

WITHIN EACH SHEET, THERE IS A TABLE INDICATING:

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ xxA		HTL	HTL	HTL		

WITHIN THIS, THERE ARE THEN A NUMBER OF COLOURS USED TO INDICATE CERTAIN APPROPRIATE ASSESSMENT DETERMINATIONS. THESE ARE SHOWN BELOW

THIS POLICY HAS BEEN CHANGED SINCE THE LAST ITERATION OF THE APPROPRIATE ASSESSMENT REPORT.					IT HAS NOT BEEN ABLE TO CONCLUDE NO ADVERSE EFFECT ON INTEGRITY (NAEOI)	EFFECT ON INTERTIDAL HABITATS OR ASSOCIATED SPECIES
					NO ADVERSE EFFECT ON INTEGRITY (NAEOI) HAS BEEN CONCLUDED	EFFECT ON FRESHWATER / TERRESTRIAL HABITATS OR
					EITHER THE SITE IS NOT ADJACENT TO A NATURA 2000 SITE, OR THE POLICY IS NO ACTIVE INTERVENTION (NAI)	EFFECT ON INTERTIDAL HABITATS & FRESHWATER / TERRESTRIAL HABITATS OR ASSOCIATED SPECIES

TABS, AND CELLS WITHIN WORKSHEETS, COLOURED RED INDICATE THAT A CHANGE IN POLICY HAS BEEN MADE AS A RESULT OF CONSULTATION

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ A1		ATL	HTL	HTL	N/A - no sites affected	
PDZ A2		HTL	MR2	HTL	Loss of freshwater habitat as the coastal habitats move inland in epoch 2, but realignment is restricted due to HTL in epochs 1 and 3. Coastal squeeze cannot be ruled out during epochs 1 and 3, but intertidal habitats are likely to benefit overall during the lifetime of the SMP. Loss of coastal grasslands and agricultural areas during realignment may have adverse effects on avocet, redshank and dark-bellied Brent geese.	
PDZ A3a		HTL	MR2	NAI	Loss of freshwater habitat as the coastal habitats move inland in epoch 2, but realignment is restricted due to HTL and NAI in epochs 1 and 3 respectively. Coastal squeeze cannot be ruled out during epoch 1, but intertidal habitats are likely to benefit overall during the lifetime of the SMP. Loss of coastal grasslands and agricultural areas during realignment may have adverse effects on avocet, redshank and dark-bellied Brent geese.	
PDZ A3b		HTL	HTL	HTL	Loss of intertidal habitats through coastal squeeze. This has the potential to affect a number of coastal bird species visiting the site as there will be less intertidal area for feeding.	
PDZ A4a		MR1	MR1	MR1	Loss of freshwater areas as a result of MR1 policy. There will be benefits from increased area of intertidal habitat, however dark-bellied Brent goose will be adversely affected as the extent of freshwater grazing marsh will be reduced.	
PDZ A4b		NAI	NAI	NAI	Habitats left to natural processes.	
PDZ A5		HTL	HTL	HTL	Potential for loss of intertidal habitats through coastal squeeze; however, due to the urban nature of this frontage the amount of intertidal loss is thought to be negligible and the NAEOI.	
PDZ A6		MR1	MR1	MR1	MR1 policy will realign to B1456 and as such, no impact on off-site habitats.	
PDZ A7a		NAI	NAI	NAI	Habitats left to natural processes.	
PDZ A7b		MR1	MR1	MR1	MR1 policy will result in loss of wooded areas, with potential for coastal habitats to move inland. There will be benefits from increased area of intertidal habitat, although this is likely to be negligible. The MR1 designation relates to works possibly required through a partnership management approach. Change is therefore considered limited and therefore NAEOI.	
PDZ A8a		MR2	HTL	HTL	Loss of freshwater habitat as the coastal habitats move inland in epoch 1, but potential loss of intertidal in epochs 2 and 3. Loss of coastal grasslands and agricultural areas during realignment may have adverse effects on dark-bellied Brent goose.	
PDZ A8b		HTL	MR2	HTL	Loss of freshwater habitat as the coastal habitats move inland in epoch 2, but potential loss of intertidal in epochs 1 and 3 respectively. Loss of coastal grasslands and agricultural areas during realignment may have adverse effects on dark-bellied Brent goose.	
PDZ A8c		MR1	MR1	MR1	MR1 designation only relates to works possibly required through a partnership management approach. Any loss of freshwater or terrestrial areas, will be negligible as will gains in coastal habitat. Change is therefore considered minimal and will not therefore have an adverse on designated species or habitats.	
PDZ A9a,c,e,g,i,k		HTL	HTL	HTL	Loss of intertidal habitats through coastal squeeze. This has the potential to affect a number of coastal bird species visiting the site as there will be less intertidal area for feeding.	
PDZ A9b,f,h,j		NAI	NAI	NAI	NAEOI - NAI, therefore natural change	
PDZ A9d,g		MR1	MR1	MR1	MR1 designation only relates to works possibly required through a partnership management approach. Any loss of freshwater or terrestrial areas, will be negligible as will gains in coastal habitat. Change is therefore considered minimal and will not therefore have an adverse on designated species or habitats.	
PDZ A10a,c,e,g		HTL	HTL	HTL	Loss of intertidal habitats through coastal squeeze. This has the potential to affect a number of coastal bird species visiting the site as there will be less intertidal area for feeding.	
PDZ A10b,d		NAI	NAI	NAI	NAEOI - NAI, therefore natural change	
PDZ A10f,h		MR1	MR1	MR1	MR1 designation only relates to works possibly required through a partnership management approach. Any loss of freshwater or terrestrial areas, will be negligible as will gains in coastal habitat. Change is therefore considered minimal and will not therefore have an adverse on designated species or habitats.	
PDZ A11		ATL	HTL	HTL	Loss of intertidal habitats. This has the potential to affect a number of coastal bird species visiting the site as there will be less intertidal area for feeding. The specifics of this assessment will be provided within the Bathside Bay EIA and concomitant AA.	

Unit B - Hamford Water

MR1 = MR for local protection of erosion & MR2 = MR for creation of habitat

B1 - B6b

MR1 = NO DEFENCES THERE AT PRESENT AND THE NEED FOR A NEW LINE OF DEFENCE (LIKELY TO BE MINOR WORKS) NO ACTUAL REALIGNM

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ B1		HTL	HTL	HTL	Loss of intertidal habitats due to coastal squeeze. Freshwater habitats behind the defences will be maintained. Loss of the intertidal feeding area will however, have an adverse effect on a number of overwintering bird species.	
PDZ B2		HTL	MR2	HTL	Loss of freshwater habitat in epoch 2 as the coastal habitats move inland under MR2 policy, but squeeze still likely to occur due to HTL policy in epochs 1 and 3. Loss of coastal grasslands and agricultural areas during realignment may have adverse effects on dark-bellied Brent geese.	
PDZ B3		HTL	HTL	HTL	Loss of intertidal habitats due to coastal squeeze. Freshwater habitats behind the defences will be maintained. Loss of the intertidal feeding area will however, have an adverse effect on a number of overwintering bird species.	
PDZ B3a		HTL	HTL	MR2	Loss of freshwater habitat in epoch 3 as Horsey island is realigned under MR2 policy with potential adverse effects on dark-bellied Brent geese. Squeeze still likely to occur due to HTL policy in epochs 1 and 2.	
PDZ B4a		MR2	HTL	HTL	Loss of freshwater habitat due to MR2 in epoch 1, although this limits squeeze of coastal habitats in the same epoch. However, squeeze of intertidal habitats cannot be ruled out in epochs 2 and 3. Loss of coastal grasslands and agricultural areas during realignment may have adverse effects on dark-bellied Brent geese.	
PDZ B4b		HTL	HTL	HTL	Loss of intertidal habitats due to coastal squeeze. Freshwater habitats behind the defences will be maintained. Loss of the intertidal feeding area will however, have an adverse effect on a number of bird species.	
PDZ B5		HTL	HTL	MR2	Potential loss of intertidal habitat over epochs 1 and 2 as a result of HTL policy. MR2 in epoch 3 will create additional intertidal habitat; however, this will lead to the loss of off-site terrestrial habitats.	
PDZ B6a		NAI	NAI	NAI	NAEOI - NAI, therefore natural change	
PDZ B6b		MR1	MR1	MR1	MR1 policy is for limited intervention to maintain defences if required. Due to nature of frontage, NAEOI.	

Designated sites considered as potentially affected			
Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Hamford Water	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Hamford Water	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SPA site feature		Hamford Water SPA	
Sub Feature(s)	Sensitivity	Conservation Target	
Little tern	2.3% of the GB breeding population	Maintain population within acceptable limits	
Avocet	25% of the GB population over winter	Maintain population within acceptable limits	
Redshank	0.8% of the over-winter population	Maintain population within acceptable limits	
Teal	2.7% of the over-winter population in Great Britain	Maintain population within acceptable limits	
Dark bellied Brent goose	2.3% of the over-winter population	Maintain population within acceptable limits	
Ringed plover	1.1% of the over-winter population	Maintain population within acceptable limits	
Black tailed godwit	1.7% of the over-winter population	Maintain population within acceptable limits	
Grey plover	7.5% of the over-winter population in Great Britain	Maintain population within acceptable limits	
Shelduck	2.2% of the over-winter population in Great Britain	Maintain population within acceptable limits	
Potential effect of policy	Due to the loss of off-site freshwater / terrestrial habitats through MR2 in the B2, B3a, B4a & B5 frontages, an adverse effect on avocet, redshank and dark bellied Brent geese is expected. Loss of intertidal habitat through coastal squeeze is likely to cause an adverse effect in PDZ B1, B2, B3, B3a, B4a, B4b and B5.		
Preventative Measures	Mitigation	Implications for the integrity of the site	
		Adverse effect due to the loss of offsite freshwater / terrestrial habitats on avocet, redshank and dark bellied Brent geese. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species.	

Ramsar site feature		Hamford Water Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target	
Redshank	2099 individuals, representing an average of 1.8% of the GB population in spring / autumn	Maintain population within acceptable limits	
Ringed plover	1169 individuals, representing an average of 1.6% of the population in spring / autumn	Maintain population within acceptable limits	
Dark-bellied Brent Goose	3629 individuals, representing an average of 1.6% of the population in winter	Maintain population within acceptable limits	
Black tailed godwit	377 individuals, representing an average of 1% of the population in winter	Maintain population within acceptable limits	
Potential effect of policy	Due to the loss of off-site freshwater / terrestrial habitats through MR2 in the B2, B3a, B4a & B5 frontages, an adverse effect on redshank and dark bellied Brent geese is expected. Loss of intertidal habitat through coastal squeeze is likely to cause an adverse effect in PDZ B1, B2, B3, B3a, B4a, B4b and B5.		
Preventative Measures	Mitigation	Implications for the integrity of the site	
		Adverse effect due to the loss of freshwater habitat on Redshank and Dark Bellied Brent Geese and on all listed species due to the loss of intertidal habitat. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species.	

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ C1		HTL	HTL	HTL	N/A - no sites affected	
PDZ C2		HTL	HTL	MR2/HTL+	Loss of intertidal habitat in due to coastal squeeze in epoch 1 and 2 Loss of off-site freshwater / terrestrial habitat in epoch 3 due to MR2 policy.	
PDZ C3		HTL	HTL	HTL	N/A - no sites affected	
PDZ C4		HTL	HTL	MR2/HTL	Loss of intertidal habitat in due to coastal squeeze in epoch 1 and 2 Loss of off-site freshwater / terrestrial habitat in epoch 3 due to MR2 policy.	

Designated sites considered as potentially affected			
Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats	
Colne Estuary	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Colne Estuary	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.	No change in extent
<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent
<i>Spartina</i> swards (<i>Spartinion maritimae</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the	No change in extent
Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent
Sandbanks which are slightly covered by seawater all the time (Not a primary reason for selection of the site)		No change in extent
Potential effect of policy	The key PDZ here is C4 which has the potential to lead to the loss of intertidal habitat through squeeze in epoch 1 and 2 due to HTL policy. The effects of policy and development of the system are uncertain and although C4 presently appears to show an accretional trend, this is uncertain in later epochs. On the basis of this, NAEIO cannot be concluded due to squeeze in epochs 1 and 2. The potential MR2 policy in epoch 3 is not considered likely to have an adverse effect on the SAC, and may serve to mitigate further effects of squeeze.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site.

SPA site feature	Colne Estuary SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Little tern	at least 1.6% of the GB breeding population	Maintain population within acceptable limits
Hen harrier	up to 2.5% of the GB population	Maintain population within acceptable limits
Pochard	up to 6% of the population in Great Britain during the breeding season	Maintain population within acceptable limits
Ringed plover	up to 1.6% of the population in Great Britain during the breeding season	Maintain population within acceptable limits
Dark bellied Brent goose	1.6% of the over-winter population	Maintain population within acceptable limits
Redshank	1.2% of the over-winter population	Maintain population within acceptable limits
Potential effect of policy	The key PDZ here is C4 which has the potential to lead to the loss of intertidal habitat through squeeze in Epoch 1 and 2 (through HTL). The effects of policy and development of the system are uncertain and although C4 presently appears to show an accretional trend, this is uncertain in later epochs. Adverse effect is therefore concluded for intertidally-dependent species in epochs 1 and 2. The potential MR2 in epoch 3 will lead to the loss of terrestrial habitat utilised by SPA cited species, in particular dark-bellied Brent geese. Adopting the precautionary approach this is taken to constitute adverse effect.	
Preventative Measures	Mitigation	Implications for the integrity of the site An adverse effect with respect to loss of off-site freshwater / terrestrial habitat is expected through the pursuit of MR policy. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species.

Ramsar site feature	Colne Estuary Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target
Redshank	1624 individuals, representing an average of 1.3% of the GB population over winter	Maintain population within acceptable limits
Dark-bellied Brent Goose	3165 individuals, representing an average of 1.4% of the population over winter	Maintain population within acceptable limits
Potential effect of policy	The key PDZ here is C4 which has the potential to lead to the loss of intertidal habitat through squeeze in Epoch 1 and 2 (through HTL). The effects of policy and development of the system are uncertain and although C4 presently appears to show an accretional trend, this is uncertain in later epochs. Adverse effect is therefore concluded for redshank and dark-bellied Brent geese in epochs 1 and 2. The possible MR in epoch 3 will lead to the loss of off-site terrestrial / freshwater habitat utilised by dark-bellied Brent geese, also constituting an adverse effect.	
Preventative Measures	Mitigation	Implications for the integrity of the site An adverse effect with respect to dark-bellied Brent geese is expected through the pursuit of MR policy leading to the loss of terrestrial roosting habitat. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species.

Unit D- River Colne (mid estuary)

MR1 = MR for local protection of erosion & MR2 = MR for creation of habitat

D1 - D8c

MR1 = NO DEFENCES THERE AT PRESENT AND THE NEED FOR A NEW LINE OF DEFENCE (LIKELY TO BE MINOR WORKS) NO ACTUAL REALIGNMENT IS EXPECTED.

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ D1A		HTL	HTL	HTL	Although accretion is currently thought to be occurring adjacent to the Point Clear frontage, there is uncertainty regarding this in later epochs. As such, HTL policy will result in squeeze of intertidal habitats throughout the lifetime of the plan.	
PDZ D1b		HTL	MR2	HLT	MR2 in epoch 2 will encroach on freshwater / terrestrial habitats, leading to the loss of breeding habitat for common pochard and loss of freshwater overwintering habitat for dark-bellied Brent goose. This section of the frontage is thought to be eroding and as such, adverse effects on intertidal habitats in epochs 1 and 3 are likely to occur. As such, NAEOL cannot be concluded for either freshwater or intertidal habitats.	
PDZ D2		HTL	HTL	MR2	Erosion is thought to be occurring in PDZ D2 and as such, squeeze will impact coastal habitats in epochs 1 and 2. MR2 in epoch 3 will lead to the loss of freshwater / terrestrial habitats within the SPA / Ramsar site, with a concomitant adverse effect.	
PDZ D3		HTL	MR2	HTL	The upper end of Flag creek is accreting, which is likely to lead to loss of mudflat in epoch 1; however, coastal squeeze cannot be ruled out in epoch 3. MR2 in epoch 2 will lead to the loss of off-site freshwater / terrestrial habitats, especially breeding habitat for common pochard and overwintering habitat for dark-bellied Brent goose.	
PDZ D4		HTL	HTL	HTL	Loss of intertidal habitats due to coastal squeeze in all epochs. Freshwater habitats behind the defences will be maintained. Loss of the intertidal feeding area will however, have an adverse effect on a number of bird species.	
PDZ D5		HTL	MR2	HTL	The D5 frontage is currently eroding and therefore loss of intertidal habitats will occur in epochs 1 and 3. MR2 in epoch 2 will encroach on freshwater habitats and result in loss of breeding habitat for common pochard and loss of overwintering habitat for dark-bellied Brent goose.	
PDZ D6a		HTL	HTL	HTL	Loss of intertidal habitats due to coastal squeeze in all epochs. Freshwater habitats behind the defences will be maintained. Loss of the intertidal feeding area will however, have an adverse effect on a number of bird species.	
PDZ D6b		HTL	MR2	HTL	The D6b frontage is currently eroding and therefore loss of intertidal habitats will occur in epochs 1 and 3. MR2 in epoch 2 will encroach on freshwater habitats and result in loss of breeding habitat for common pochard and loss of overwintering habitat for dark-bellied Brent goose.	
PDZ D7		HTL	HTL	HTL	N/A - no sites affected	
PDZ D8a		HTL	MR2	HTL	The D8a frontage is currently eroding and therefore loss of intertidal habitats will occur in epochs 1 and 3. MR2 in epoch 2 will encroach on freshwater habitats and result in loss of breeding habitat for common pochard and loss of overwintering habitat for dark-bellied Brent goose.	
PDZ D8b		HTL	HTL	HTL	Loss of intertidal habitats due to coastal squeeze in all epochs. Freshwater habitats behind the defences will be maintained. Loss of the intertidal feeding area will however, have an adverse effect on a number of bird species.	
PDZ D8c		HTL	HTL	HTL	Loss of intertidal habitats due to coastal squeeze in all epochs. Freshwater habitats behind the defences will be maintained. Loss of the intertidal feeding area will however, have an adverse effect on a number of bird species.	

Designated sites considered as potentially affected

Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats	
Colne Estuary	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Colne Estuary	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.	No change in extent
<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent
<i>Spartina</i> swards (<i>Spartinion maritima</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glaucopuccinellietalia maritima</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>hula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.	No change in extent
Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocometea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent

Sandbanks which are slightly covered by seawater all the time (Not a primary reason for selection of the site)		No change in extent
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze in all PDZ except D7.	
Preventative Measures	Mitigation	Implications for the integrity of the site The HTL policies in this frontage have the potential to lead to the loss of intertidal habitat (through coastal squeeze), this represents an adverse effect on the integrity of the site.

SPA site feature	Colne Estuary SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Little tern	at least 1.6% of the GB breeding population	Maintain population within acceptable limits
Hen harrier	up to 2.5% of the GB population	Maintain population within acceptable limits
Pochard	up to 6% of the population in Great Britain during the breeding season	Maintain population within acceptable limits
Ringed plover	up to 1.6% of the population in Great Britain during the breeding season	Maintain population within acceptable limits
Dark bellied Brent goose	1.6% of the over-winter population	Maintain population within acceptable limits
Redshank	1.2% of the over-winter population	Maintain population within acceptable limits
Potential effect of policy	Due to the loss of freshwater habitat (both off-site and within the site) through MR2 in Epoch 2 in D1b, D3, D5, D6b & D8a, an adverse effect on hen harrier, pochard, redshank and dark bellied Brent geese is expected. Loss of intertidal habitat through coastal squeeze is likely to have an adverse effect on ringed plover, dark-bellied Brent geese and redshank and is therefore considered an adverse effect.	
Preventative Measures	Mitigation	Implications for the integrity of the site NAEOI cannot be concluded due to the loss of freshwater / terrestrial habitat. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species.

Ramsar site feature	Colne Estuary Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target
Redshank	1624 individuals, representing an average of 1.3% of the GB population over winter	Maintain population within acceptable limits
Dark-bellied Brent Goose	3165 individuals, representing an average of 1.4% of the population over winter	Maintain population within acceptable limits
Potential effect of policy	Due to the loss of freshwater habitat (both off-site and within the site) through MR in Epoch 2 in D1b, D3, D5, D6b & D8a, an adverse effect on redshank and dark bellied Brent geese is expected. Loss of intertidal habitat through coastal squeeze is likely to have an adverse effect on both species and is therefore considered as an adverse effect.	
Preventative Measures	Mitigation	Implications for the integrity of the site NAEOI cannot be concluded due to the loss of freshwater / terrestrial habitat. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species.

Unit E - Mersea Island

E1 - E4b

MR1 = MR for local protection of erosion & MR2 = MR for creation of habitat

MR1 = NO DEFENCES THERE AT PRESENT AND THE NEED FOR A NEW LINE OF DEFENCE (LIKELY TO BE MINOR WORKS) NO ACTUAL REALIGNMENT IS EXP

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ E1		HTL	HTL	HTL	Erosion is currently occurring in E1 and therefore a HTL policy throughout all epochs will result in coastal squeeze, leading to loss of intertidal habitat and a reduction in the feeding area for a number of key species.	
PDZ E2		HTL	MR2	HTL	The E2 frontage is currently eroding and therefore loss of intertidal habitats will occur in epochs 1 and 3. MR2 in epoch 2 will encroach on off-site freshwater habitats, to the detriment of SPA / Ramsar bird species (predominantly breeding habitat for common pochard and overwintering habitat for dark-bellied Brent goose).	
PDZ E3		HTL	HTL	HTL	The HTL policy may result in coastal squeeze, leading to loss of intertidal habitat and a reduction in the feeding area for a number of key species.	
PDZ E4a		HTL	MR2	HTL	MR2 in the second epoch will encroach on freshwater habitats and result in loss of breeding habitat for common pochard and loss of freshwater overwintering habitat for dark-bellied Brent goose. Although the frontage is accreting, coastal squeeze cannot be ruled out.	
PDZ E4b		HTL	HTL	HTL	The HTL policy may result in coastal squeeze, leading to loss of intertidal habitat and a reduction in the feeding area for a number of key species.	

Designated sites considered as potentially affected			
Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats	
Colne Estuary	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Colne Estuary	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	
Blackwater Estuary	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Blackwater Estuary	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.	No change in extent
<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent
<i>Spartina</i> swards (<i>Spartinion maritimae</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.	No change in extent

Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent
Sandbanks which are slightly covered by seawater all the time (<i>Not a primary reason for selection of the site</i>)		No change in extent
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze. Loss of intertidal is expected in all frontages due to HTL policy. MR2 is proposed in E2 (epoch 2) and E4a (epoch 2). An element of PDZ3 is not located within the SAC, and areas within E3, E4a & E4b are thought likely to accrete during epoch 1. The remainder of the unit is expected to show loss of intertidal through squeeze in all epochs and therefore NAEOI cannot be concluded with respect to intertidal habitats.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site.

SPA site feature	Colne Estuary SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Little tern	at least 1.6% of the GB breeding population	Maintain population within acceptable limits
Hen harrier	up to 2.5% of the GB population	Maintain population within acceptable limits
Pochar	up to 6% of the population in Great Britain during the breeding season	Maintain population within acceptable limits
Ringed plover	up to 1.6% of the population in Great Britain during the breeding season	Maintain population within acceptable limits
Dark bellied Brent goose	1.6% of the over-winter population	Maintain population within acceptable limits
Redshank	1.2% of the over-winter population	Maintain population within acceptable limits
Potential effect of policy	PDZ E1, E2 and E4b are adjacent to this site and are considered to have an adverse effect due to the loss of freshwater habitat through MR2 in the E2 & E4a frontages. The effect of this loss of terrestrial habitat is considered to have an adverse effect on hen harrier, pochard, redshank and dark bellied Brent geese which use this area for roosting, feeding and breeding. The loss of intertidal habitat through coastal squeeze is likely to have an adverse effect on listed species in frontages E1 & E4b..	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to the loss of freshwater / terrestrial habitat on SPA-cited bird species. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species.

Ramsar site feature	Colne Estuary Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target
Redshank	1624 individuals, representing an average of 1.3% of the GB population over winter	Maintain population within acceptable limits
Dark-bellied Brent Goose	3165 individuals, representing an average of 1.4% of the population over winter	Maintain population within acceptable limits
Potential effect of policy	PDZ E1, E2 and E4b are adjacent to this site and are considered to have an adverse effect due to the loss of freshwater habitat through MR2 in the E2 & E4a frontages. The effect of this loss of terrestrial habitat is considered to have an adverse effect on redshank and dark bellied Brent geese which use this area for roosting, feeding and breeding. The loss of intertidal habitat through coastal squeeze is likely to have an adverse effect on Ramsar-cited species in frontages E1 & E4b.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to the loss of freshwater / terrestrial habitat on Ramsar-cited bird species (both redshank and dark bellied Brent geese) . Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species

SPA site feature	Blackwater Estuary SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Little tern	36 pairs representing at least 1.5% of the breeding	Maintain population within acceptable limits
Hen harrier	4 individuals representing up to 0.5% of the wintering	Maintain population within acceptable limits
Avocet	76 individuals representing at least 6.0% of the wintering	Maintain population within acceptable limits
Ringed plover	955 individuals representing up to 1.9% of the	Maintain population within acceptable limits
Dark bellied Brent goose	15,392 individuals representing up to 5.1% of the wintering	Maintain population within acceptable limits
Ruff	51 individuals representing up to 7.3% of the wintering	Maintain population within acceptable limits
Dunlin	33,267 individuals representing up to 2.4% of the wintering	Maintain population within acceptable limits
Grey plover	5,090 individuals representing up to 3.4% of the wintering	Maintain population within acceptable limits
Black tailed godwit	1,280 individuals representing up to 1.8% of the wintering	Maintain population within acceptable limits
Shelduck	4,594 individuals representing up to 1.5% of the wintering	Maintain population within acceptable limits
Redshank	4,015 individuals representing up to 2.7% of the wintering	Maintain population within acceptable limits
Potential effect of policy	PDZ E3 and E4a border this site and are considered to have an adverse effect due to the loss of freshwater habitat through MR in E4a. The effect of this loss is considered to be an adverse effect on hen harrier, avocet, redshank and dark bellied Brent geese which use this area for roosting, feeding and breeding. The loss of intertidal habitat through coastal squeeze in E3 and E4a is likely to have an adverse effect on SPA-cited species and is therefore considered to have an adverse effect in E3 in epochs 1 and 3 and E4a for all epochs.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to the loss of off-site freshwater / terrestrial habitat on SPA-cited bird species. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species

Ramsar site feature	Blackwater Estuary Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target
Redshank	4169 individuals, representing an average of 1.6% of the	Maintain population within acceptable limits
Grey plover	4215 individuals, representing an average of 1.7% of the	Maintain population within acceptable limits
Dunlin	27655 individuals, representing an average of 2% of the	Maintain population within acceptable limits
Black tailed godwit	2174 individuals, representing an average of 6.2% of the	Maintain population within acceptable limits
Shelduck	3141 individuals, representing an average of 1% of the	Maintain population within acceptable limits
Golden plover	16083 individuals, representing an average of 1.7% of the	Maintain population within acceptable limits
Dark-bellied Brent Goose	8689 individuals, representing an average of 4% of the	Maintain population within acceptable limits
Potential effect of policy	PDZ E3 and E4 border this site and are considered to have an adverse effect due to the loss of freshwater habitat through MR in E4a. The effect of this loss is considered to be an adverse effect on redshank and dark bellied Brent geese which use this area for roosting, feeding and breeding. The loss of intertidal habitat through coastal squeeze in E3 and E4a is likely to have an adverse effect on Ramsar-cited species and is therefore considered to have an adverse effect in E3 in epochs 1 and 3 and E4a for all epochs.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to the loss of off-site freshwater / terrestrial habitat on redshank and dark bellied Brent geese. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species

Unit F - River Blackwater (mid estuary)

MR1 = MR for local protection of erosion & MR2 = MR for creation of habitat

F1-F15 MR1 = NO DEFENCES THERE AT PRESENT AND THE NEED FOR A NEW LINE OF DEFENCE (LIKELY TO BE MINOR WORKS) NO ACTUAL REALIGNMENT IS EXPECTED

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ F1		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F2		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F3		HTL	HTL	MR2	Potential loss of intertidal habitat over epochs 1 and 2 as a result of HTL policy. MR in epoch 3 will create additional intertidal habitat, with concomitant loss of off-site freshwater / terrestrial habitat.	
PDZ F4		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F5		HTL	HTL	MR2	Potential loss of intertidal habitat over epochs 1 and 2 as a result of HTL policy. MR in epoch 3 will create additional intertidal habitat, but at detriment to off-site freshwater and terrestrial habitats. Terrestrial habitat located within Blackwater SPA / Ramsar will be maintained, however.	
PDZ F6		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F7		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect, especially large area of mudflat located to the south of Heybridge Hall.	
PDZ F8		HTL	HTL	HTL	Limited loss of intertidal due to predominantly urban nature. As such, this area is unlikely to be a popular feeding site due to disturbance and therefore NAEOI.	
PDZ F9a		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F9b		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F10		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F11a		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F11b		NAI	NAI	NAI	NAI, therefore NAEOI.	
PDZ F11c		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F12		HTL	HTL	MR2	Potential loss of intertidal habitat over epochs 1 and 2 as a result of HTL policy. MR in epoch 3 will create additional intertidal habitat, with concomitant loss of off-site freshwater / terrestrial habitat.	
PDZ F13		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ F14		HTL+	MR2+	HTL+	Loss of freshwater habitat under epoch 2 MR2, although this will reduce effects of coastal squeeze on intertidal habitats. Loss of coastal grasslands and agricultural areas during realignment may have adverse effects on dark-bellied Brent goose and golden plover over-wintering areas and common pochard freshwater breeding grounds.	
PDZ F15		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	

Designated sites considered as potentially affected				
Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area	
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats		
Blackwater Estuary	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2		
Blackwater Estuary	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance		
Dengie	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2		
Dengie	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance		

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.	No change in extent

<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent
Spartina swards (<i>Spartinion maritimae</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.	No change in extent
Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocometea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent
Sandbanks which are slightly covered by seawater all the time (Not a primary reason for selection of the site)		No change in extent
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze. With the exception of PDZ F11a, all PDZs provide for an element of HTL, which has the potential to lead to loss of designated intertidal habitat within the Blackwater estuary. Current understanding of the system suggests that PDZ F7 - F13 may currently be in an overall accretional state, although localised erosion is also thought to be occurring. However, in the other PDZ, erosion is known to be occurring, to the detriment of intertidal habitats. As such, losses due to squeeze may be limited in epoch 1, but more likely in later epochs. The overall loss of intertidal habitat due to coastal squeeze is considered likely to lead to a loss of intertidal habitat and an adverse effect on this site.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site.

SPA site feature	Blackwater Estuary SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Little tern	36 pairs representing at least 1.5% of the breeding population in Great Britain	Maintain population within acceptable limits
Hen harrier	4 individuals representing up to 0.5% of the wintering population in Great Britain	Maintain population within acceptable limits
Avocet	76 individuals representing at least 6.0% of the wintering population in Great Britain	Maintain population within acceptable limits
Ringed plover	955 individuals representing up to 1.9% of the Europe/Northern Africa - wintering population	Maintain population within acceptable limits
Dark bellied Brent goose	15,392 individuals representing up to 5.1% of the wintering Western Siberia/Western Europe population	Maintain population within acceptable limits
Ruff	51 individuals representing up to 7.3% of the wintering population in Great Britain	Maintain population within acceptable limits
Dunlin	33,267 individuals representing up to 2.4% of the wintering Northern Siberia/Europe/Western Africa population	Maintain population within acceptable limits
Grey plover	5,090 individuals representing up to 3.4% of the wintering Eastern Atlantic - wintering population	Maintain population within acceptable limits
Black tailed godwit	1,280 individuals representing up to 1.8% of the wintering Iceland - breeding population	Maintain population within acceptable limits
Shelduck	4,594 individuals representing up to 1.5% of the wintering North-western Europe population	Maintain population within acceptable limits
Redshank	4,015 individuals representing up to 2.7% of the wintering Eastern Atlantic - wintering population	Maintain population within acceptable limits
Potential effect of policy	As outlined above for the SAC, the policies in this unit are expected to lead to widespread loss of intertidal habitat by coastal squeeze. This loss is expected to have an adverse effect on all listed bird species. In addition to this, PDZ F14 provides for MR2 in epoch 2, while PDZ F3, F5, & F12 all provide for MR2 in epoch 3. Such realignments may help to offset the loss of intertidal within the estuary through squeeze, although this is unquantifiable due to uncertain erosion rates. MR2 will also lead to the loss of freshwater / terrestrial (predominantly agricultural land) habitats which are important feeding habitat for dark bellied Brent geese. The NAI policy in F11a is not considered likely to have any adverse effect on SPA species, although it will mitigate some of the intertidal loss.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to loss of off-site terrestrial / freshwater habitats (predominantly agricultural land) with a concomitant effect on SPA-cited bird species. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the affect on SPA species

Ramsar site feature	Blackwater Estuary Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target
Redshank	4169 individuals, representing an average of 1.6% of the population	Maintain population within acceptable limits
Grey plover	4215 individuals, representing an average of 1.7% of the population	Maintain population within acceptable limits
Dunlin	27655 individuals, representing an average of 2% of the population	Maintain population within acceptable limits
Black tailed godwit	2174 individuals, representing an average of 6.2% of the population	Maintain population within acceptable limits
Shelduck	3141 individuals, representing an average of 1% of the population	Maintain population within acceptable limits
Golden plover	16083 individuals, representing an average of 1.7% of the population	Maintain population within acceptable limits
Dark-bellied Brent Goose	8689 individuals, representing an average of 4% of the population	Maintain population within acceptable limits
Potential effect of policy	As outlined above for the SAC, the policies in this unit are expected to lead to widespread loss of intertidal habitat by coastal squeeze. This loss is expected to have an adverse effect on all listed bird species. In addition to this, PDZ F14 provides for MR2 in epoch 2, while PDZ F3, F5, & F12 all provide for MR2 in epoch 3. Such realignments may help to offset the loss of intertidal within the estuary through squeeze, although this is unquantifiable due to uncertain erosion rates. MR2 will also lead to the loss of freshwater / terrestrial (predominantly agricultural land) habitats which are important feeding habitat for dark bellied Brent geese. The NAI policy in F11a is not considered likely to have any adverse effect on Ramsar-cited species, although it will mitigate some of the intertidal loss.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		Adverse effect on Ramsar species due to loss of intertidal habitat (which is considered to have an adverse effect on all species) and loss of agricultural land which will have an adverse effect on Dark Bellied Brent Geese. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ G1		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze.	
PDZ G2		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze.	
PDZ G3		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze.	

Designated sites considered as potentially affected			
Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats	
Dengie	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Dengie	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	
Crouch and Roach	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Crouch and Roach	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.	No change in extent
<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent
<i>Spartina</i> swards (<i>Spartinion maritimae</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.	No change in extent
Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent
Sandbanks which are slightly covered by seawater all the time (Not a primary reason for selection of the site)		No change in extent
The key issue relates to the loss of intertidal habitat through coastal squeeze across all PDZ for all epochs. Therefore AEOI cannot be ruled out.		
Potential effect of policy		
Preventative Measures	Mitigation	Implications for the integrity of the site
		Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site.

SPA site feature	Dengie SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Hen harrier	up to 2.5% of the GB population	Maintain population within acceptable limits
Knot	2.4% of the population	Maintain population within acceptable limits
Grey plover	1.4% of the population	Maintain population within acceptable limits
Dark bellied Brent goose	0.8% of the population	Maintain population within acceptable limits
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze across all PDZ for all epochs. Therefore AEOI cannot be ruled out for all SPA cited species.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species.

Ramsar site feature	Dengie Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target
Grey plover	4582 individuals, representing an average of 1.8% of the population	Maintain population within acceptable limits
Knot	14528 individuals, representing an average of 3.2% of the population	Maintain population within acceptable limits
Dark-bellied Brent Goose	2000 individuals, representing an average of 2% of the GB population	Maintain population within acceptable limits
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze across all PDZ for all epochs. Therefore AEOI cannot be ruled out for all Ramsar cited species.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species.

SPA site feature	Crouch and Roach SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Hen harrier	Up to 2.5% of the GB population	Maintain population within acceptable limits
Dark bellied Brent goose	1% of the population	Maintain population within acceptable limits
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze across all PDZ for all epochs. Therefore AEOI cannot be ruled out for all SPA cited species.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species.

Ramsar site feature	Crouch and Roach Ramsar	
Sub Feature(s)	Sensitivity	Conservation Target
Dark-bellied Brent Goose	2103 individuals, representing an average of 2.1% of the GB population	Maintain population within acceptable limits
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze across all PDZ for all epochs. Therefore AEOI cannot be ruled out for dark bellied Brent geese.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species.

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ H1		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H2a		HTL	MR2	HTL	Loss of intertidal habitat during epochs 1 and 3 due to coastal squeeze. MR in epoch 3 will create additional intertidal habitat, but will mean loss of freshwater / terrestrial habitat.	
PDZ H2b		HTL	HTL	MR2	Potential loss of intertidal habitat over epochs 1 and 2 as a result of HTL policy. MR in epoch 3 will create additional intertidal habitat but will mean loss of freshwater / terrestrial habitat.	
PDZ H3		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H4		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H5		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H6		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H7		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H8a		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H8b		HTL	MR2	HTL	Loss of intertidal habitat during epoch 1 and 3 due to coastal squeeze. MR in epoch 2 will create additional intertidal habitat, but will mean loss of freshwater / terrestrial habitat.	
PDZ H9		NAI	NAI	NAI	Habitats left to natural processes.	
PDZ H10		MR2	HTL	HTL	The Wallasea MR2 in epoch 1 will create large amounts of intertidal habitat and mitigate losses for the estuary, but will also mean loss of freshwater / terrestrial habitat with potential impacts on SPA / Ramsar species. Squeeze will occur in epochs 2 and 3 against realigned defences.	
PDZ H11a		HTL	MR2	HTL	Loss of intertidal habitat during epoch 1 and 3 due to coastal squeeze. MR in epoch 2 will create additional intertidal habitat, but will mean loss of freshwater / terrestrial habitat.	
PDZ H11b		HTL	MR2	HTL	Potential loss of intertidal habitat over epochs 1 as a result of HTL policy. MR in epoch 2 will create additional intertidal habitat, but will mean loss of freshwater / terrestrial habitat.	
PDZ H12		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H13		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Freshwater habitat is maintained but intertidal feeding area for key bird species will be lost having an adverse effect.	
PDZ H14		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Key over-wintering species in the designated areas will be adversely impacted due to reduced feeding areas.	
PDZ H15		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Key over-wintering species in the designated areas will be adversely impacted due to reduced feeding areas.	FOULNESS
PDZ H16		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. Key over-wintering species in the designated areas will be adversely impacted due to reduced feeding areas.	FOULNESS

Designated sites considered as potentially affected

Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats	
Crouch and Roach	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Crouch and Roach	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	
Foulness	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Foulness	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.	No change in extent
<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent

Spartina swards (<i>Spartinion maritimae</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.	No change in extent
Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent
Sandbanks which are slightly covered by seawater all the time (Not a primary reason for selection of the site)		No change in extent
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze. Loss of intertidal is expected in all PDZs during the lifetime of the plan. The realignment at Wallasea will provide enough habitat to mitigate any adverse effects during epoch 1, but without further monitoring, requirements for epochs 2 and 3 are not quantifiable.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site.

SPA site feature	Crouch and Roach SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Hen harrier	up to 2.5% of the GB population	Maintain population within acceptable limits
Dark bellied Brent goose	1% of the population	Maintain population within acceptable limits
Potential effect of policy	Loss of intertidal habitats through coastal squeeze is expected in all PDZ during the lifetime of the plan (H1 - H14). MR in H2a (E2), H2b (E3), H8b (E2), H10 (E1), H11a (E2), H11b (E3) will lead to loss of freshwater / terrestrial (either within or adjacent to the site). HTL policy will lead to the loss of intertidal habitat, with a concomitant impact on both SPA cited species. In addition to this, MR will lead to the loss of agricultural land, which although not designated within the SPA, is important secondary habitat for dark bellied Brent geese. Therefore AEOI.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to the loss of offsite and onsite terrestrial and freshwater habitat. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on SPA species.

Ramsar site feature	Crouch and Roach Ramsar	
Sub Feature(s)		Conservation Target
Dark-bellied Brent Goose	2103 individuals, representing an average of 2.1% of the GB population	Maintain population within acceptable limits
Potential effect of policy	Loss of intertidal habitats through coastal squeeze is expected in all PDZ during the lifetime of the plan (H1 - H14). MR in H2a (E2), H2b (E3), H8b (E2), H10 (E1), H11a (E2), H11b (E2) will lead to loss of freshwater / terrestrial (either within or adjacent to the site). HTL policy will lead to the loss of intertidal habitat, with a concomitant impact on dark bellied Brent geese. In addition to this, MR will lead to the loss of agricultural land, which although not designated within the Ramsar, is important secondary habitat. Therefore AEOI.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to the loss of offsite and onsite terrestrial and freshwater habitat. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site due to the effect on Ramsar species.

SPA site feature	Foulness SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Hen harrier	6 individuals representing at least 0.8% of the wintering population in Great Britain	Maintain population within acceptable limits
Avocet	46 pairs representing at least 7.8% of the breeding population in Great Britain	Maintain population within acceptable limits
Common tern	220 pairs representing at least 1.8% of the breeding population in Great Britain	Maintain population within acceptable limits
Little tern	24 pairs representing at least 1.0% of the breeding population in Great Britain	Maintain population within acceptable limits
Sandwich tern	320 pairs representing at least 2.3% of the breeding population in Great Britain	Maintain population within acceptable limits
Bar tailed godwit	7,639 individuals representing at least 14.4% of the wintering population in Great Britain	Maintain population within acceptable limits
Golden plover	3,359 individuals representing at least 1.3% of the wintering population in Great Britain	Maintain population within acceptable limits
Redshank	2,144 individuals representing at least 1.2% of the Eastern Atlantic - wintering population	Maintain population within acceptable limits
Grey plover	4,209 individuals representing at least 2.8% of the wintering Eastern Atlantic - wintering population	Maintain population within acceptable limits
Oystercatcher	11,756 individuals representing at least 1.3% of the wintering Europe & Northern/Western Africa population	Maintain population within acceptable limits
Knot	40,429 individuals representing at least 11.6% of the wintering North-eastern Canada/Greenland/Iceland/North-western Europe population	Maintain population within acceptable limits
Dark bellied Brent goose	13,075 individuals representing at least 4.4% of the wintering Western Siberia/Western Europe population	Maintain population within acceptable limits
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze which is important as habitat for all listed species. Loss of intertidal is expected in H15 & H16 through coastal squeeze. As no MR2 is planned (within this unit) within the Foulness SPA, there will be no adverse effects on freshwater / terrestrial habitats.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		Loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect SPA species and represents an adverse effect on the integrity of the site.

Ramsar site feature	Foulness Ramsar	
Sub Feature(s)		Conservation Target
Redshank	2586 individuals, representing an average of 1% of the population	Maintain population within acceptable limits
Oystercatcher	14674 individuals, representing an average of 1.4% of the population	Maintain population within acceptable limits
Grey plover	4343 individuals, representing an average of 1.7% of the population	Maintain population within acceptable limits
Knot	22439 individuals, representing an average of 4.9% of the population	Maintain population within acceptable limits
Bar tailed godwit	4095 individuals, representing an average of 3.4% of the population	Maintain population within acceptable limits
Dark-bellied Brent Goose	6475 individuals, representing an average of 3% of the population	Maintain population within acceptable limits
Potential effect of policy	The key issue relates to the loss of intertidal habitat through coastal squeeze which is important as habitat for all listed species. Loss of intertidal is expected in H15 & H16 through coastal squeeze. As no MR2 is planned (within this unit) within the Foulness Ramsar, there will be no adverse effects on freshwater / terrestrial habitats.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		Loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect Ramsar species and represents an adverse effect on the integrity of the site.

Unit I - River Roach

MR1 = MR for local protection of erosion & MR2 = MR for creation of habitat

11a - 11c

MR1 = NO DEFENCES THERE AT PRESENT AND THE NEED FOR A NEW LINE OF DEFENCE (LIKELY TO BE MINOR WORKS) NO ACTUAL REALIGNMENT IS EXPECTED.

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ 1a		HTL	HTL	HTL	Loss of intertidal habitat due to coastal squeeze. This would cause an adverse impact on the designated sites due to reduced feeding area for over wintering birds.	
PDZ 11b		HTL	HTL	HTL	Loss of intertidal habitat in epochs 1 and 2 due to coastal squeeze. MR in epoch 3 will increase intertidal habitat area again but have an adverse impact on freshwater habitat, particularly important for over-wintering dark-bellied Brent goose.	
PDZ 11c		HTL	HTL	MR2	Loss of intertidal habitat in epochs 1 and 2 due to coastal squeeze. MR in epoch 3 will increase intertidal habitat area again but have an adverse impact on freshwater habitat, particularly important for over-wintering dark-bellied Brent goose.	

Designated sites considered as potentially affected			
Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats	
Foulness	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Foulness	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal communities.	No change in extent
<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent
Spartina swards (<i>Spartina maritima</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glaucopuccinellietalia maritimae</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.	No change in extent
Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocometea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent
Sandbanks which are slightly covered by seawater all the time (Not a primary reason for selection of the site)		No change in extent
Potential effect of policy	The features likely to be affected are the intertidal habitats which may be squeezed by the HTL policies in the first two epochs. Loss of intertidal habitat in this PDZ would therefore constitute an adverse effect on the integrity of this site.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site.

SPA site feature	Foulness SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Hen harrier	6 individuals representing at least 0.8% of the wintering population in Great Britain	Maintain population within acceptable limits
Avocet	46 pairs representing at least 7.8% of the breeding population in Great Britain	Maintain population within acceptable limits
Common tern	220 pairs representing at least 1.8% of the breeding population in Great Britain	Maintain population within acceptable limits
Little tern	24 pairs representing at least 1.0% of the breeding population in Great Britain	Maintain population within acceptable limits
Sandwich tern	320 pairs representing at least 2.3% of the breeding population in Great Britain	Maintain population within acceptable limits
Bar tailed godwit	7,639 individuals representing at least 14.4% of the wintering population in Great Britain	Maintain population within acceptable limits
Golden plover	3,359 individuals representing at least 1.3% of the wintering population in Great Britain	Maintain population within acceptable limits
Redshank	2,144 individuals representing at least 1.2% of the Eastern Atlantic - wintering population	Maintain population within acceptable limits
Grey plover	4,209 individuals representing at least 2.8% of the wintering Eastern Atlantic - wintering population	Maintain population within acceptable limits

Oystercatcher	11,756 individuals representing at least 1.3% of the wintering Europe & Northern/Western Africa population	Maintain population within acceptable limits
Knot	40,429 individuals representing at least 11.6% of the wintering North-eastern Canada/Greenland/Iceland/North-western Europe population	Maintain population within acceptable limits
Dark bellied Brent goose	13,075 individuals representing at least 4.4% of the wintering Western Siberia/Western Europe population	Maintain population within acceptable limits
Potential effect of policy	Due to the loss of freshwater habitat (in epoch 3) through MR2 in PDZIC, an adverse effect is expected, while loss of intertidal habitat through coastal squeeze is also likely to constitute an adverse effect on SPA-cited species.	
Preventative Measures	Mitigation	Implications for the integrity of the site
		NAEOI cannot be concluded due to loss of freshwater / terrestrial habitat in epoch 3 and the concomitant effect on SPA-cited bird species. Additionally loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect SPA species and represents an adverse effect on the integrity of the site.

Ramsar site feature	Foulness Ramsar	
Sub Feature(s)		Conservation Target
Redshank	2586 individuals, representing an average of 1% of the population	Maintain population within acceptable limits
Oystercatcher	14674 individuals, representing an average of 1.4% of the population	Maintain population within acceptable limits
Grey plover	4343 individuals, representing an average of 1.7% of the population	Maintain population within acceptable limits
Knot	22439 individuals, representing an average of 4.9% of the population	Maintain population within acceptable limits
Bar tailed godwit	4095 individuals, representing an average of 3.4% of the population	Maintain population within acceptable limits
Dark-bellied Brent Goose	6475 individuals, representing an average of 3% of the population	Maintain population within acceptable limits
Potential effect of policy	Due to the loss of freshwater habitat (in epoch 3) through MR2 in PDZIC, an adverse effect is expected, while loss of intertidal habitat through coastal squeeze is also likely to constitute an adverse effect on Ramsar-cited species.	
Preventative Measures	Mitigation	Implications for the integrity of the site
	Loss of intertidal habitat will be offset in advance by the EA, RCHP or other measure.	NAEOI cannot be concluded due to loss of freshwater / terrestrial habitat in epoch 3 and the concomitant effect on Ramsar-cited bird species. Additionally, loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect Ramsar species and represents an adverse effect on the integrity of the site.

Policy Unit	Name	Policy Plan			Initial Policy determination	General effect on features
		National SMP Policy				
		2025	2055	2105		
PDZ J		HTL	HTL	HTL	Loss of intertidal area due to coastal squeeze. This will affect a number of key over-wintering birds at the designated sites. At the present time, intertidal feeding areas would be located some distance from the promenade, and so disturbance from Southend would be minimised. However, if the intertidal zone is reduced and moves nearer to shore, bird density nearer to Southend will increase. In this context, the effects of squeeze of intertidal habitat are likely to be significant.	

Designated sites considered as potentially affected			
Site	Designation	Key Features (for full account see Table 4.1)	Location within Management Area
Essex Estuaries	SAC	Multiple Annexe I & Annexe II habitats	
Foulness	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Foulness	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	
Benfleet and Southend Marshes	SPA	Internationally important populations of regularly occurring Annex I migratory species: Article 4.1 & 4.2	
Benfleet and Southend Marshes	Ramsar	Ramsar Criterion 6. Species/populations occurring at levels of international importance	

SAC site feature	Essex Estuaries SAC	
Sub Feature(s)	Sensitivity	Conservation Target
Estuaries	This is a large estuarine site in south-east England, and is a typical, undeveloped, coastal plain estuarine system with associated open coast mudflats and sandbanks. The site comprises the major estuaries of the Colne, Blackwater, Crouch and Roach rivers and is important as an extensive area of contiguous estuarine habitat. Essex Estuaries contains a very wide range of characteristic marine and estuarine sediment communities and some diverse and unusual marine communities in the lower reaches, including rich sponge communities on mixed, tide-swept substrates. Sublittoral areas have a very rich invertebrate fauna, including the reef-building worm <i>Sabellaria spinulosa</i> , the brittlestar <i>Ophiothrix fragilis</i> , crustaceans and ascidians. The site also has large areas of saltmarsh and other important coastal habitats.	
Mudflats and sandflats not covered by seawater at low tide	Essex Estuaries represents the range of variation of this habitat type found in south-east England and includes the extensive intertidal mudflats and sandflats of the Colne, Blackwater, Roach and Crouch estuaries, Dengie Flats and Maplin Sands. The area includes a wide range of sediment flat communities, from estuarine muds, sands and muddy sands to fully saline, sandy mudflats with extensive growths of eelgrass <i>Zostera</i> spp. on the open coast. The open coast areas of Maplin Sands and Dengie Flats have very extensive mudflats and an unusually undisturbed nature. Maplin Sands is particularly important for its large, nationally-important beds of dwarf eelgrass <i>Zostera noltei</i> and associated animal	No change in extent
<i>Salicornia</i> and other annuals colonising sand and mud	Glasswort <i>Salicornia</i> spp. saltmarsh in the Essex estuaries on the east coast of England forms an integral part of the transition from the extensive and varied intertidal mud and sandflats through to upper saltmeadows. Although the saltmarshes in this area are generally eroding, secondary pioneer communities appear as a precursor to erosion on the seaward edge of degraded mid-marsh communities. The area of pioneer marsh includes gradation into extensive cord-grass <i>Spartina</i> spp. swards.	No change in extent
<i>Spartina</i> swards (<i>Spartinion maritimae</i>)	The most extensive remaining stand of the native small cord-grass <i>Spartina maritima</i> in the UK and possibly in Europe is found in the Essex Estuaries. The stand is located at Foulness Point and covers approximately 0.17 ha. Other smaller stands are found elsewhere in the estuary complex, notably in the Colne estuary, where it forms a major component of the upper marsh areas.	No change in extent
Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>)	Although the saltmarshes in this area are generally eroding, extensive salt meadows remain and Essex Estuaries represents Atlantic salt meadows in south-east England, with floristic features typical of this part of the UK. Golden samphire <i>Inula crithmoides</i> is a characteristic species of these marshes, occurring both on the lower marsh and on the drift-line. It represents a community of south-east England also found to the south in mainland Europe.	No change in extent
Mediterranean and thermo-Atlantic halophilous scrubs (<i>Sarcocornetea fruticosi</i>)	In this complex of estuarine marshes on the east coast of England the occurrence of Mediterranean and thermo-Atlantic halophilous scrubs is currently artificially restricted by sea-walls. It now occurs principally as a strandline community or at the foot of sea-walls. Recent managed retreat schemes offer the prospect of future expansion of the habitat type. The local variant of this vegetation, which features sea-lavenders <i>Limonium</i> spp. and sea-heath <i>Frankenia laevis</i> , occurs at one location, Colne Point.	No change in extent
Sandbanks which are slightly covered by seawater all the time (Not a primary reason for selection of the site)		No change in extent
Potential effect of policy	The key features likely to be affected here are the estuary, the mudflat and sandbanks. The mudflat and sandbanks are likely to be affected by coastal squeeze through the HTL policy. This squeeze is also likely to effect the mosaic of habitat found within the estuary. Accordingly, the loss or change of habitat through coastal squeeze will have an adverse effect on the integrity of this site.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) represents an adverse effect on the integrity of the site.

SPA site feature	Foulness SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Hen harrier	6 individuals representing at least 0.8% of the wintering population in Great Britain	Maintain population within acceptable limits
Avocet	46 pairs representing at least 7.8% of the breeding population in Great Britain	Maintain population within acceptable limits
Common tern	220 pairs representing at least 1.8% of the breeding population in Great Britain	Maintain population within acceptable limits
Little tern	24 pairs representing at least 1.0% of the breeding population in Great Britain	Maintain population within acceptable limits

Sandwich tern	320 pairs representing at least 2.3% of the breeding population in Great Britain	Maintain population within acceptable limits
Bar tailed godwit	7,639 individuals representing at least 14.4% of the wintering population in Great Britain	Maintain population within acceptable limits
Golden plover	3,359 individuals representing at least 1.3% of the wintering population in Great Britain	Maintain population within acceptable limits
Redshank	2,144 individuals representing at least 1.2% of the Eastern Atlantic - wintering population	Maintain population within acceptable limits
Grey plover	4,209 individuals representing at least 2.8% of the wintering Eastern Atlantic - wintering population	Maintain population within acceptable limits
Oystercatcher	11,756 individuals representing at least 1.3% of the wintering Europe & Northern/Western Africa population	Maintain population within acceptable limits
Knot	40,429 individuals representing at least 11.6% of the wintering North-eastern Canada/Greenland/Iceland/North-western Europe population	Maintain population within acceptable limits
Dark bellied Brent goose	13,075 individuals representing at least 4.4% of the wintering Western Siberia/Western Europe population	Maintain population within acceptable limits
Potential effect of policy	The effects of policy here will be concentrated on species using intertidal habitat. All key species will therefore be affected since the species listed either use intertidal habitat for primary or secondary feeding areas.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect SPA species and represents an adverse effect on the integrity of the site.

Ramsar site feature	Foulness Ramsar	
Sub Feature(s)		Conservation Target
Redshank	2586 individuals, representing an average of 1% of the population	Maintain population within acceptable limits
Oystercatcher	14674 individuals, representing an average of 1.4% of the population	Maintain population within acceptable limits
Grey plover	4343 individuals, representing an average of 1.7% of the population	Maintain population within acceptable limits
Knot	22439 individuals, representing an average of 4.9% of the population	Maintain population within acceptable limits
Bar tailed godwit	4095 individuals, representing an average of 3.4% of the population	Maintain population within acceptable limits
Dark-bellied Brent Goose	6475 individuals, representing an average of 3% of the population	Maintain population within acceptable limits
Potential effect of policy	The effects of policy here will be concentrated on species using intertidal habitat. All key species will therefore be affected since the species listed either use intertidal habitat for primary or secondary feeding areas.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect Ramsar species and represents an adverse effect on the integrity of the site.

SPA site feature	Benfleet and Southend Marshes SPA	
Sub Feature(s)	Sensitivity	Conservation Target
Ringed plover	800 individuals representing at least 1.6% of the Europe/Northern Africa - wintering population	Maintain population within acceptable limits
Grey plover	3,789 individuals representing at least 2.5% of the wintering Eastern Atlantic - wintering population	Maintain population within acceptable limits
Knot	8,850 individuals representing at least 2.5% of the wintering North-eastern Canada/Greenland/Iceland/North-western Europe population	Maintain population within acceptable limits
Dark bellied brent goose	3,819 individuals representing at least 1.3% of the wintering Western Siberia/Western Europe population	Maintain population within acceptable limits
Potential effect of policy	The effects of policy here will be concentrated on species using intertidal habitat. All key species will therefore be affected since the species listed either use intertidal habitat for primary or secondary feeding areas.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect SPA species and represents an adverse effect on the integrity of the site.

Ramsar site feature	Benfleet and Southend Marshes Ramsar	
Sub Feature(s)		Conservation Target
Dunlin	17591 individuals, representing an average of 1.3% of the population	Maintain population within acceptable limits
Grey plover	1710 individuals, representing an average of 3.2% of the GB population	Maintain population within acceptable limits
Knot	6307 individuals, representing an average of 1.4% of the population	Maintain population within acceptable limits
Dark-bellied Brent Goose	4532 individuals, representing an average of 2.1% of the population	Maintain population within acceptable limits
Potential effect of policy	The effects of policy here will be concentrated on species using intertidal habitat. All key species will therefore be affected since the species listed either use intertidal habitat for primary or secondary feeding areas.	
Preventative Measures	Mitigation	Implications for the integrity of the site Loss of intertidal habitat in HTL frontages (through coastal squeeze) will affect Ramsar species and represents an adverse effect on the integrity of the site.