

Appendix J – PDZ1 Central and Eastern Sections of Christchurch Bay Appropriate Assessment

Primary Qualifying Feature	Supporting Habitat	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude <u>no</u> adverse affect on integrity?
Solent and Southampton Water SPA								
Internationally important Article 4.1 Species including: 1. Terns 2. Mediterranean Gull and Article 4.2 Species: 3. Black-tailed Godwit 4. Dark-bellied Brent Goose, 5. Ringed Plover, 6. Teal and at least 20,000 waterfowl	1. Estuaries 2. Saline lagoons 3. Saline lagoons 4. Saltmarshes 5. Saline lagoons 6. Shingle beach 7. Coastal sand dunes 8. Sand beaches 9. Machair 10. Bogs 11. Marshes 12. Water fringed vegetation 13. Fens 14. Broad-leaved deciduous woodland 15. Humid grassland. 16. Mesophile grassland 17. Grazing marsh	Habitat extent	No decrease in extent of estuary feature. No decrease in extent of lagoon. No decrease in mud-flat extent. No decrease in saltmarsh extent. No decrease in extent of saline lagoons. No decrease in extent of shingle beach. No decrease in dune extent. No net loss of sand beaches. No decrease in Machair extent. No decrease in extent of water body habitats, in particular reedbeds.	HTL at Hurst Spit including Hurst Castle (unit 32) will result in the western Hurst Spit section of the shingle spit (unit 31) remaining in position. This will maintain the area of shingle beach (unit 31). However, in-combination with sea level rise and the hard defences to the east (North Solent SMP) will result in the loss of mudflat and saltmarsh habitat. However, in the event of doing nothing, the shingle beach (Hurst Spit) would roll back as a result of ongoing coastal processes and sea-level rise, also resulting in the loss of habitat. Though in the do nothing (NAI) scenario there would be a likelihood of a breach, which would result in significant erosion within the mudflats and saltmarsh in Unit 2, which would be of greater significance than undertaking the HTL policy. HTL of Hurst Spit would only result in an impact in-combination with sea level rise.	High degree of confidence that mudflat and saltmarsh will be lost as a result of the option in-combination with sea level rise but not alone. High degree of confidence that the amount of shingle beach habitat would remain the same.	Measures could include no intervention of the North Point spit to enable the spit to develop naturally as well as providing a source of material for recycling of the western spit.	Loss of mudflat and saltmarsh habitat will remain, in-combination with sea level rise.	NO
	1. Estuaries 2. Saline lagoons	Salinity and water quality	No change in physico-chemical characteristics and sediment budget. No change in water chemistry and quality.	The policy option for Hurst Spit is unlikely to alter the physical or chemical properties of water within the Site. The options are related to the seaward face of the Spit, but the rear is open to physical water processes from the east. No change would occur as the spit structure would be maintained, thereby retaining the hydrodynamic and coastal processes to tides and flows within the Site.	High confidence that there is no obstruction or noticeable change to water flows and physico-chemical properties.	None required.	No residual effect.	YES
	1. Estuaries 2. Saltmarshes 3. Coastal sand dunes 4. Sand beaches 5. Machair 6. Bogs 7. Marshes 8. Water-fringed vegetation 9. Fens 10. Broad-leaved deciduous woodland 11. Humid grassland. 12. Mesophile grassland 13. Grazing marsh	Habitat composition	No change in community composition and abundance. Component vegetation types should be present.	Coastal squeeze is currently identified as occurring in some areas of the site, and evidence of changes in saltmarsh composition is recorded. This will continue with sea level rise. Hurst Spit provides a barrier to significant disturbance to the softer substrates within the site, and maintaining the spit in a coherent nature would thus minimise potentially significant changes to the softer substrates. HTL at Hurst Castle could result in further coastal squeeze of mudflat or saltmarsh in-combination with the loss as a result of the policy of the SMP to the east. Potentially as a result of the in-combination impacts, changes to the composition of saltmarsh community, particularly the loss of upper saltmarsh communities due to the incursion by mid and lower saltmarsh communities as a result of sea-level rise (i.e. over the long term). The loss of higher feeding area of supporting habitat would reduce the amount of time available for primary qualifying species (as well as other species) for feeding, with potential long term adverse affect on the integrity of the Site in relation to supporting the populations of its qualifying features.	High confidence is placed on the assessment of change on composition as this process has already been recorded in the site.	Measures to increase the rate of deposition and thus maintain saltmarsh elevations could be incorporated, but their selection would be based on an overall strategy for the Site.	An adverse affect would remain as the intensity and success of the measure is not known at this stage.	NO

Primary Qualifying Feature	Supporting Habitat	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude no adverse affect on integrity?
	1. Saltmarshes 2. Bogs 3. Marshes 4. Water fringed vegetation 5. Fens 6. Broad-leaved deciduous woodland 7. Humid grassland. 8. Mesophile grassland 9. Grazing marsh	Structure	No obvious modification to structural features.	<p>As described above, however, changes in the area of higher elevation of supporting habitats in-combination with sea level rise, will result in less habitat available for roosting. The option proposed will maintain the shingle ridge (Hurst Spit) as a coherent structure, and one which would remain above tide levels, thus maintaining an area of roosting habitat. Furthermore, Hurst Castle will also remain available as a roosting area.</p> <p>Overall, no significant loss of roosting habitat is anticipated.</p>	Confidence is low due to the lack of data regarding the areas of roosting habitat that will be lost along or in-combination, and also as no bird count data is held for the site.	None required.	No adverse affect is expected.	YES
	Inland water bodies (standing water, running water)	Habitat function and structure	<p>Continuity of the river is not disturbed by anthropogenic activities.</p> <p>Undisturbed migration of aquatic organisms and sediment transport.</p> <p>No net changes in habitat morphology.</p>	The policy options would not result in any direct impacts on the Hurst River estuary, or estuary features. It is unlikely that any physical processes will be altered as a result of the options, as they are generally focussed on maintaining the same geomorphological processes as at present.	High confidence that there would be no significant changes to processes provided Hurst Spit is maintained.	None required.	No adverse affect is expected.	YES

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Solent Maritime SAC								
1. Estuaries 2. Sandbanks which are slightly covered by sea water all the time 3. Mudflats and sandflats not covered by seawater at low tide 4. Coastal lagoons 5. Annual vegetation of drift lines 6. Perennial vegetation of stony banks 7. <i>Salicornia</i> and other annuals colonising mud and sand 8. Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes') 9. <i>Spartina</i> swards 10. Atlantic salt meadows		Habitat extent	No change in extent of estuary feature. No decrease in sandbank extent. No decrease in mudflat and sandflat extent. No decrease in extent of coastal lagoons. No decrease in extent of annual vegetation drift line. No decrease in extent of perennial vegetation. No decrease in extent of <i>Salicornia</i> . No decrease in extent of shifting dunes along the shoreline. The total extent of <i>Spartina</i> swards is maintained. The total extent of Atlantic salt meadows is maintained.	HTL at Hurst Spit including Hurst Castle (unit 32) will result in the western Hurst Spit section of the shingle spit (unit 31) remaining in position. This will maintain the area of shingle beach (unit 31). However, in-combination with sea level rise and the hard defences to the east (North Solent SMP) will result in the loss of intertidal mudflat and saltmarsh habitat. However, in the event of doing nothing, the shingle beach (Hurst Spit) would roll back as a result of ongoing coastal processes and sea-level rise, also resulting in the loss of habitat. Though in the do nothing (NAI) scenario there would be a likelihood of a breach, which would result in significant erosion within the mudflats and saltmarsh in Unit 2, which would be of greater significance than undertaking the HTL policy. HTL of Hurst Spit would only result in the loss of habitat which is a qualifying feature of the SAC, in-combination with sea level rise.	High degree of confidence that mudflat and saltmarsh habitats will be lost as a result of the option in-combination with sea level rise, but not alone. Moderate degree of confidence that HTL along Hurst Spit would occur along or adjacent to the boundary of the Site, though this would be dependent on the actions undertaken.	Measures could include no intervention of the North Point spit to enable the spit to develop naturally as well as providing a source of material for recycling of the western spit.	Loss of mudflat and saltmarsh habitat will remain, in-combination with sea level rise.	NO
1. Estuaries 2. Shifting dunes along the shoreline with <i>Ammophila arenaria</i> ('white dunes')		Physical characteristics (salinity, water quality, and sediment budgets/transport)	No change in physico-chemical characteristics and sediment budget. No change in sediment transport for the shifting dunes along the shoreline.	The policy options would not result in any direct impacts on the Hurst River estuary, or estuary features. It is also unlikely that any physical processes will be altered as a result of the options, as they are generally focussed on maintaining the same geomorphological processes as at present.	High confidence that there would be no significant changes to processes provided Hurst Spit is maintained.	None required.	No adverse affect is expected.	YES

Primary Qualifying Feature	Supporting Habitat	Attribute	Target	Predicted Impacts	Confidence	Possible Mitigation Measures	Residual Effect	Conclude no adverse affect on integrity?
1. <i>Spartina</i> swards 2. Atlantic salt meadows		Habitat composition	Component vegetation types and notable species are maintained.	Coastal squeeze is currently identified as occurring in some areas of the Site, and evidence of changes in saltmarsh composition is recorded. This will continue with sea level rise. Hurst Spit provides a barrier to significant disturbance to the softer substrates within the site, and maintaining the spit in a coherent form would prevent potentially significant changes to the softer substrates behind the spit. The HTL policy could result in coastal squeeze in-combination with the loss as a result of the policy of the SMP to the east and sea level rise. These losses as well as rising sea levels will result in changes to the composition of saltmarsh community, particularly the loss of upper saltmarsh communities due to the incursion by mid and lower saltmarsh communities due to sea-level rise (i.e. over the long term). Consequently, it is anticipated that in the long term significant changes to saltmarsh community will occur, in-combination with the loss of habitat, and an adverse effect on integrity would arise.	High confidence is placed on the assessment of change on composition as this process has already been recorded in the site.	Measures to increase the rate of deposition and thus maintain saltmarsh elevations could be incorporated, but their selection would be based on an overall strategy for the Site.	An adverse affect would remain as the intensity and success of the measure is not known at this stage.	NO
1. <i>Spartina</i> swards 2. Atlantic salt meadows		Structure	No obvious modification to structural features.	As described above, however, changes in the area of higher elevation supporting habitats in-combination with sea level rise, will result in less suitable habitat for saltmarsh communities. In-combination with the direct loss of habitat, this will result in structural modification to the saltmarsh communities. Overall, an adverse effect on integrity would arise.	Low confidence on the significance of the impact, as it would occur in-combination with habitat loss and changes in saltmarsh community composition.	As above.	An adverse affect would remain as the intensity and success of the measure is not known at this stage.	NO