

Appendix L – PDZ3 Poole Harbour and Associated Coastline Appropriate Assessment

Primary Qualifying Feature	Supporting Habitat/Species	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude <u>no</u> adverse affect on integrity?
Poole Harbour SPA								
<p>Internationally important Article 4.1 Species:</p> <ol style="list-style-type: none"> 1. Common Tern 2. Mediterranean Gull 3. Aquatic Warbler 4. Little Egret 5. Avocet 6. Black-tailed Godwit 7. Shelduck <p>and Article 4.2 Species: which includes at least 20,000 waterfowl</p>	<ol style="list-style-type: none"> 1. Intertidal mud-flats 2. Saltmarsh 3. Bogs 4. Marshes 5. Water fringed vegetation 6. Fens 7. Grazing marsh 8. Mires 	Habitat extent	<p>No decrease in intertidal mud-flats extent.</p> <p>No decrease in saltmarsh extent.</p> <p>No decrease in extent of water body habitats, in particular reedbeds.</p> <p>No loss of grazing marsh extent.</p> <p>No decrease in valley mire extent.</p>	<p>HTL at the north open coast units would not directly affect any habitats. Furthermore, the long term effect of HTL would be in preventing a breach and subsequent significantly greater impact on the various intertidal habitats within the Site.</p> <p>The Inner Sandbanks to Lower Hamworthy stretch of Poole Harbour are all identified as HTL, as are the stretch fronting the Holton Railway Line, South Haven Point, and Brownsea Quay. The intertidal habitats of Poole Harbour SSSI units 2, 3, 4, 5, 6, 7, 8, 10, 11, 12, and 14 fronting the northern harbour area are varied in type, and often are infrequently exposed, with roosting forming a dominant activity. However, with the implementation of HTL, the ability of the intertidal habitats to adapt in response to sea level rise would be curtailed (albeit in various sections the adaptation would be limited by steeply rising land anyway). Also HTL along the stretch (unit 31) fronting Holton Railway Line would prevent any adaptation to sea level rise, though there are issues of potential contamination with the former cordite works inland of this section. However, both mudflat and reedbed would be at risk. HTL at South Haven Point in itself would not result in direct impacts to the nearby units, further no current saltmarsh erosion is identified along the rear (western side) of Studland dunes (unit 54) to indicate that the current HTL at South Haven is resulting in effects on adjacent habitat. The small area fronting Brownsea Quay is limited in extent (part of unit 58) though some potential exists for intertidal habitat loss, with possible indirect habitat loss from refracted wave energy in the immediate adjacent area depending on the type of structure used. Overall, therefore a loss of predominantly intertidal and transitional habitats would arise. The following areas of habitat types would be lost for each epoch:</p> <ul style="list-style-type: none"> • Saltmarsh zone – 3ha (by 2025), 6ha by 2055, and 20ha by 2105; • Intertidal mudflat – 29ha by 2105; • Upper transitional tidal habitat – 2ha (by 2025), 10ha (by 2055), and 21ha by 2105. <p>These quantities are based on the intertidal losses specific to low count sectors NC2, NC3, NE1, NE2, NE3, SE1, and WC3 where HTL would occur for one or all epochs, with areas extracted from Table 5.18 in the HRA report. However, other adjacent habitats that may also support the primary qualifying features would also be lost as a result, and these are identified by estimating the totals of the above sectors from Table 5.14. In addition, Figures 5.8, 5.9, and 5.10 of the HRA Report show the changing areas of intertidal habitat and it can be clearly seen where these losses occur. The total supporting habitat that could therefore be affected is:</p> <ul style="list-style-type: none"> • Intertidal mudflat – 5ha (by 2025), 34ha by 2055, and 310ha (by 2105); • Upper transitional tidal habitat – 3ha (by 2025), 15ha (by 2055), and 4ha by 2105. <p>The intertidal mudflat and upper transitional tidal habitat areas include the saltmarsh zone.</p> <p>MR is proposed for Ham Common in the 1st and 2nd epochs, for Lytchett Bay in the 3rd epoch (subject to monitoring of the effect of sea level rise), for the Wareham frontage for all epochs. Managed realignment at Ham Common (Poole Harbour SSSI unit 14) and subsequent NAI would move the defence line out of the Site, and thus result in potential increase in intertidal, though this would be subject to the effects of sea level rise. The combined NAI and MR policy in the 3rd epoch in Lytchett Bay (units 16, 17, 21, and 28) could result in the availability of an adaptational response to sea level rise, and creating additional intertidal habitats. The MR at Wareham Meadows would be dependent on many factors, however, grassland units would be lost (i.e. Poole Harbour SSSI unit 31, 32 and 33, and Wareham Meadows unit 23) replaced by saltmarsh, whilst other units of</p>	<p>Moderate confidence in the quantification and location of habitat loss.</p> <p>Moderate confidence that without HTL at Sandbanks on the open coast section, that breaching could potentially have even greater adverse effects on the SPA supporting habitats.</p>	<p>Possible measures include measures to encourage/enhance deposition of sediment and within the section from the western side of Sandbanks to Luscombe Valley, and thus encourage saltmarsh development and other intertidal habitat development.</p> <p>Following closure of oil wells in the future (e.g. 2nd or 3rd epoch), managed realignment could then be implemented at any HTL locations.</p>	<p>The success or likelihood of the mitigation measures being implemented would be subject to a wide range of factors. Whilst in theory they could provide some minimisation of impact, they are unlikely to prevent a significant adverse effect occurring. Rather they may reduce the amount of compensatory habitat that may be required.</p>	NO

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				<p>reedbed would also be lost to saltmarsh. Across Poole Harbour as a whole there would be at least the same if not more transitional habitat suitable for colonisation by reedbed, and the MR activities themselves are expected to result in between 415ha and 583ha of intertidal mudflat and saltmarsh habitat. However, this habitat creation will also result in the loss of supporting grazing marsh habitat, with 353ha (by 2025), 368ha (by 2055), and 383ha (by 2105) lost through MR. These total areas include the supporting or qualifying habitats of the Dorset Heathlands SPA and Dorset Heaths SAC, and in summary will be reduced commensurately..</p> <p>NAI is preferred for the Brownsea Lagoon, Arne Peninsula, the Furzey, Round, Long and Green Islands, up to Studland Peninsula. Where sea level rise occurs, this policy would allow intertidal habitats to adapt by moving landward (units 37, 38, 40, 42, 43, 46, 47, 50, 52, 53, and 54). The area of intertidal habitats affected (based on low tide count sectors SE1, SE2, SC1, SC2, SC3, SC4, SC5, SC6, SC7, SC8, NC1, and W1 as presented in Table 5.18 of the HRA Report) are, when combined, positive for all habitats (21ha, 101ha, and 337ha for intertidal mudflats by years 2025, 2055, and 2105) for all epochs, with the exception of the 3rd Epoch on the upper transitional habitats.</p> <p>On the southern (Studland Spit) open coast, the preferred policy is MR from South Haven Pt to Redend, with HTL at the Training Bank, and MR at Redend Point to The Warren for the 1st epoch and NAI in later epochs, with NAI for The Warren to Handfast Point. Overall, these sections are outside the Site, and direct habitat loss would not occur, and there is no hydrodynamic link (specifically) that indicates a potential pathway for indirect impacts of habitat loss.</p> <p>Due to the spread and extent of the SPA it is necessary to look at all the policies for the units with an influence on Poole Harbour as a whole. Whilst it is evident that some policies for sections would enable adaptation to occur (particularly where MR and NAI are identified), there is a limit to the current knowledge as to the effects of sea level rise and the response of intertidal habitats within Poole Harbour. Furthermore, where response is likely to be negative and/or where the available area for adaptation provided by the NAI and MR policies may be limited, an overall negative loss of habitat would occur. This would be further exacerbated by the loss of adaptation area resulting from HTL within the northern areas of the Harbour, even though the use of these areas by the qualifying species of the SPA may be limited, however, in relation to the Ramsar site species they may potentially be of moderate importance. Overall therefore, due to the limited quantification available at this strategic level (both in terms of sea level rise effects in-combination with possible scheme/section and combined response overall) it is likely that habitat will be lost and that habitat supports species for which the SPA (and the Ramsar) site qualify.</p> <p>In terms of quantities of spring tide intertidal habitat , the SMP preferred policy scenario is predicted to result in an overall decrease in intertidal habitat of around 5ha, 34ha, and 310ha by years 2025, 2055, and 2105 respectively (see relevant sectors in Table 5.14) as a result of HTL policies at certain units.</p> <p>In terms of quantities of extreme tide intertidal and transitional habitat, the SMP preferred policy scenario is predicted to result in an overall decrease in transitional habitats of around 3ha, 15ha, and 4ha by years 2025, 2055, and 2105 respectively (see Table 5.14). These losses will be offset by gains from the unconstrained migration of habitats in other sectors of the SPA including the expected Managed Realignments.</p>				

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	<ol style="list-style-type: none"> 1. Saltmarsh 2. Bogs 3. Marshes 4. Water fringed vegetation 5. Fens 6. Grazing marsh 7. Mires 	Vegetation composition	Component vegetation types should be present.	Sea level rise could significantly reduce the intertidal vegetation composition, certainly within specific areas of the Harbour as well as overall. On the whole, the preferred policies do not exacerbate this situation, as the HTL policies that in-combination with sea level rise could cause coastal squeeze and loss of habitat occur in areas within limited compositions, though with the exception of the eastern end of the Harbour, as well as MR at Wareham which could result in loss of large areas of reedbed. Overall, it is predicted that there would be a larger overall area of differing habitats across the SPA, and based on the macro-scale of habitat change, no significant alteration to vegetation composition will occur, as the timescale of the scheme is sufficient that natural cycles and migration of communities would occur.	Moderate confidence as the nature of changes resulting from sea level rise are not modelled down to the local scale at this strategic level.	None identified.	A significant adverse effect is not expected.	YES
	<ol style="list-style-type: none"> 1. Saltmarsh 2. Bogs 3. Marshes 4. Water fringed vegetation 5. Fens 6. Inland water bodies (standing water, running water) 7. Grazing marsh 8. Mires 	Structure	No obvious modification to structural features. No net changes in morphology.	<p><u>Feeding Birds</u></p> <p>In terms of the loss of feeding habitat for Little Egret, Avocet, Black-tailed Godwit, and Shelduck, the figures provided in Table G1 have been used to identify the effect of the constraints to habitat migration caused by SMP policy for sectors NC2, NC3, NE1, and NE3 on feeding waders and waterfowl.</p> <p>A possible increase in the population of feeding Little Egret by 0.1% to 1% of the SPA population between 2025 and 2105, or 0.5% of the national population by 2105.</p> <p>A possible increase in the available feeding area for Avocet could result in an increase in the SPA population of between 0.3% and 2% between 2025 and 2105, or 0.7% of the national population by 2105.</p> <p>A possible increase in the available feeding area for Black-tailed Godwit could result in an increase in the SPA population of between 7% and 41% between 2025 and 2105, or 2% of the international population by 2105.</p> <p>A possible increase in the available feeding area for Shelduck (+50, +204, +277), which could result in an increase in the SPA population of between 2% and 13% between 2025 and 2105.</p> <p>Overall minor to moderately positive effects on feeding bird populations would occur as a result of the SMP policy.</p> <p><u>Roosting Birds</u></p> <p>In terms of roosting birds, the effects of the preferred SMP policy, specifically units where HTL is proposed that front roosting areas, are based on the detailed assessment in Table H2. The table identifies the effect of the constraints to habitat migration caused by SMP policy for sectors NC2, NC3, NE1, and NE3 on roost sites.</p> <p>The SMP policy will maintain roosting habitat at roost sites 77, 88, 89, 90, 91, and 92, which support up to 196 Oystercatcher, up to 3500 Dunlin (0.7% of the national population), up to 12 Redshank, and up to 91 Turnstone, which is considered to be a negligible positive significance for the SPA interests.</p> <p>However, the SMP policies could result in the loss of a number of roosts, or at the very least significant deterioration of the roost habitat due to coastal squeeze. The roost sites that could be lost are sites 76, 78, 79, 80, 81, 82, 83, 87, and 93. This could result in the loss of roost (in the worst case) for 98 Avocet (21% of the SPA population or 10% of the national population by 2105), however, given the fact that overall there will be a larger area of supporting habitat (or limited alteration in upper transitional intertidal habitat even without mitigation or MR, it is expected that these birds would roost elsewhere within the Harbour.</p> <p><u>Breeding Birds</u></p> <p>In terms of roosting birds, the effect of impacts no roosts as a result of the SMP policies are based on the detailed assessment in Table I1 to identify the effect of the constraints to habitat migration caused by HTL policy at units within the PDZ for sectors NC2, NC3, NE1, and NE3 on breeding birds.</p>	Moderate confidence as the nature of changes resulting from sea level rise are not modelled down to the local scale at this strategic level.	None identified.	A significant adverse effect is expected.	NO

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				Poole Park (NE3) would result in the loss of 1 breeding pair of Oystercatcher due to sea level rise and constraints to habitat migration.				
	Inland water bodies (standing water, running water)	Habitat function	Continuity of the river is not disturbed by anthropogenic activities. Undisturbed migration of aquatic organisms and sediment transport.	The two main (and other watercourses) rivers within the system are not expected to be disturbed either through obstruction or other hindrance as a result of the preferred policies. However, in the unlikely event that MR at Wareham results in some form of new or extended structure within the rivers to prevent tidal inundation or flooding, this would represent an obstruction to the migration of aquatic species and sediment, which though unlikely to impact on the SPA's qualifying species.	High confidence that obstruction would not occur, due to the requirement to ensure that no flood risk occurs to areas adjacent to the rivers.	Ensure that any structures to prevent tidal flooding from the river provide appropriate and successful design features to ensure no obstruction to the migration of aquatic species, and minimal obstruction to the movement of sediment.	Appropriate and commonplace mitigation measures such as that recommended are successful in preventing obstruction to the movement of migratory species, consequently, no adverse affect would remain.	YES

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Poole Harbour Ramsar Site								
Ramsar Criteria: 1. Bar-built estuary; 2. Two species of nationally rare plant and one nationally rare alga; 3. Natural habitat types of community interest - Mediterranean and thermo Atlantic halophilous scrubs, in this case dominated by <i>Suaeda vera</i> , as well as calcareous fens with <i>Cladium mariscus</i> ; waterfowl including Common tern and Mediterranean gull and Avocet. 5. Waterfowl; 6. Common Shelduck, Black-tailed Godwit, Avocet	1. Tidal flats 2. Salt marshes 3. Freshwater marshes / pools: permanent 4. Peatlands (including peat bogs swamps, fens) 5. Dry and wet heathland 6. Grassland 7. Meadows 8. Wet woodland 9. Mediterranean and thermo Atlantic halophilous scrubs, in this case dominated by <i>Suaeda vera</i>	Habitat extent	No decrease in tidal flat extent. No decrease in saltmarsh extent. No decrease in freshwater marsh / pool extent. No decrease in peatland extent. No decrease in dry and wet heathland extent. No decrease grassland extent. No decrease in meadow extent. No decrease in wet woodland extent. No decrease in scrub extent,	<p>In terms of quantities of saltmarsh zone habitat, the SMP preferred policy scenario is predicted to result in the loss of 91ha of habitat being lost as a result of HTL constraints by 2105. This is around 9% of this intertidal zone habitat, or supporting habitat.</p> <p>In terms of quantities of saltmarsh habitat, the SMP preferred policy scenario is predicted to result in an overall increase in saltmarsh habitat within the Ramsar Site of 95ha, 101ha, and 15ha by years 2025, 2055, and 2105 respectively. This would be a positive effect on supporting habitat. In a number of units the area of saltmarsh has decreased as a result of constraints resulting from the SMP policies. By 2025, 1ha (0.3%) of saltmarsh habitat would be lost in Hamworthy (NC2). By 2055, 4ha (1%) of saltmarsh habitat would be lost in Hamworthy (NC2), and by 2105, 19ha (4%) would be lost from Hamworthy (NC2), Holes Bay (NC3), and Poole Park (NE3). These losses are offset by gains from the unconstrained migration of saltmarsh and saltmarsh habitats and MR creating saltmarsh habitats in other sectors in the Ramsar, and as such no negative effect would be expected on the Ramsar criterion.</p> <p>In terms of quantities of spring tide intertidal habitat area, the SMP preferred policy scenario is predicted to result in an overall increase in intertidal habitat (excluding saltmarsh) of around 469ha, 812ha, and 483ha by years 2025, 2055, and 2105 respectively. This would be a positive effect on supporting intertidal habitats across the wider SPA. However, on a sector by sector basis, by 2025, 5ha (less than 0.01%) of intertidal habitat would be lost in Hamworthy (NC2) and Poole Park (NE3). By 2055, 34ha (2%) of intertidal habitat would be lost in the same two sectors, and by 2105, 306ha (14%) would be lost from Hamworthy (NC2 and Poole Park (NE3). These losses are offset by gains from the unconstrained migration of intertidal habitats and MR creating intertidal habitats in other sectors of the Ramsar, and as such no negative effect would be expected on the Ramsar criterion.</p> <p>In terms of quantities of extreme tide intertidal and transitional habitat areas, the SMP preferred policy scenario is predicted to result in an overall increase in transitional habitats of around 58ha, 42ha, and 652ha by years 2025, 2055, and 2105 respectively. This would be a positive effect on supporting intertidal and transitional habitats.</p> <p>The MR of the defences in the inner harbour could result in the inundation by tidal waters into The Moors SSSI, particularly by the 3rd Epoch. By this period it is expected that the spring tide and highest tides would cover or disrupt the hydrology of the <i>Cladium</i> fen in Unit 8. A significant deterioration to the Ramsar criterion in Epoch 3. Consequently, it is recommended that as a preventative measure the fen should lie within any realigned defence line.</p> <p>A possible increase in the available feeding area for Avocet could result in an increase in the SPA population of between 0.3% and 2% between 2025 and 2105, or 0.7% of the national population by 2105. However, the SMP policies could result in the loss of a roost site for 98 Avocet (21% of the SPA population or 10% of the national population by 2105). However, given the variety and extent of other naturally evolving stretches of intertidal habitat within the Harbour, it is expected that the populations will feed in alternative locations with no deleterious affect on population. Consequently, no noticeable change to the Ramsar criterion is expected.</p> <p>A possible increase in the available feeding area for Shelduck (+50, +204, +277), which could result in an increase in the SPA population of between 2% and 13% between 2025 and 2105. A minor positive improvement to the Ramsar criterion would arise from the increase in intertidal habitats for feeding.</p> <p>A possible increase in the available feeding area for Black-tailed Godwit could result in an increase in the SPA population of between 7% and 41% between 2025 and 2105, or 2% of the international population by 2105. A moderate positive improvement to the Ramsar criterion would therefore occur between the 1st and the 3rd Epoch.</p>	Moderate confidence in the quantification and location of habitat loss.	Possible measures to encourage/enhance deposition of sediment and within the section from the western side of Sandbanks to Luscombe Valley, and thus encourage saltmarsh development and other intertidal habitat development. Following closure of oil wells in the future (e.g. 2nd or 3rd epoch), managed realignment could then be implemented at any HTL locations. Managed Realignment design should ensure that the <i>Cladium</i> fen lies inland of realigned defences in order to maintain the habitat.	The criterion score for the Ramsar Site will not be adversely affected by the long term policy (incorporating the managed realignment actions).	YES

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Dorset Heathlands SPA								
Internationally important Article 4.1 Species: 1. Dartford Warbler 2. Nightjar 3. Woodlark 4. Hen Harrier	1. North Atlantic wet heaths 2. European dry heaths 3. Dry grassland 4. Coastal sand dunes 5. Sand beaches 6. Machair 7. Coastal wetlands 8. Bogs 9. Marshes 10. Water fringed vegetation 11. Fens 12. Acid Mires 13. Broad-leaved deciduous woodland 14. Coniferous woodland	Habitat extent	No decrease in wet heath extent. No decrease in dry heath extent. No decrease in grassland extent. No decrease in dune or Machair extent. No net loss of sand beaches. No decrease in coastal wetland extent. No decrease in extent of water body habitats. No decrease in acid valley mire extent.	<p>Figures 5.18, 5.19, and 5.20 present the Site boundary and the maximum extent of sea level rise and intertidal habitat area (the worst case) up to the end of Epoch 3.</p> <p>HTL at the north open coast units would not directly affect any SPA habitats. The Inner Sandbanks to Lower Hamworthy stretch of Poole Harbour are all identified as HTL, as are the stretch fronting the Holton Railway Line, Brownsea Quay, and South Haven Point. The SPA generally lies immediately adjacent to or further from these HTL sections, and as such direct habitat loss is not expected, being as these areas of the Site would be protected from sea level rise and subsequent habitat loss.</p> <p>MR is proposed for Hamworthy Common in the 1st and 2nd epochs, for Lytchett Bay in the 3rd epoch (subject to monitoring of the effect of sea level rise), and for the Wareham frontage for all epochs. Managed realignment at Ham Common and subsequent NAI would result in the defence line moving into the site, resulting in the loss of a maximum of 1.2ha of heathland habitat (Ham Common SSSI unit 6) by 2105 as a result of managed realignment (see Table 5.20 in the HRA report). Areas of heathland habitat would be lost as a result of NAI in the 3rd epoch in Lytchett Bay (units 18, 19, and 20) could result in the loss of up to 2.9ha of heathland habitat by 2105.</p> <p>The MR at Keyworth and The Moors has the potential in the 3rd epoch to result in the loss of potential <i>Cladium</i> fen within The Moors SSSI Unit 8, as well as heathland in Holton and Sandford Heaths SSSI (units 6, 9, and 11) and The Moors SSSI (units 5, 6, and 8) affecting an overall 13.5ha of lowland heath during the 3rd Epoch (see Table 5.20 in the HRA report).</p> <p>NAI is preferred for the Arne Peninsula, the Furzey, Round, Long and Green Islands, up to Studland Peninsula. Where sea level rise occurs, this policy would allow intertidal habitats to adapt by moving landward and this could result in limited habitat loss of heathland in Arne SSSI units 1, 2, 3, 4, 5, 6, 7, 8, 10, and 11, and Rempstone Heaths SSSI units 7, 10, 12, 13, 14, 15, and 16, and Studland and Godlingston Heaths SSSI unit 16. However, the extent to which sea level rise will occur is only simplistically quantified at this strategic level, with a total of 78ha of heathland being encroached by migrating intertidal habitats by 2105 (see Table 5.20 in the HRA report). However, the heathland and other associated habitats are likely to be constrained in adapting to this by infrastructure or land uses inland.</p> <p>NAI is the preferred policy for western Brownsea Island and Lagoon, and it is likely that this could result in the direct loss of (unit 55), though, there is a degree of adaptation capacity prior to reaching the site. Erosion is predicted to result in the loss of 9.2ha of broadleaved woodland, 1.5ha of bogs, marshes, fens, and water-fringed vegetation, and 2.7ha of saltmarsh and dunes by 2105 (see Table 5.20 in the HRA report).</p> <p>NAI is the preferred policy for The Warren to Handfast Point, which does not lie within the SPA, and no direct habitat loss is expected, and there is no hydrodynamic link (specifically) that indicates a potential pathway for habitat loss to occur indirectly.</p> <p>Due to the spread and extent of the SPA it is necessary to look at all the policies for the units with an influence on Dorset Heathlands as a whole. Predominantly, hold the line policies avoid direct habitat loss (and also for the most part indirect habitat loss). However, with sea level rise, NAI will result in the natural adaptation of intertidal habitats which will result in the indirect loss of SPA supporting habitats such as heathland, but the lost SPA supporting habitats are constrained from moving and adapting to this. Furthermore, MR policies will actively encroach into and result in the loss of supporting habitat. In all, around 1ha of SPA supporting habitats will be lost by 2025, 3ha by 2055, and 10.7ha (or 0.3% of the SAC supporting habitat) by 2105. Many of the habitats that would be lost are likely to be of importance for the qualifying species whether it is as general foraging habitat or nesting habitat, consequently, an adverse impact would arise becoming significant in the 3rd Epoch.</p>	<p>Moderate confidence in the quantification and location of habitat loss.</p> <p>High confidence that unless otherwise stated, HTL policies occur outwith the SPA site and no direct habitat loss would occur.</p>	<p>Appropriate realignment and realignment works and materials should be used to minimise the significance of the impact of MR on any supporting habitats within the Site.</p> <p>Managed Realignment design should ensure that the <i>Cladium</i> fen lies inland of realigned defences in order to maintain the habitat.</p>	<p>There is insufficient detail at this strategic level to determine whether mitigation would be successful and to what scale. Consequently, an adverse affect remains.</p>	NO

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	<ol style="list-style-type: none"> 1. North Atlantic wet heaths 2. European dry heaths 3. Dry grassland 4. Coastal sand dunes 5. Sand beaches 6. Machair 7. Coastal wetlands 8. Bogs 9. Marshes 10. Water fringed vegetation 11. Fens 12. Acid Mires 13. Broad-leaved deciduous woodland 14. Coniferous woodland 	Vegetation composition	Component vegetation types should be present.	MR and NAI policies resulting in habitat loss would result in localised reductions in vegetation composition, however, the scale of reduction though not quantified is negligible in relation to the extent of habitat lost. Due to the lack of quantified and spatial data including the sea level rise and subsequent adaptation effects of intertidal habitats being unknown, locational data cannot be determined. Consequently, it cannot be shown that no adverse effect would arise in relation to vegetation community, as potentially sensitive and significant communities could be affected.	Low confidence as the nature of changes resulting from sea level rise are not determined in quantity and detail at this strategic level. However, there is also a low confidence that the policies will result in an in-combination effect with sea level rise, though they could potentially be greater in Ham Common, though the units there are generally in unfavourable condition.	None identified at this stage.	Potential adverse affect on vegetation communities that could result in a significant adverse effect on the qualifying species either as indirect food resource or nesting habitat.	NO
	<ol style="list-style-type: none"> 1. North Atlantic wet heaths 2. European dry heaths 3. Dry grassland 4. Coastal sand dunes 5. Sand beaches 6. Machair 7. Coastal wetlands 8. Bogs 9. Marshes 10. Water fringed vegetation 11. Fens 12. Acid Mires 13. Broad-leaved deciduous woodland 14. Coniferous woodland 15. Inland water bodies (standing water, running water) 	Structure	No obvious modification to structural features. No net changes in morphology.	The losses of habitat from intertidal habitat encroachment due to sea level rise is unlikely to affect the primary bird species, as the losses would occur on the fringes adjacent to open water, which are less likely to be suited for nesting habitat. The loss of feeding area could result in a decline in populations but again given the location of the habitat loss this is expected to be small in scale. Overall, a minor negative effect is anticipated on the four qualifying bird species by 2105.	Low confidence as for the reasons identified above.	None identified at this stage, however, reactive or proactive works could be implemented either following a detailed strategy stage that models where changes or following ongoing monitoring of sea level rise effects. Small scale hydrological works could be implemented in local areas to prevent adverse hydrological changes within terrestrial areas of the Site.	There is insufficient detail at this strategic level to determine whether mitigation would be successful and to what scale. Consequently, an adverse affect remains.	NO
	Inland water bodies (standing water, running water)	Habitat function	Continuity of the river is not disturbed by anthropogenic activities. Undisturbed migration of aquatic organisms and sediment transport.	No direct disturbance or obstruction to rivers is expected to occur within the area of the SPA or changes to watercourses that would indirectly influence the SPA as a result of the preferred policies.	High confidence as there are no sections that link the main rivers with the Site's units.	None required.	No adverse effect expected.	YES

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Dorset Heaths SAC								
1. Northern Atlantic wet heaths with <i>Erica tetralix</i> 2. European dry heaths 3. Depressions on peat substrates of the <i>Rhynchosporion</i> 4. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinia caeruleae</i>) 5. Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> 6. Alkaline fens 7. Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains	NA	Habitat extent	The total extent of wet heath is maintained. The total extent of dry heath is maintained. No decrease in extent of depressions on peat substrates. No decrease in <i>Molinia</i> meadow extent. No decrease in extent of Calcareous fens. No decrease in extent of Alkaline fens. No decrease in <i>Molinia</i> meadow extent.	<p>Figures 5.15, 5.16, and 5.17 present the Site boundary and the maximum extent of sea level rise and intertidal habitat area (the worst case) up to the end of Epoch 3.</p> <p>HTL at the north open coast units would not directly affect any SAC habitats.</p> <p>The Inner Sandbanks to Lower Hamworthy stretch of Poole Harbour are all identified as HTL, as are the stretch fronting the Holton Railway Line, Brownsea Quay, and South Haven Point. The SAC is located immediately adjacent to or further from these HTL sections, and as such direct habitat loss is not expected.</p> <p>Managed realignment at Ham Common and subsequent NAI would result in the defence line moving into the site, resulting in the loss of a maximum of 3.3ha of heathland habitat (Ham Common SSSI unit 6) by 2105 as a result of managed realignment.</p> <p>NAI policies with some MR in later Epochs within Lytchett Bay could (in the worst case though it is unlikely that interference would be necessary in the area of the Site boundary here) result in the loss of up to 2.4ha of heathland habitat (Poole Harbour SSSI units 18, 19, 20, and 21), as shown on Table 5.20 in the HRA report. In addition, 1.8ha of saltmarsh (Poole Harbour SSSI unit 17) could be lost as a result of sea level rise, but it is expected that given the large area of migration afforded by NAI within this Bay, that this habitat would migrate.</p> <p>MR at Keyworth and Wareham (Holton and Sandford Heaths SSSI (units 6 and 11), Morden Bog SSSI (unit 3), and Wareham Meadows SSSI (units 7 and 8) could potentially result in the direct loss of up to 6ha of heathland, bog, and possible <i>Cladium</i> fen habitats by 2105 (see Table 5.20 in the HRA report).</p> <p>NAI is preferred for the Arne Peninsula, the Furzey, Round, Long and Green Islands, up to Studland Peninsula. Where sea level rise occurs, this policy would allow intertidal habitats to adapt by moving landward and this could result in limited habitat loss of heathland in Arne SSSI unit 1, and Poole Harbour SSSI unit 47. However, the extent to which sea level rise will occur is only simplistically quantified at this strategic level, with the following area of heathland being encroached by migrating intertidal habitats: 1ha by 2025, 2ha by 2055 and 6.8ha by 2105 (see Table 5.20 in the HRA report).</p> <p>NAI is the preferred policy for western Brownsea Island and Brownsea Lagoon, and it is likely that this could result in the direct loss of (Poole Harbour SSSI unit 55), though, there is a degree of adaptation capacity prior to reaching the site. Erosion is predicted to result in the loss of 1.2ha of broadleaved woodland and lowland habitat by 2105, and possible loss (or migration) of up to 4.9ha of saltmarsh and dunes (Poole Harbour SSSI unit 58), see Table 5.20 in the HRA report.</p> <p>Due to the spread and extent of the SAC it is necessary to look at all the policies for the units with an influence on Poole Harbour as a whole, as well as in-combination with the effects and reactions of habitats within the other Natura 2000 sites in the Harbour. Predominantly, hold the line policies avoid direct habitat loss (and also for the most part indirect habitat loss). However, with sea level rise, NAI will result in the natural adaptation of intertidal habitats which will result in the indirect loss of SAC primary habitats such as heathland, oak woodland, and depressions on peat substrate. Furthermore, these affected habitats are constrained from moving and adapting to these sea level driven changes. Furthermore, MR policies will actively encroach into and result in the loss of primary habitat (particularly at Wareham). Many of the habitats that would be lost are of significance even if for the most part, the scale of the habitat losses are not significant (a maximum of 9.3ha by 2105) in relation to the total area of the SAC. Consequently, an adverse impact would arise becoming significant in the 3rd Epoch.</p>	<p>Low confidence in the quantification of likely effects, particularly where these occur in combination with sea level rise and coastal squeeze (or the adaptation response of intertidal habitats and subsequent encroachment into currently terrestrial habitat).</p> <p>High confidence that unless otherwise stated, HTL policies occur outwith the SAC site and no direct habitat loss would occur.</p>	<p>Appropriate realignment and realignment works and materials should be used to minimise the significance of the impact of MR on any supporting habitats within the Site.</p> <p>Managed Realignment design should ensure that the <i>Cladium</i> fen lies inland of realigned defences in order to maintain the habitat.</p>	<p>There is insufficient detail at this strategic level to determine whether mitigation would be successful and to what scale. Consequently, an adverse affect remains.</p>	NO

Primary Qualifying Feature	Supporting Habitat/Species	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude no adverse affect on integrity?
<ol style="list-style-type: none"> 1. Northern Atlantic wet heaths with <i>Erica tetralix</i> 2. European dry heaths 3. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) 4. Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> 5. Alkaline fens 6. Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains 	NA	Vegetation composition	Component vegetation types and notable species of the wet heath and dry heath is maintained.	MR and NAI policies resulting in habitat loss would result in localised reductions in vegetation composition, however, the scale of reduction though not quantified is negligible in relation to the extent of habitat lost. Due to the lack of quantified and spatial data including the sea level rise and subsequent adaptation effects of intertidal habitats being unknown, however, locational data cannot be determined. Consequently, it cannot be shown that no adverse effect would arise in relation to vegetation community, as potentially sensitive and significant communities could be affected.	Low confidence as the nature of changes resulting from sea level rise are not determined in quantity and detail at this strategic level. However, there is also a low confidence that the policies will result in an in-combination effect with sea level rise, though they could potentially be greater in Wareham Meadows.	None identified at this stage.	Potential adverse affect on vegetation communities that could result in a significant adverse effect on primary habitats.	NO
<ol style="list-style-type: none"> 1. Northern Atlantic wet heaths with <i>Erica tetralix</i> 2. European dry heaths 3. Depressions on peat substrates of the <i>Rhynchosporion</i> 4. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) 5. Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> 6. Alkaline fens 7. Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains 	NA	Structure	No obvious modification to structural features.	NAI policies to a greater extent than MR policies could result in alterations to hydrological structure within the Site, particularly those along the southern Harbour area or upper estuary area. Sea level rise effects are not quantified at this stage, and the in-combination effects of all the PDZ policies on overall habitat adaptation cannot therefore be quantified or spatially identified, consequently, localised changes could occur that would result in changes to the habitat and communities. These affects are expected to be localised. Overall however, it cannot be shown that no adverse effect would arise on primary qualifying habitats.	Low confidence as for the reasons identified above.	None identified at this stage, however, reactive or proactive works could be implemented either following a detailed strategy stage that models where changes or following ongoing monitoring of sea level rise effects. Small scale hydrological works could be implemented in local areas to prevent adverse hydrological changes within terrestrial areas of the Site.	There is insufficient detail at this strategic level to determine whether mitigation would be successful and to what scale. Consequently, an adverse affect remains.	NO

Primary Qualifying Feature	Supporting Habitat/Species	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude no adverse affect on integrity?
Dorset Heaths (Purbeck & Wareham) & Studland Dunes SAC								
1. Embryonic shifting dunes 2. Shifting dunes along the shoreline with Ammophila arenaria ('white dunes') 3. Atlantic decalcified fixed dunes (Calluno-Ulicetea) 4. Humid slack dunes 5. Oligotrophic waters: 6. Little Sea 7. Northern Atlantic wet heaths with Erica tetralix 8. European dry heaths 9. Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix 10. Alkaline fens 11. Calcareous fens with Cladium mariscus and species of the Caricion davallianae 12. Depressions on peat substrates of the Rhynchosporion 13. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 14. Old acidophilous oak woods with Quercus robur on sandy plains 15. Bog woodland	NA	Habitat extent	No decrease in dune extent. No decrease in slack dune extent. No loss of standing water extent. The total extent Northern Atlantic wet heaths is maintained. The total extent of dry heaths is maintained. The total extent of wet heaths is maintained. No decrease in extent of Alkaline fens. No decrease in extent of Calcareous fens. No decrease in extent of depressions on peat substrates. No decrease in woodland extent.	<p>Figures 5.21 and 5.22 present the Site boundary and the maximum extent of sea level rise and intertidal habitat area (the worst case) up to the end of Epoch 3.</p> <p>HTL at the north open coast units would not directly affect any SAC habitats.</p> <p>The Inner Sandbanks to Lower Hamworthy stretch of Poole Harbour are all identified as HTL, as are the stretch fronting the Holton Railway Line and Brownsea Quay. The SAC is not located immediately adjacent to these HTL sections, and as such direct habitat loss is not expected.</p> <p>HTL leading to NAI in Epochs 2 and 3 is identified for South Haven Point and this is located along the boundary of the SAC. A potential direct loss of habitat could arise from the holding the line, which could affect 1.5ha of dunes within Studland and Godlingston Heaths SSSI unit 15 (see Table 5.20 in the HRA report). However, there would be noticeable pressure on the dunes in the first Epoch; therefore no adverse effect is anticipated.</p> <p>MR is proposed for Ham Common in the 1st and 2nd epochs, for Lytchett Bay in the 3rd epoch (subject to monitoring of the effect of sea level rise), and for the Wareham frontage for all epochs. The policies for these sections would not result in direct or indirect habitat loss within the SAC.</p> <p>On the southern (Studland Spit) open coast, the preferred policy is NAI from South Haven Point to Redend Point for all epochs. Studland and Godlingston Heaths SSSI units 10, 14, and 15 are expected to be effected as a result, with direct loss of sandy beach and dune habitat occurring, though with the HTL policy for the Training Bank, this is expected to retain the sandy beach habitat though with potential to cause indirect disturbance to or loss of habitat in unit 14, however, the northern end of unit 14 is recorded as accreting, and consequently, maintaining the Training Bank would not alter the existing processes, and no loss is anticipated. No recorded data is available; however, as the policy is NAI, any processes of erosion and loss of habitat are not impacts resulting from the SMP preferred policy as it is undertaking no actions.</p> <p>MR at The Moors has been covered in the Dorset Heaths SAC, though as shown in Table 5.20 in the HRA report, 8.5ha of European dry heath and Atlantic wet heath could be lost by 2105.</p> <p>NAI is preferred for the Arne Peninsula, the Furzey, Round, Long and Green Islands, up to Studland Peninsula. Where sea level rise occurs, this policy would allow intertidal habitats to adapt by moving landward and this could result in limited habitat loss of heathland and oak wood (Arne SSSI units 3, 4, 5, 6, 7, 8, and 10, and Rempstone Heaths SSSI units 6, 9, 10, 12, 13, 14, 15, 16, 28, and 52, and Studland and Godlingston Heaths SSSI units 5 and 16). However, the extent to which sea level rise will occur is only simplistically quantified at this strategic level, with the following area of heathland being encroached by migrating intertidal habitats: 7ha by 2025, 24ha by 2055 and 72ha by 2105 (see Table 5.20 in the HRA report). However, the heathland and other associated habitats are likely to be constrained in adapting to this by infrastructure or land uses inland.</p> <p>NAI is the preferred policy for western Brownsea Island and Brownsea Lagoon, as there is no SAC within 1km it is not expected that any localised disturbance would extend beyond this to indirectly influence SAC habitats. NAI is also the preferred policy for The Warren to Handfast Point, which does not lie within the SAC, and no direct or indirect habitat loss is expected.</p> <p>Due to the spread and extent of the SAC it is necessary to look at all the policies for the units with an influence on Poole Harbour as a whole, as well as in-combination with the effects and reactions of habitats within the other Natura 2000 sites in the Harbour. Hold the line policies (i.e. at South Haven) are avoiding direct habitat loss (and also for the most part indirect habitat loss). Therefore, no adverse effect is expected due to the NAI policies for areas adjacent to the Site.</p>	<p>Low confidence for the extent of disturbance for HTL at South Haven Point cannot be identified at this strategy level.</p> <p>Moderate confidence in the quantification of likely habitat loss.</p> <p>High confidence that unless otherwise stated, HTL policies occur outside the SAC site and no direct habitat loss would occur.</p>	<p>Any measures for HTL at South Haven Point must avoid expanding footprint impacts into the SAC.</p> <p>Appropriate realignment and realignment works and materials should be used to minimise the significance of the impact of MR on any supporting habitats within the Site.</p>	<p>Provided the HTL measures at South Haven Point can be implemented (and it is reasonable to indicate they can), no primary qualifying habitat would be affected.</p>	YES

Primary Qualifying Feature	Supporting Habitat/Species	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude no adverse affect on integrity?
1. Embryonic shifting dunes 2. Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') 3. Atlantic decalcified fixed dunes (<i>Calluno-Ulicetea</i>) 4. Humid slack dunes 5. Oligotrophic waters: 6. Little Sea 7. Northern Atlantic wet heaths with <i>Erica tetralix</i> 8. European dry heaths 9. Temperate Atlantic wet heaths with <i>Erica ciliaris</i> and <i>Erica tetralix</i> 10. Alkaline fens 11. Calcareous fens with <i>Cladium mariscus</i> and species of the <i>Caricion davallianae</i> 12. Depressions on peat substrates of the <i>Rhynchosporion</i> 13. <i>Molinia</i> meadows on calcareous, peaty or clayey-silt-laden soils (<i>Molinion caeruleae</i>) 14. Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains 15. Bog woodland	NA	Vegetation composition	Component vegetation types and notable species are maintained.	MR and NAI policies resulting in habitat loss would result in localised reductions in vegetation composition, however, the scale of reduction though not quantified is negligible in relation to the extent of habitat lost. Due to the lack of quantified and spatial data including the sea level rise and subsequent adaptation effects of intertidal habitats being unknown, however, locational data cannot be determined. Consequently, it cannot be shown that no adverse effect would arise in relation to vegetation community, as potentially sensitive and significant communities could be affected.	Low confidence as the nature of changes resulting from sea level rise are not determined in quantity and detail at this strategic level. However, there is also a low confidence that the policies will result in an in-combination effect with sea level rise, though they could potentially be greater in Arne.	None identified at this stage.	Potential adverse affect on vegetation communities that could result in a significant adverse effect on primary habitats.	NO

Primary Qualifying Feature	Supporting Habitat/Species	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude no adverse affect on integrity?
1. Embryonic shifting dunes 2. Shifting dunes along the shoreline with Ammophila arenaria ('white dunes') 3. Atlantic decalcified fixed dunes (Calluno-Ulicetea) 4. Humid slack dunes 5. Oligotrophic waters: 6. Little Sea 7. Northern Atlantic wet heaths with Erica tetralix 8. European dry heaths 9. Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix 10. Alkaline fens 11. Calcareous fens with Cladium mariscus and species of the Caricion davallianae 12. Depressions on peat substrates of the Rhynchosporion 13. Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae) 14. Old acidophilous oak woods with Quercus robur on sandy plains 15. Bog woodland	NA	Structure and morphology	No obvious modification to structural features. No decrease in inflow the standing water. No change in water quality and sediment load.	<p>NAI policies to a greater extent than MR policies could result in alterations to hydrological structure within the Site, particularly those around the Arne peninsula or Rempsone Heaths. Sea level rise effects are not quantified at this stage, and the in-combination effects of all the PDZ policies on overall habitat adaptation cannot therefore be quantified or spatially identified, consequently, localised changes could occur that would result in changes to the habitat and communities. These affects are expected to be localised.</p> <p>Even with NAI for Studland Dunes, the 3rd epoch results do not indicate that there will be any alteration to the hydrological regime within the Little Sea. Certainly there appears to be no indication of overtopping or breach, consequently, any influence would be groundwater based, as is currently the case. Therefore no adverse impact is expected for Little Sea.</p> <p>Overall however, it cannot be shown that no adverse effect would arise on primary qualifying habitats as a result of the lack of detailed data in relation to hydrological changes within the Arne and Rempstone Heaths, and western Studland Spit areas.</p>	Low confidence as for the reasons identified above.	None identified at this stage, however, reactive or proactive works could be implemented either following a detailed strategy stage that models where changes or following ongoing monitoring of sea level rise effects. Small scale hydrological works could be implemented in local areas to prevent adverse hydrological changes within terrestrial areas of the Site.	There is insufficient detail at this strategic level to determine whether mitigation would be successful and to what scale. Consequently, an adverse affect remains.	NO

Primary Qualifying Feature	Supporting Habitat/Species	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude no adverse affect on integrity?
Isle of Portland to Studland Cliffs SAC								
1. Vegetated sea cliffs of the Atlantic and Baltic coasts 2. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>) 3. Annual vegetation of drift lines	NA	Habitat extent	No decrease in vegetated sea cliff extent. The total extent of semi-natural grasslands and scrublands is maintained. No decrease in extent of annual vegetation drift line.	The preferred policy is NAI, which would result only in natural processes of erosion and succession. Consequently, the policies of the SMP would have no direct or indirect effect on the habitat or geological extents.	High confidence as no works are to be undertaken.	None required.	No impact.	YES
Vegetated sea cliffs of the Atlantic and Baltic coasts	NA	Vegetation communities	Component vegetation types and notable species are maintained.	As there is no intervention or works undertaken, there would be no alteration to vegetation communities other than through the natural processes of erosion and succession.	High confidence as no works are to be undertaken.	None required.	No impact.	YES
1. Vegetated sea cliffs of the Atlantic and Baltic coasts 2. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (<i>Festuco-Brometalia</i>)	NA	Structure	No obvious modification to structural or geological features.	As there is no intervention or works undertaken, there would be no alteration to habitat structure or geological features other than through the natural processes of erosion and succession.	High confidence as no works are to be undertaken.	None required.	No impact.	YES

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