mullet and form an important nursery area for other marine fish. The saltmarsh itself could provide a crop species in the form of samphire (Salicornia). Wildfowling is also a possible alternative agricultural practice.<br><br><u>Medium term</u><br>No further impact<br><br><u>Long term</u><br>No further impact</td></tr>
</table>

<table>
<tr><td rowspan="5">Water Resources</td><td rowspan="4">Objective 5<br>To protect and enhance water resources</td><td>Sub Objectives</td><td colspan="3">5.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td colspan="10">5.1 Protect and enhance where possible the existing water quality of the tidal Cuckmere River.</td><td>High short term<br><br>Medium long term</td></tr>
<tr><td colspan="10">Short term<br>Inundation of the floodplains following the breach may result in an increase in turbidity which would affect the surface water quality of the estuary. This has the potential to impact on species diversity, in particular fish and invertebrates.<br><br>Following the stabilisation of the estuary and formation of intertidal habitats the saltmarsh will act as a sediment trap.<br><br>Medium term<br>No further impact.<br><br>Long term<br>No further impact.</td></tr>
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<table>
<tr><td rowspan="5">Archaeology and Cultural Heritage</td><td rowspan="4">Objective 6<br>To protect features of archaeology and cultural heritage</td><td>Sub Objectives</td><td colspan="3">6.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>0</td><td>0</td><td></td><td></td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr>
<tr><td>Score with mitigation</td><td>1</td><td>1</td><td>1</td><td></td><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td colspan="10">6.1 Protect or record features of archaeological and heritage importance in the Cuckmere Estuary.</td></tr>
<tr><td colspan="9">Short term<br>Excavation of material in Cell C has high potential for unearthing/disturbing buried archaeology.<br><br>The archaeology desk study has concluded that inundation of the floodplains would result in loss or damage to significant archaeological features within the Cuckmere Estuary. Among which are the remains of a system of medieval ‘innings’ or dykes. Creation of saltmarsh and mudflat is likely to reduce the potential for future palaeo-environmental analysis of the valley floor and alter or damage underlying deposits. However, gradual inundation will result in the creation of a more stable and wet environment with preservation of buried artefacts.<br><br>The beach will begin to migrate landwards by 20m (on the west) forming a pocket beach. This has the potential to impact on the Second World War military defences (anti tank traps).<br><br>Mitigation<br>Archaeological recording of the excavation of the banks and second world war artefacts and provision of a watching brief during any excavation work.</td><td>Low confidence with regards to the potential for unknown archaeology.<br><br>High confidence in location of second world war artefacts.</td></tr>
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|---|---|---|
| | Medium term<br>Exceat Bridge would need to be protected from erosion, this would require a hard engineering solution on the bank down stream. The earth bank itself may be historic in places and construction works may affect areas of a medieval constructed bank.<br><br>*Mitigation*<br>Archaeological recording of the banks and provision of a watching brief during any excavation work.<br><br>Long term<br>No further impact. | |

<table>
<tr><td rowspan="5">Landscape Character and Visual Amenity</td><td rowspan="4">Objective 7<br>To maintain and enhance landscape character and visual amenity features</td><td>Sub Objectives</td><td colspan="3">7.1</td><td></td><td></td><td colspan="3">Total</td><td colspan="3">Adjusted Total</td></tr>
<tr><td></td><td>S</td><td>M</td><td>L</td><td></td><td></td><td>S</td><td>M</td><td>L</td><td>S</td><td>M</td><td>L</td></tr>
<tr><td>Score</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>Score with mitigation</td><td>0</td><td>1</td><td>1</td><td></td><td></td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td colspan="11">7.1 To maintain and enhance the landscape character in keeping with natural processes and the Sussex Downs AONB and Heritage Coast.</td></tr>
<tr><td colspan="11"><u>Short term</u><br>Several changes will occur in the immediate short term, but are likely to be of a visually subtle nature. The closing bank to protect the Canoe Barn and car park consists of a shallow gradient, likely to be visually imperceptible. The proposed diversion of the South Downs Way and footpath extension around Harry's Bush and Walls Brow may be noticeable as additional tracks in the style of existing footpaths. Removal of material at the mouth, re-nourishment of the western beach and excavation of material in Cell C is unlikely to create significant visual change. Breaching of the flood bank is unlikely to have high visual implications in the short term. Although the gaps will be obvious, they will not provide a visual detractor within the landscape. A wetter landscape, particularly during the winter months, will be noticeable. The change to a more wetland character is likely to be gradual, by the end of this period the adjustment to saltmarsh should be evident. The meanders may become incorporated into the tidal system, retaining the feature. From most viewpoints, a moderate impact is predicted in the short term.</td></tr>
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|---|---|---|
| | Medium term<br>In the medium term, it is likely that the meanders will be well established as a visual feature of the valley and will be functioning as a tidal limb to the main channel. A more wetland character will be spreading across the valley floor. A saltmarsh character will be well developed, giving a more varied and textural visual appearance. Existing ponds in this area may be lost, but a more distinct creek system will have developed. The beach will migrate landward on the western side and is likely to flatten and widen in profile to form a pocket beach.<br><br>Long term<br>In the long term, an increase in saltmarsh character may have occurred, visible from all identified viewpoints. A self sustaining estuary is expected to be formed. An inundation of *Halimione* (Sea purslane) is likely, providing a textured landscape. The meanders will be fully established as a tidal limb to the main channel, appearing slightly different as the water levels alter revealing an increase in mud at low tide. | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Climate Change | Objective 8<br>To mitigate/minimise future impacts of climate change | Sub Objectives | 8.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | S | M | L | |
| | | Score | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | |
| | | *Score with mitigation* | *1* | *1* | *1* | | | *1* | *1* | *1* | *1* | *1* | *1* | |
| | 8.1 Ensure the strategy is sustainable in terms of long term climate change, specifically sea level rise. | | | | | | | | | | | | | High |
| | Short term<br>The formation of a self sustaining, naturally functioning system is likely to occur in the short term onwards. This will naturally adjust to the impact of sea level rise. This is likely to include reinstatement of part of the meander as a tidal limb to the main channel. As the system adjusts the channel will improve the conveyance of flows and further improve the flood risk upstream. The floodplain will act as flood storage. | | | | | | | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Use of Natural Resources | Objective 9<br>To promote the principles of sustainable development | Sub Objectives | 9.1 | | | | | Total | | | Adjusted Total | | | |
| | | | S | M | L | | | S | M | L | I | M | L | |
| | | Score | 1 | 1 | 1 | | | 1 | 1 | 1 | 1 | 1 | 1 | |
| | | *Score with mitigation* | *1* | *1* | *1* | | | *1* | *1* | *1* | *1* | *1* | *1* | |
| | 9.1 Ensure the option promotes the principles of sustainable development in terms of use of natural resources, including minimisation of waste and, where possible, use of materials from sustainable sources. | | | | | | | High | | | | | | |
| | Short term<br>This scenario removes the need to continue shingle recycling and in the longer-term replenishment from an outside source. It also removes the need for future embankment protection and work on the training structures.<br><br>The shallow closing wall will be constructed using material excavated from Cell C.<br><br>Medium term<br>The formation of a self sustaining, naturally functioning system is likely to occur in the medium term onwards. This is likely to include part of the meander as a tidal limb.<br><br>Long term<br>No further impact. | | | | | | | | | | | | | |
| | | | | | | | | **I** | | **M** | | | **L** | |
| **OVERALL SCORE** | | | | | | | | **5.5** | | **7.5** | | | **7.5** | |
| **OVERALL SCORE WITH MITIGATION** | | | | | | | | **7** | | **9** | | | **9** | |

**SUMMARY**

| **No Active Intervention** | | | |
|---|---|---|---|
| | I | M | L |
| OVERALL SCORE | 0 | 7 | 7 |
| OVERALL SCORE WITH MITIGATION | N/A | | |
| **No Active Intervention – Exit Strategy** | | | |
| | I | M | L |
| OVERALL SCORE | 3 | 8 | 8 |
| OVERALL SCORE WITH MITIGATION | N/A | | |
| **Hold the Line – Maintain the Existing Line of Defence** | | | |
| | I | M | L |
| OVERALL SCORE | 3.5 | 2.5 | 2 |
| OVERALL SCORE WITH MITIGATION | 4.5 | 3.5 | 3.5 |
| **Hold the Line – Sustain the Existing Line of Defence** | | | |
| | I | M | L |
| OVERALL SCORE | 3 | 3 | 2.5 |
| OVERALL SCORE WITH MITIGATION | 4 | 4 | 4 |
| **Managed Realignment – Breach Realignment (Cells B & C)** | | | |
| | I | M | L |
| OVERALL SCORE | 3.5 | 5.5 | 5.5 |
| OVERALL SCORE WITH MITIGATION | 5 | 7 | 7 |
| **Managed Realignment – Breach Realignment (Cells A, B & C)** | | | |
| | I | M | L |
| OVERALL SCORE | 5.5 | 7.5 | 7.5 |
| OVERALL SCORE WITH MITIGATION | 7 | 9 | 9 |