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Reviewing the Impact of Agency Permissions and Activities on Bird Populations in Special Protection Areas: Level 1 Interpretation

Authors

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EXECUTIVE SUMMARY

1. The Environment Agency (EA) needs to review its consents on Special Protection Areas (SPAs) – which are cited for their bird interest – under Regulation 50 of the EC Habitats Directive. This report provides 'Level 1' interpretation of the population trends of the majority (32) of cited waterbird species for 47 of the 62 SPAs with a waterbird interest in England and Wales.

2. The report should be read in conjunction with the interpretation and procedures manual entitled **'A Guide to Waterbird Alerts'** (Leech *et al.* 2002) which has also been produced for the Environment Agency.

3. The report uses an 'Alerts System' which provides a standardised technique with which to monitor changes in the population sizes of wintering waterbirds in the UK over a range of spatial scales and time periods using data collected as part of the Wetland Bird Survey (WeBS). WeBS 'Core Counts' are used to record the numbers of waders and wildfowl at approximately 2000 wetland sites in the UK each year. The scheme has been running for over 30 years.

4. The Alerts System uses General Additive Models (GAMs) to fit a smoothed curve to the annual population indices. Changes in population size calculated using the smoothed values produced by GAMs are less likely to be due to the effects of short-term fluctuations in population size or to errors when sampling than results produced using raw data plots.

5. Proportional changes in the smoothed index value of a population over 5-year, 10-year and 25-year time periods are calculated by subtracting the index value at the start of each period from the index value in the final winter (1999/2000). These values are then categorised according to their magnitude and direction. Population declines of between 25% and 50% are flagged as Medium Alerts and declines of greater than 50% as High Alerts.

6. Accounts are provided for each of the 47 SPAs where waterbird population trends were investigated (organised by EA region). All species for which an SPA is important and for which data were evaluated are listed and following this, species for which High and Medium Alerts have been triggered are listed. Details of the population trends of those species of national or international importance (see section 3.1) at a site and of those species for which High Alerts have been triggered are discussed.

7. The conclusions and recommendations section provides an overview of the status of waterbird species within each region and identifies sites where further investigation into the causes of population changes is required. This 'Level 2' assessment would involve systematic investigation of site-based issues via analyses of existing data sets and discussions with local experts. Factors that may affect waterbirds at the site-level could include water quality changes (such as those resultant from the implementation of the recent Bathing Water and Urban Waste Water Treatment Directives), increased recreational disturbance, habitat change and increased wildfowling.

8. The following 24 SPAs have been identified as requiring further investigation: The Dee Estuary (Wales Region), Walmore Common (Midlands Region), Severn Estuary (Wales and Southwest Regions), Chichester and Langstone Harbours, Medway Estuary and Marshes and Solent and Southampton Water (Southern Region), Abberton Reservoir, Benfleet and Southend Marshes, Blackwater Estuary, Colne Estuary, Hamford Water, Ouse Washes, Stour and Orwell Estuaries and The Wash (Anglian Region), Lindisfarne, Lower Derwent Valley, Northumbria Coast and Teesmouth and Cleveland Coast (Northeast Region) and Duddon Estuary, Martin Mere, Mersey Estuary, Morecambe Bay, Ribble and Alt Estuaries and the Upper Solway Flats and Marshes (Northwest Region).

9. Two SPAs – Solent and Southampton Water and Ribble and Alt Estuaries – would be excluded from this list if cases where species' declines at the site level were matched by both regional and national declines were considered less significant.

1. INTRODUCTION

An interpretation and procedures manual entitled **'A Guide to Waterbird Alerts'** (Leech *et al.* 2002) has been produced for the Environment Agency and should accompany this report. The manual explains the methodology of how Alerts are generated and feed into the decision support system, and also includes references that cover the subject in detail (*e.g.* 'National and site-based alert systems for UK birds' - Gregory *et al.* 1999).

The Environment Agency (EA) needs to review its consents on Special Protection Areas (SPAs) under Regulation 50 of the Habitats Directive. Many wetland areas are designated in part for their waterbird interest. In order to review the impact of consents on bird populations, EA requires a standardised approach that can be applied throughout England and Wales. Waterbird count data have been collected for over 30 years in a standardised manner in the UK as part of the Wetland Bird Survey (WeBS). WeBS aims to generate population estimates for waterbird species, assess the relative importance of different sites in the UK and monitor changes in those populations. The numbers of waders and wildfowl observed during synchronised monthly 'Core Counts' are recorded at approximately 2000 wetland sites each year. 'Core Counts' are made using 'look-see' methodology (Bibby *et al.* 2000), whereby an observer familiar with the species involved surveys the whole of a predefined area. Using these data, annual indices are calculated for each species. For further details of WeBS and the annual waterbird indices, see the accompanying document 'A Guide to Waterbird Alerts' or the latest WeBS Annual Report (Musgrove *et al.* 2001).

To monitor population change and highlight large changes in populations, an 'Alert' system was developed for WeBS. The Alerts scheme provides a standardised technique with which to monitor changes in the population sizes of wintering waterbirds in the UK over a range of spatial scales and time periods using data collected as part of WeBS. Alerts are intended as advisory measures triggering further investigation and, subject to interpretation, should be used as a basis on which to direct research and subsequent conservation efforts if required. For full details of the methodology and interpretation of Alerts, see the accompanying document 'A Guide to Waterbird Alerts' (Leech *et al*. 2002). A brief summary can be found in the Methods section of this report.

Population monitoring at the level of the individual site is vital if the "Favourable Conservation Status" of individual SPAs is to be maintained. Alerts at individual sites should be interpreted in the light of population trends at larger spatial scales. Following agreed targets, of particular conservation concern are those SPAs where species are declining at a rate of greater than 25% over a specified time period when the larger-scale regional or national trends indicate stable or increasing population sizes. This scenario would suggest that there are factors acting specifically at the site that are driving the declines, rather than wider scale issues, such as climate change.

All sites showing declines that are contrary to the regional and national trends are short-listed for Level 1 Interpretation. This involves rapid assessment of all factors with the potential to negatively influence waterbird population sizes, with the exception of those pertaining to operations and permissions. If the factors responsible remain unidentified, sites will be short-listed for Level 2 Interpretation. This would involve systematic investigation of site-based issues via analyses of existing data sets and discussions with local experts. Factors that may affect waterbirds at the site-level could include water quality changes (such as those resultant from the implementation of the recent Bathing Water and Urban Waste Water Treatment Directives), increased recreational disturbance, habitat change and increased wildfowling.

This report provides Level 1 interpretation of the population trends of the majority of cited species for most of the current SPAs with a waterbird interest in England and Wales.

2. METHODS

Species coverage
Of the species recorded during WeBS 'Core Counts', 37 waterbird species are encountered frequently enough for inclusion in the Alerts system. A full list can be found in 'A Guide to Waterbird Alerts', page 11 (Leech *et al*. 2002). Table 3.1.1 lists the 32 species that have been evaluated in this report. Of the other five species, Feral Greylag Goose, Canada Goose, Goosander and Ruddy Duck are not cited for the SPAs evaluated, and Pale-bellied Brent Goose is not regularly indexed in Great Britain. In addition, data covering the following species of waterbird cannot currently be incorporated into the Alerts system. Bean Goose, Pink-footed Goose, Greenland White-fronted Goose, Icelandic Greylag Goose and Barnacle Goose are not fully counted by WeBS and numbers are regularly censused using annual co-ordinated goose counts, rather than monthly WeBS counts. Other waterbird species, including Slavonian Grebe, Bittern, Little Egret, Scaup, Eider, Common Scoter, Velvet Scoter, Purple Sandpiper and Ruff, are recorded by WeBS, but are too scarce to be regularly indexed. Lapwing and Golden Plover are common species but are also not regularly indexed, as WeBS counts cover only a small part of their population.

Site coverage
Of the 62 SPAs in England and Wales with waterbird interest, 47 are detailed in this report. Fourteen sites have been omitted because count data for the cited species were unavailable or largely incomplete: Arun Valley, Avon Valley, Benacre to Easton Bavents, Breydon Water, Broadland, Dyfi Estuary/Aber Dyfi, Holburn Lake and Moss, Lee Valley, Marazion Marsh, Mersey Narrows and North Wirral Foreshore, Nene Washes, Somerset Levels and Moors, Stodmarsh and South West London Waterbodies. In addition, Gibraltar Point SPA was considered part of The Wash SPA for the purposes of this report, because the data available from The Wash WeBS site encompasses both of these areas. A full list of the waterbird species cited for each SPA and those species for which data were available for evaluation are shown in Table 2.1.

The areas surveyed during WeBS 'Core Counts' at WeBS sites are matched as accurately as possible to SPA boundaries. Where WeBS count sectors and SPA boundaries do not coincide, the optimum match is assessed. In many cases, there may be practical reasons for any discrepancy. For example, most WeBS counts of estuaries are made at high tide when the birds are easier to count at roost, whereas some statutory site boundaries largely encompass the intertidal habitat. There may be some SPAs where the sites for which WeBS data are available do not entirely comprise the extent of the SPA. This has been highlighted in the site accounts that follow, and will be fully explored if Level 2 investigation is required.

When considering national or regional Alerts, one can expect a nearly total coverage of populations of strictly estuarine species in the course of a winter, as over 90% of British estuaries are counted each month between September and March. For species which also occur on non-estuarine coasts, such as Ringed Plover, Sanderling, Curlew and Turnstone, the proportion of the population covered will be lower and the Alerts generated should be thought of as Alerts for the proportion that use WeBS sites rather than for the population as a whole. For more widespread species, such as Mallard, much of the population occurs at inland sites. The counting of inland sites follows no formal sampling pattern and therefore it is unclear as to whether these wetlands are a representative sample of the country as a whole.

When calculating Alerts for individual sites, these criteria do not apply. However, the count data are likely to be less complete, resulting in an increased proportion of estimated counts. Tables are provided in the Appendices that summarise the proportion of estimated counts at each site each year.

Analysis
Full details pertaining to the calculation of annual Underhill waterbird indices, smoothed Generalized Additive Model (GAM) indices and Alerts are provided in 'A Guide to Waterbird Alerts' (Leech *et al*. 2002). A brief summary is provided here for reference:

Underhill indices
The annual index value for a particular winter is the number of birds present in that winter (summed monthly counts) expressed relative to the number of birds present in the base winter (in this case, 1999/2000), which is arbitrarily set at 100.

The annual indices are calculated using count data collected between September and March. Within this period, there is a series of months for each species that is used to index that population, chosen to match the period during which the size of the population is at its most stable (see page 11 of 'A Guide to Waterbird Alerts'). Missing counts are inevitable with this kind of data and these are estimated using the Underhill method (Underhill & Prŷs-Jones 1994). The basis of this method is a Generalized Linear Model (GLM) with a Poisson error distribution and log link function, which fits a model with site, year and month factors. Where missing counts occur, they are estimated using the parameters calculated in the GLM.

Smoothed GAM indices
Natural short-term fluctuations in population size, for example those caused by variation in the severity of conditions over the winter period, can differ in size and/or direction from longer-term population trends, hindering their interpretation. Extreme values may trigger false Alerts due to misinterpretation of temporary, short-term declines as longer-term population trends. Alternatively, long-term trends that may have led to Alerts being flagged could be obscured by short-term fluctuations. In order to avoid such misinterpretations and misidentifications when calculating Alerts, the Alerts System uses GAMs to fit a smoothed curve to the annual population indices. Changes in population size calculated using smoothed values produced by GAMs are less likely to be due to the effects of short-term fluctuations in population size, or to errors when sampling, than results produced using raw data plots. Thus, using GAMs reduces the probability that a decline from a short-lived unsustainable peak in numbers would produce an Alert. A decline from a period of sustained high numbers, however, would trigger an Alert using GAMs and clearly would be worthy of investigation. It should be noted, though, that short-term Alerts can be triggered for species showing large year-to-year population fluctuations. In these cases, knowledge of their ecology and population dynamics is essential in interpretation.

Alerts
Proportional changes in the smoothed GAM index value of a population over a series of time periods (5-year, 10-year, 25-year and 'full data set' periods) are calculated by subtracting the GAM index value at the start of this period from the GAM index value in the final winter. This value is expressed as a percentage of the index at the start of the period. Larger values therefore indicate larger proportional changes in population size, with positive values equating to relative increases in the population size and negative values equating to relative decreases over the specified time period. These values are then categorised according to their magnitude and direction. Population declines of between 25% and 50% are flagged as Medium Alerts and declines of greater than 50% as High Alerts. Similarly, population increases of between 25% and 50% can be described as Medium increases, while population increases of greater than 50% can be described as High increases. The spatial scale over which Alerts can be calculated is flexible and it is possible to calculate Alerts at national, regional or local levels (*e.g.* individual site).

Following exploratory analysis, the 'full data set' Alert was removed from the interpretations, because many of the data were missing for the first few years at many of the sites, resulting in a high proportion of imputed counts for those years. The resultant Alert would then have been based on a comparison between good quality complete data in the most recent years and largely estimated counts from the first years. The Alerts reported on here therefore cover the following three periods:

5-year:	winter 1995/96 - winter 1999/2000
10-year:	winter 1990/91 - winter 1999/2000
25-year:	winter 1975/76 - winter 1999/2000

	Region	Avocet	Barnacle Goose	Bar-tailed Godwit	Bean Goose	Bewick's Swan	Bittern	Black-tailed Godwit	Common Scoter	Coot	Cormorant	Curlew	Dark-bellied Brent Goose	Dunlin	Eider	European White-fronted Goose	Gadwall	Goldeneye	Golden Plover	Great Crested Grebe	Greenland White-fronted Goose	Greylag Goose	Grey Plover	Knot	Lapwing	Light-bellied Brent Goose	Little Egret	Little Grebe	Mallard	Mute Swan	Oystercatcher	Pink-footed Goose	Pintail	Pochard	Purple Sandpiper	Red-breasted Merganser	Redshank	Ringed Plover	Ruff	Sanderling	Scaup	Shelduck	Shoveler	Slavonian Grebe	Snipe	Teal	Tufted Duck	Turnstone	Velvet Scoter	Whooper Swan	Wigeon
Abberton Reservoir	Anglia							○		●	●						●	●	○	●					○								●	●									●	●							●
Alde-Ore Estuary	Anglia	●						●						●		●									○											●				●	●			●					●
Arun Valley	Southern					○																																			○				○				○
Avon Valley	Southern					○											○																																	
Benacre to Easton Bavents	Anglia						○																																											
Benfleet and Southend Marshes	Anglia												●	●									●	●							●						●												
Blackwater Estuary	Anglia	●						●			●	●	●	●				●	○	●			●		○								●	●		●	●	●	○			●	●			●				●
Breydon Water	Anglia	○				○		○			○			○		○			○						○																		○								○
Broadland	Anglia				○	○	○			○	○					○	○			○											○		○						○				○			○	○			○	○
Burry Inlet	Welsh							●				●		●										●						●		●									●	●							
Chesil Beach and The Fleet	Southwest												●																																					
Chew Valley Lake	Southwest																																										●							
Chichester and Langstone Harbours	Southern			●				●			●	●	●	●									●	●	○		○	●			●		●			●	●	●		●		●	●			●				●
Colne Estuary	Anglia	●						●			●		●	●					○	●			●		○											●	●				●									
Crouch and Roach Estuaries	Anglia												●																																					
Deben Estuary	Anglia	●																																																
Dengie	Anglia			●				○			●		●	●						●			●	●	○						●																			
Duddon Estuary	Northwest											●		●										●						●		●			●	●	●		●		●								
Dungeness to Pett Level	Southern					●																																				●							
Dyfi Estuary/Aber Dyfi	Welsh																				○																												
Exe Estuary	Southwest	●						●			●		●	●									●		○						●					●							○						●
Foulness	Anglia	●		●				●				●	●	●					○				●	●	○			●			●						●				●								●
Gibraltar Point	Anglia			○																			○	○							○																		
Hamford Water	Anglia	●						●					●	●					○				●		○											●	●	○			●				●					●
Holburn Lake and Moss	Northeast																					○																												
Hornsea	Northeast																●																																	
Humber Flats, Marshes and Coast	Anglia & Northeast			●			○	●			●	●	●	●				●	○				●	●	○				●		●			●		●	●		●		●			●					●
Lee Valley	Thames						○										○																									○							
Leighton Moss	Northwest						○																																											
Lindisfarne	Northeast			●					○					●	○				○			○	●	●	○	○						○					●	●				●							●	●

Table 2.1 English and Welsh SPAs and the waterbird species for which they are important.

● = species for which trends are evaluated in this report

○ = species for which trends are not evaluated.

	Region	Avocet	Barnacle Goose	Bar-tailed Godwit	Bean Goose	Bewick's Swan	Bittern	Black-tailed Godwit	Common Scoter	Coot	Cormorant	Curlew	Dark-bellied Brent Goose	Dunlin	Eider	European White-fronted Goose	Gadwall	Goldeneye	Golden Plover	Great Crested Grebe	Greenland White-fronted Goose	Greylag Goose	Grey Plover	Knot	Lapwing	Light-bellied Brent Goose	Little Egret	Little Grebe	Mallard	Mute Swan	Oystercatcher	Pink-footed Goose	Pintail	Pochard	Purple Sandpiper	Red-breasted Merganser	Redshank	Ringed Plover	Ruff	Sanderling	Scaup	Shelduck	Shoveler	Slavonian Grebe	Snipe	Teal	Tufted Duck	Turnstone	Velvet Scoter	Whooper Swan	Wigeon
Lower Derwent Valley	Northeast					●	○												○					○				●				●						○					●					●
Marazion Marsh	Southwest						○																																										
Martin Mere	Northwest					●																						●			○	●	●											●				●	●
Medway Estuaries and Marshes	Southern	●						●			●	●	●	●						●			●	○			●			●		●				●	●				●				●				●
Mersey Estuary	Northwest							●				●		●					○	●			●	○								●				●	○				●				●				●
Mersey Narrows and North Wirral Foreshore	Northwest										○			○									○	○						○						○										○			
Minsmere-Walberswick	Anglia	●					○								○																																	
Morecambe Bay	Northwest			●				●			●	●		●	○			●	○	●			●	●	○				●		●	○	●			●	●	●		●				●		●			●
North Norfolk Marshes	Anglia	●		●			○		○		●		●	●		●	●		○				●	●	○						●	○	●			●	●	○	●		●	●			●			○		●
Northumbria Coast	Northeast																																○															
Ouse Washes	Anglia					●			○		●						●								○				●				●	●				○			●				●	●		●	●
Pagham Harbour	Southern																								○								●					○										
Poole Harbour	Southwest	●						●			●	●	●	●				●							○		○						●			●	●					●	●							
Portsmouth Harbour	Southern												●																																				
Ribble and Alt Estuaries	Northwest			●		●		●	○		●	●		●					○				●	●	○						●	○	●			●	●				●				●			●	●
Rutland	Anglia									●	●						●	●		●					○			●					●												●			●
Severn	Welsh & Southwest					●						●		●		●	●						●		○				●				●	●			●	●					●	●				●
Solent and Southampton Water	Southern							●			●	●	●	●			●			●			●		○			●					●			●	●	●				●	●					●
Somerset Levels and Moors	Southwest					○											○		○						○								○					○					○		○	○			○
South West London Waterbodies	Thames																○																○															
Stodmarsh	Southern						○																																										
Stour and Orwell Estuaries	Anglia							●			●	●	●	●				●		●			●	●	○				●	●		●				●	●				●						●			●
Tamar Estuaries Complex	Southwest	●																							○		○																						
Teesmouth and Cleveland Coast	Northeast										●													●	○											●	●		●		●								
Thames Estuary and Marshes	Southern & Anglia	●						●						●		●	●						●		○			●					●			●	●				●	●							
Thanet Coast and Sandwich Bay	Southern																																														●			
The Dee Estuary	Welsh			●				●			●	●		●									●	●	○			●		●		●				●					●				●				●
The Swale	Southern	●		●				●			●	●	●	●		●	●		○				●	●	○			●		●		●				●	●				●	●			●				●
The Wash	Anglia	●		●				●			●	●	●	●		○			○				●	●	○			●	●	●	○	●				●	●		●		●						●	●	●
Traeth Lafan/Lavan Sands, Conway Bay	Welsh																													●																		
Upper Solway Flats and Marshes	Northwest		○	●							●	●		●				●	○	●			●	●	○			●		●	○	●			●	●			○	●							●		
Walmore Common	Midland					●																																											

Table 2.1 Continued.

3. SITE ACCOUNTS

3.1 Interpretation of Site Accounts

Accounts are organised firstly by EA region (from the Wales Region, anticlockwise around the coast to the Northwest Region) and secondly, within each region, alphabetically. No sites could be evaluated in the EA Thames region.

All species for which an SPA is considered important and for which data were evaluated are listed (in taxonomic order) at the beginning of each site account (*Evaluated Species* box). These species are placed into three categories following the criteria detailed in Stroud *et al.* (2001):

- Species for which a site qualifies under Article 4.1 of the EC Birds Directive (79/409/EEC) by supporting populations of international importance (usually ≥ 1% of a species' international flyway population) are highlighted in bold.

- Species for which a site qualifies under Article 4.2 of the Directive by supporting populations of national importance (usually ≥ 1% of a species' Great Britain population) are highlighted in italics.

- Other species, which form part of the waterfowl assemblages for which some sites are designated under Article 4.2 of the Directive, are listed in normal type.

Following this, species for which High and Medium Alerts have been triggered are listed. Superscript values by species' names indicate the time period for which the Alerts have been triggered (5, 10 or 25 years).

Species for which population trends could not be evaluated are then listed.

Summaries of the trends in waterbird populations are provided together with details of adverse factors occurring at each site (*Summary* section). Factors listed are taken from four sources: 'A Directory of Wetlands of International Importance' (Frazier 1999), 'An Inventory of UK Estuaries' (Buck 1977), recent WeBS Annual Reports (Cranswick *et al.* 1997, Waters *et al.* 1998, Cranswick *et al.* 1999, Pollitt *et al.* 2000, Musgrove *et al.* 2001) and from a recent report on the effects of improvements to water quality on coastal waterbird populations (Burton *et al.* 2002).

Trends in numbers are discussed in detail for those species for which the site is internationally important or nationally important or for which a High Alert has been triggered (*Details* section). Comparison is made with regional and national trends in a table included with each site account (see example below). Of particular interest are the sites that have many species of waterbird in category C (i.e. birds that are doing less well on the site than would be expected from the national or regional trend).

		National or Regional trend	
		Increasing or stable Population trend	Decreasing population trend
Site trend	Increasing or stable population trend	**A**	**B**
	Decreasing Population trend	**C**	**D**

For example, a species that had declined by 30% at the site level, but by only 8% regionally or nationally would be in category C. This is because a –8% change is considered stable, but a –30% change would trigger a Medium Alert and is thus considered a decrease.

Appendices, also organised and numbered by region and then alphabetically so as to correspond to the text, contain two further tables and graphs for each site. The first of these tables provides percentage change figures for each waterbird species for which data were evaluated and indicates whether a High Alert or a Medium Alert has been triggered, or whether the species' population was stable or has increased. The second table provides information on completeness of the data available (or 'count quality') for each species each year. If the species is indexed on 3 months and one month's data are missing, then approximately 33% of the data used to calculate the index value will have been an estimate.

Graphs are also provided in the appendices of the annual Underhill index values (lines with points) and the indices from the General Additive Models that smooth the trends in species' populations over time (continuous lines). In the former case, the index for the final year is scaled to 100. Species' graphs are ordered alphabetically. In both the tables and the graphs in the appendices, 1966 refers to the winter of 1966/67, 1967 to the winter of 1967/68 *etc*.

In the site accounts, where numbers of birds are given, these are the average monthly numbers of birds in the winter, across the months over which they are indexed, including counts that have been imputed. Averages for 'recent' winters use data from the five most recent years unless otherwise stated. A full list of the months over which each species is indexed can be found in 'A Guide to Waterbird Alerts' p.11 (Leech *et al.* 2002). These 'core' months are those when the species' numbers are considered to be most stable across the country as a whole. Clearly though, they may not be the most appropriate months for assessing the peak numbers using every single site. In some cases, a species may use one site in early winter before moving onto another neighbouring site later on as food supplies diminish. In such a case, the averages calculated by using the core indexing months will not represent peak numbers at either site.

An overview of the status of waterbird species within each region is provided in Section 4 of the report 'Conclusions and Recommendations'. This overview is used to identify sites where 'further investigation is required' and those where 'no further investigation is required', as indicated at the start of each account.

Two-letter species' codes used in the tables and appendices are listed below in Table 3.1.1.

Code	Species name	Scientific name
AV	Avocet	*Recurvirostra avosetta*
BA	Bar-tailed Godwit	*Limosa lapponica*
BS	Bewick's Swan	*Cygnus columbianus*
BW	Black-tailed Godwit	*Limosa limosa*
CA	Cormorant	*Phalacrocorax carbo*
CO	Coot	*Fulica atra*
CU	Curlew	*Numenius arquata*
DB	Dark-bellied Brent Goose	*Branta bernicla bernicla*
DN	Dunlin	*Calidris alpina*
EW	European White-fronted Goose	*Anser albifrons*
GA	Gadwall	*Anas strepera*
GG	Great Crested Grebe	*Podiceps cristatus*
GN	Goldeneye	*Bucephala clangula*
GV	Grey Plover	*Pluvialis squatarola*
KN	Knot	*Calidris canutus*
LG	Little Grebe	*Tachybaptus ruficollis*
MA	Mallard	*Anas platyrhynchos*
MS	Mute Swan	*Cygnus olor*
OC	Oystercatcher	*Haematopus ostralegus*
PO	Pochard	*Aythya ferina*
PT	Pintail	*Anas acuta*
RK	Redshank	*Tringa totanus*
RM	Red-breasted Merganser	*Mergus serrator*
RP	Ringed Plover	*Charadrius hiaticula*
SS	Sanderling	*Calidris alba*
SU	Shelduck	*Tadorna tadorna*
SV	Shoveler	*Anas clypeata*
T.	Teal	*Anas crecca*
TT	Turnstone	*Arenaria interpres*
TU	Tufted Duck	*Aythya fuligula*
WN	Wigeon	*Anas penelope*
WS	Whooper Swan	*Cygnus cygnus*

Table 3.1.1 Two-letter species' codes used in tables in site accounts and appendices.

3.2 Wales Region

3.2.1 Burry Inlet — No further investigation recommended

8 Evaluated Species: Shelduck, **Pintail**, Shoveler, **Oystercatcher**, Knot, Dunlin, Black-tailed Godwit, Curlew

High Alert: none

Medium Alert: Knot[25], Black-tailed Godwit[5] (2)

Summary

- No Alerts were triggered for the two species for which the Burry Inlet SPA is internationally important in winter – **Pintail** and **Oystercatcher**.
- Medium Alerts were triggered, however, for two other species for which the site is important.

The populations of six of the eight species for which the SPA is important are stable or increasing and thus, there is limited cause for concern at the site. The declines of Knot and Black-tailed Godwit largely match regional and national changes. Adverse factors reported at the site include habitat loss due to overgrazing of marshland and urban development and overexploitation of shellfish stocks.

Details

The Burry Inlet is a large estuarine complex between the Gower Peninsula and Llanelli in south Wales. The SPA comprises extensive mudflats, sand dunes and the largest continuous area of saltmarsh in Wales. Data were not available for the north shore of the site for wildfowl. The Upper Loughor is counted by WeBS, but is not within the SPA, and so data from this area are excluded from analyses.

Table 3.2.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Burry Inlet SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.2.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Burry Inlet SPA over the 5-year, 10-year and 25-year time periods.

Only Medium Alerts were triggered at this site – for Knot and Black-tailed Godwit, over the 25-year and 5-year time periods respectively. The trends in both species' populations largely match regional and national changes.

The internationally important population of **Pintail** at the Burry Inlet rose between the mid-1970s and late 1980s, but showed a slight decline at the beginning of the 1990s. Numbers have increased sharply since, however, and have shown overall increases of 100% or more over each of the three time periods. An average of 2,200 birds occurred in the winter of 1999/2000. Both regionally and nationally, numbers rose during the 1970s, but have declined in the last decade. Note that these figures only refer to the south side of the Bury Inlet.

The population of **Oystercatcher** showed a shallow rise to a peak of almost 20,000 birds in the winter of 1986/87. There was a slight decline in the following years, though since the winter of 1993/94, numbers have recovered. Numbers have averaged 15,000 in recent winters. Trends were positive for all three time periods. Regionally and nationally, there have been shallow declines in numbers over the last 20 and 10 years respectively, after earlier increases.

	Site trend	National trend (GB)		Regional trend (Wales)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CU, DN, KN, **OC**, **PT**, SU, SV		CU, DN, SU, SV	KN, **OC**, **PT**
	Decreasing	BW		BW	
10-year trend	Increasing or stable	BW, CU, DN, KN, **OC**, SU, SV	**PT**	BW, CU, DN, SU, SV	KN, **OC**, **PT**
	Decreasing				
25-year trend	Increasing or stable	BW, CU, **OC**, SU, SV	DN, **PT**	BW, CU, **OC**, **PT**, SU, SV	DN
	Decreasing	KN			KN

Table 3.2.1.1 Summary of comparisons between the site trend and the national and regional (EA Wales region) population trends of cited species for the Burry Inlet SPA.

3.2.2 The Dee Estuary — Further investigation recommended

15 Evaluated Species: Cormorant, **Shelduck**, Wigeon, **Teal**, Mallard, **Pintail**, **Oystercatcher**, **Grey Plover**, **Knot**, Sanderling, **Dunlin**, **Black-tailed Godwit**, *Bar-tailed Godwit*, **Curlew**, **Redshank**

High Alert: Mallard[10], **Pintail**[10], **Oystercatcher**[10], **Grey Plover**[5,10], **Knot**[5,10,25], *Bar-tailed Godwit*[5,25] (6)
Medium Alert: **Teal**[10], **Pintail**[5], **Oystercatcher**[5], Sanderling[5,10,25], **Dunlin**[25], **Redshank**[5,10] (6)

The Dee Estuary SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for seven of the 10 species for which The Dee Estuary SPA is internationally important – **Teal**, **Pintail**, **Oystercatcher**, **Grey Plover**, **Knot**, **Dunlin** and **Redshank** – those for four species being High Alerts.
- Alerts were also triggered for three other species of importance.

The populations of 10 of the 15 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is highly recommended. Further investigation should focus initially on factors such as changes in water quality resultant from improvements to waste water discharges, pollution, overexploitation of shellfish stocks and changes in recreational disturbance intensity, especially since the early 1990s, since when many of the species have been in decline.

Details

The Dee Estuary lies on the border between north Wales and England. The SPA includes extensive mudflats and saltmarsh. The Hilbre Islands in the centre of the estuary act as important waterbird roost sites and support important cliff, maritime heathland and grassland vegetation.

Table 3.2.2.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which The Dee Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Welsh regional trends are used for this comparison. Table 3.2.2.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at The Dee Estuary SPA over the 5-year, 10-year and 25-year time periods.

Shelduck numbers on The Dee Estuary rose to a peak in the mid-1980s and although they have fallen since, there has still been an overall increase in numbers over the 25-year period considered. Numbers in recent winters have averaged 1,900 birds. Regionally, numbers have shown a similar trend, whilst the national population has been more stable.

The numbers of **Teal** on the site rose through the 1980s to peaks in the winters of 1989/90 and 1991/92 of over 3,400 birds. A decline since then has resulted in a Medium Alert being triggered for the 10-year period. An average of 1,700 **Teal** occurred at the site in the winter of 1999/2000. Elsewhere regionally, numbers fell from a peak during the mid-1980s, but have begun to recover over the last 10-year period. Nationally, numbers have increased greatly over the last 25 years.

The population of Mallard using The Dee Estuary in winter rose to a peak in the mid-1980s but has since reverted to previous levels. Recently, numbers have averaged 360 birds. The decline since the 1980s has triggered a 10-year High Alert. Both regionally and nationally, populations have been in decline over the 10-year and 25-year periods.

Pintail numbers on the SPA have also been in decline since a peak in the mid-1980s, though they are still higher than they were in the mid-1970s. Numbers have averaged 3,500 birds in recent winters. A 10-year High Alert and a 5-year Medium Alert have been triggered by the decline. Regionally, numbers have increased since the 1980s, though nationally the species' population is in decline.

As with the previous two species, the numbers of **Oystercatchers** on the Dee have also declined since peaking during the 1980s, this triggering a High Alert for the 10-year period and a Medium Alert for the 5-year period. An average of 9,500 birds occurred in the winter of 1999/2000. This decline has occurred despite stability in the regional and national populations.

Numbers of **Grey Plover** on the Dee Estuary rose through the late 1970s and 1980s to a peak of over 2,100 birds in 1991/92. A decline since then has prompted High Alerts for both the 5-year and 10-year periods. An average of just 120 birds was reported in the winter of 1999/2000. Regionally, the population was in decline between the late 1970s and early 1980s, whilst nationally, the population is stable after a period of steady increase.

The population of **Knot** on the estuary has been in decline since the 1970s and High Alerts have been triggered for all three time periods considered. An average of 1,100 birds was reported in the winter of 1999/2000. Regionally, the population also declined between the early 1970s and early 1990s, though has since been more stable. Nationally, a fall in numbers during the 1970s was followed by partial recovery in the 1980s and more recent stability.

Dunlin numbers on the SPA fell from peaks during the 1970s to a low during the mid-1980s, but have since partially recovered. In the last 5 years, numbers have been stable, averaging 18,000 birds. The earlier decline has resulted in a Medium Alert being triggered for the 25-year period. This pattern follows national trends, though elsewhere within the region, numbers have fallen steadily since the early 1970s.
The population of **Black-tailed Godwit** on the Dee rose in size through the 1980s and early 1990s, though the recent 5-year trend suggests the start of a decline. An average of 950 birds was recorded in the winter of 1999/2000. Regionally and nationally, populations have risen steadily over the last 25 years.

The *Bar-tailed Godwit* population at the site declined sharply through the 1970s and after a very slight recovery during the early 1990s, has recently declined again. High Alerts have been triggered for both the 5-year and 25-year periods. Numbers in the three most recent winters have averaged 200 birds. The large decline over the 25-year period mirrors the regional trend, though nationally numbers have been more stable over this period.

Curlew numbers on the SPA have risen steadily since the mid-1970s and, in recent winters, have averaged 3,500 birds. The increasing trend mirrors the national trend, though regionally numbers have been more stable.

Redshank numbers on the estuary rose steeply in the mid-1980s to a peak of 7,300 birds in the winter of 1987/88. A moderate decline since has resulted in Medium Alerts being triggered for the 5-year and 10-year periods. The recent average of 4,100 birds is still greater than the numbers present during the 1970s and early 1980s. Regionally, numbers have been in steady decline, whilst nationally numbers have been more stable.

	Site trend	National trend (GB)		Regional trend (Wales)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**BW**, CA, **CU**, **DN**, MA, **SU**, **T.**, WN		**BW**, **CU**, **DN**, MA, **SU**, **T.**, WN	CA
	Decreasing	*BA*, **GV**, **KN**, **OC**, **PT**, **RK**, SS		*BA*, **GV**, **KN**, **OC**, **PT**, **RK**, SS	
10-year trend	Increasing or stable	*BA*, **BW**, CA, **CU**, **DN**, **SU**, WN		**BW**, CA, **CU**, **SU**, WN	*BA*, **DN**
	Decreasing	**GV**, **KN**, **OC**, **PT**, **RK**, SS, **T.**	MA	**KN**, **OC**, **PT**, SS, **T.**	**GV**, MA, **RK**
25-year trend[1]	Increasing or stable	**BW**, **CU**, **GV**, **OC**, **RK**, **SU**, **T.**, WN	MA, **PT**	**BW**, **CU**, **OC**, **PT**, **SU**, **T.**, WN	**GV**, MA, **RK**
	Decreasing	*BA*, **KN**, SS	**DN**		*BA*, **DN**, **KN**, SS

Table 3.2.2.1 Summary of comparisons between the site trend and the national and regional (EA Wales region) population trends of cited species for The Dee Estuary SPA.

[1] Cormorant data not available for this time-period.

3.2.3 Traeth Lafan / Lavan Sands, Conway Bay No further investigation recommended

1 Evaluated Species: **Oystercatcher**

High Alert: none

Medium Alert: none

Summary

- The one species present at the site at a level of international importance – **Oystercatcher** – increased in number over the 10-year time scale to recover from an earlier decline.

There is thus no cause for concern for the one species for which the SPA is important. Adverse factors on the site include recreational disturbance and possible overexploitation of shellfish stocks.

Details

The Traeth Lafan / Lavan Sands, Conway Bay SPA is a large intertidal area of sand- and mud-flats on the eastern edge of the Menai Straits. Some small areas above the high water mark counted for WeBS are outside the SPA boundary.

Table 3.2.3.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Traeth Lafan / Lavan Sands SPA is internationally important, over the 5-year, 10-year and 25-year periods. Table 3.2.3.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Traeth Lafan / Lavan Sands SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species present at the site at a level of international importance – **Oystercatcher** – decreased in number during the 1970s and 1980s, but has recovered over the last 10 years. An average of 5,900 birds occurred in the winter of 1999/2000. Regionally, numbers showed an inverse pattern, increasing during the 1970s and then decreasing in the 1990s. Nationally, numbers have shown a shallow decline over the last 10 years, though have shown a stable trend over the 25-year period.

	Site trend	National trend (GB)		Regional trend (Wales)	
		Increasing or stable	Decreasing	Increasing or stable	Decreasing
5-year trend	Increasing or stable	**OC**		**OC**	
	Decreasing				
10-year trend	Increasing or stable	**OC**			**OC**
	Decreasing				
25-year trend	Increasing or stable	**OC**		**OC**	
	Decreasing				

Table 3.2.3.1 Summary of comparisons between the site trend and the national and regional (EA Wales region) population trends of cited species for the Traeth Lafan / Lavan Sands, Conway Bay SPA.

3.3 Midlands Region

3.3.1 Walmore Common **Further investigation recommended**

1 Evaluated Species: *Bewick's Swan*

High Alert: *Bewick's Swan* [5,10] (1)

Medium Alert: *Bewick's Swan* [25] (1)

Summary

- Alerts were triggered for all three time periods for the one species for which the site is internationally important – *Bewick's Swan*.

The population of the one species for which the SPA is important has shown a decline and there is thus some cause for concern. Detailed investigation into the causes of the decline is highly recommended. No direct adverse factors have been identified from the literature for the Walmore Common SPA.

Details

The Walmore Common SPA is located in Gloucestershire, close to the Severn Estuary SPA. The SPA comprises an area of damp grassland and ditches, formed over clay soils overlying peat. The site is subject to regular winter flooding.

Table 3.3.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Walmore Common SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.3.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Walmore Common SPA over the 5-year, 10-year and 25-year time periods.

The numbers of *Bewick's Swan* at the Walmore Common SPA have fluctuated greatly from year to year, probably due to the degree of winter flooding. Despite a mean peak of 210 birds in 1989/90, there has been a declining trend over the last 25 years, this triggering a Medium Alert for the period. A fall in numbers since this peak has resulted in High Alerts being triggered for the 10-year and 5-year periods. Recent winter numbers have averaged between 5 and 94 birds. Elsewhere regionally, numbers have also fluctuated, though there have also been declines over the 10-year and 5-year periods. Nationally, numbers rose in the 1970s and early 1980s, but have fluctuated since.

	Site trend	National trend (GB)		Regional trend (Midlands)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable				
	Decreasing	*BS*			*BS*
10-year trend	Increasing or stable				
	Decreasing	*BS*			*BS*
25-year trend	Increasing or stable				
	Decreasing	*BS*		*BS*	

Table 3.3.1.1 Summary of comparisons between the site trend and the national and regional (EA Midlands region) population trends of cited species for the Walmore Common SPA.

3.4 Wales and Southwest Regions

3.4.1 Severn Estuary **Further investigation recommended**

16 Evaluated Species: *Bewick's Swan*, European White-fronted Goose, **Shelduck**, Wigeon, Gadwall, Teal, Mallard, **Pintail**, Shoveler, Pochard, Tufted Duck, Ringed Plover, Grey Plover, **Dunlin**, **Curlew**, **Redshank**

High Alert: *Bewick's Swan*[5], Mallard[10,25], Ringed Plover[25], **Dunlin**[10,25], **Curlew**[5] (5)

Medium Alert: *Bewick's Swan*[10], European White-fronted Goose[10], **Shelduck**[25], Wigeon[5], Gadwall[10], Mallard[5], **Pintail**[25], Ringed Plover[10], Grey Plover[5,10,25], **Dunlin**[5], **Curlew**[10,25], **Redshank**[10,25], (12)

The Severn Estuary SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for all five species for which the Severn Estuary SPA is internationally important – **Shelduck**, **Pintail**, **Dunlin**, **Curlew** and **Redshank**.
- Alerts were also triggered for seven further species for which the site is important.

The populations of 12 of the 16 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines, particularly those of the five species of international importance, is highly recommended. Further investigation should focus initially on factors such as habitat loss due to vegetation succession, dredging and erosion, industrial pollution, changes in water quality resultant from improvements to waste water discharges and changes in recreational disturbance intensity.

Details

The Severn Estuary SPA is located between south-west England and south Wales. The SPA comprises extensive intertidal sand- and mud-flats, rocky shores and islands, together with saltmarsh and adjacent grazing marsh. The estuary has the second highest tidal range in the world.

Table 3.4.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Severn Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Combined Wales and Southwest regional trends are used for this comparison. Table 3.4.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Severn Estuary SPA over the 5-year, 10-year and 25-year time periods.

Bewick's Swan numbers on the Severn Estuary have fluctuated greatly from year to year, though have shown a general downward trend over the 1980s and 1990s, despite a peak mean of 450 birds in 1996/97. A High Alert has been triggered for the 5-year period and a Medium Alert for the 10-year period. Numbers in the winter of 1999/2000 averaged 98 birds. Elsewhere regionally, there has also been a decline over this period. Nationally, numbers rose in the 1970s and early 1980s, but have fluctuated since.

Shelduck numbers on the Severn fell from peaks in the mid-1970s, but since the start of the following decade have steadily recovered. Numbers have averaged 2,300 in recent winters. A Medium Alert has been issued for the 25-year period, as numbers still remain below the earlier peaks. Regionally, numbers have increased slightly over the 25-year period, though nationally, numbers have been more stable.

Mallard numbers have fallen steadily on the estuary since peaks in the early 1970s. High Alerts have been triggered for the 25-year and 10-year periods and a Medium Alert for the 5-year period. Recently, numbers have averaged 630 birds. Both regionally and nationally, declines have only been apparent since the mid-1980s.

The population of **Pintail** on the Severn Estuary has also shown a slight decrease since the 1970s, triggering a Medium Alert for the species. Numbers in recent winters have averaged 330 birds. Both regionally and nationally, numbers rose during the early 1970s, but have declined over the last 10-year period.

Ringed Plover numbers on the Severn have declined steadily since the early 1970s. A High Alert has been triggered for the 25-year period and a Medium Alert for the 10-year period. Numbers have averaged just 78 in recent winters. Regionally, numbers have also fallen steadily over this period, while nationally a decline has occurred over the last decade and thus over the 25-year period as a whole.

Dunlin numbers on the estuary have also fallen over the last 25 years, despite a short-lived recovery in the late 1980s. The population using the site averaged over 18,000 birds in the winter of 1999/2000. High Alerts have been triggered for the 25-year and 10-year periods and a Medium Alert for the 5-year period. Both regionally and nationally, numbers fell during the 1970s and 1980s, but increased slightly and then stabilised in the 1990s.

The numbers of **Curlew** on the Severn rose erratically through the 1970s and 1980s, but since a peak of 4,000 birds in 1994/95 have declined sharply. Numbers averaged 1,500 in the winter of 1999/2000. Both regionally and nationally, numbers have shown a shallow increasing trend over the 25-year period.

Redshank numbers on the Severn have fluctuated from year to year, but after rising to a peak of over 2,100 birds in 1987/88, numbers declined over the following decade. Medium Alerts have been triggered for both the 10-year and 25-year periods as a result. Numbers have averaged 1,400 birds in recent winters. Elsewhere regionally, numbers have followed a similar pattern, though the overall decline over the 25-year period has been less pronounced. Nationally, numbers have risen slowly over the last 25 years.

	Site trend	National trend (GB)		Regional trend (Wales & Southwest)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	EW, GA, PO, **PT**, **RK**, RP, **SU**, SV, T., TU		GA, **PT**, **RK**, RP, **SU**, SV, T., TU	EW, PO
	Decreasing	*BS*, **CU**, **DN**, GV, MA, WN		**CU**, **DN**, MA, WN	*BS*, GV
10-year trend	Increasing or stable	PO, **SU**, SV, T., TU, WN	**PT**	PO, **SU**, SV, T., TU, WN	**PT**
	Decreasing	*BS*, **CU**, **DN**, GA, GV, **RK**	EW, MA, RP	**CU**, **DN**, GA	*BS*, EW, GV, MA, **RK**, RP
25-year trend	Increasing or stable	*BS*, GA, PO, SV, T., TU, WN	EW	GA, PO, SV, T., TU, WN	*BS*, EW
	Decreasing	**CU**, GV, MA, **RK**, **SU**	**DN**, **PT**, RP	**CU**, GV, MA, **PT**, **RK**, **SU**	**DN**, RP

Table 3.4.1.1 Summary of comparisons between the site trend and the national and regional (EA Wales & Southwest regions) population trends of cited species for the Severn Estuary SPA.

3.5 Southwest Region

3.5.1 Chesil Beach and The Fleet — No further investigation recommended

1 Evaluated Species: **Dark-bellied Brent Goose**

High Alert: none

Medium Alert: none

Summary

- The one species present at the Chesil Beach and The Fleet SPA at a level of international importance – **Dark-bellied Brent Goose** – increased in number over the 5-year and 25-year time scales (mirroring the regional and national trends).

The population of the one species cited for the SPA is increasing and thus, no further investigation into population trends at the site is required. Adverse factors reported at the site include pollution from domestic sewage and agriculture, and disturbance from military activities.

Details

The site comprises a long linear shingle beach (Chesil Beach) enclosing a saline lagoon (The Fleet). The WeBS count site includes part of Portland Harbour and the Radipole Lake and Lodmoor RSPB sites, which are outside of the SPA, but do not hold significant numbers of geese. The majority of **Dark-bellied Brent Goose** counted utilise The Fleet.

Table 3.5.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Chesil Beach and The Fleet SPA is internationally important, over the 5-year, 10-year and 25-year periods. Table 3.5.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Chesil Beach and The Fleet SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species present at the site at a level of international importance – **Dark-bellied Brent Goose** – increased in number during the 1970s and 1980s, but has decreased since a peak of 1,600 in 1991/92. An average of 650 birds has been recorded in recent winters. The earlier increase mirrors increases in the regional and national populations. More recently there have also been slight declines at the regional and national scales.

	Site trend	National trend (GB)			Regional trend (Southwest)	
		Increasing or stable	Decreasing		Increasing or stable	Decreasing
5-year trend	Increasing or stable	**DB**			**DB**	
	Decreasing					
10-year trend	Increasing or stable	**DB**			**DB**	
	Decreasing					
25-year trend	Increasing or stable	**DB**			**DB**	
	Decreasing					

Table 3.5.1.1 Summary of comparisons between the site trend and the national and regional (EA Southwest region) population trends of cited species for the Chesil Beach and The Fleet SPA.

3.5.2 Chew Valley Lake **No further investigation recommended**

1 Evaluated Species: **Shoveler**

High Alert: none

Medium Alert: **Shoveler**[10] (1)

Summary

- A Medium Alert was triggered for the last 10-year period for the one species present at the Chew Valley Lake SPA at a level of international importance – **Shoveler** – even though regional and national populations were stable. The species showed increases over the 5-year and 25-year periods, however.

The population of the one species for which the SPA is important has shown a slight decline over one time period and thus, there is some cause for concern. However, the recent trend in the numbers of **Shoveler** at the site indicates that the species' population is recovering from its earlier decline. No direct adverse factors have been identified from the literature for the Chew Valley Lake SPA.

Details

Chew Valley Lake SPA is a large, shallow, artificial reservoir, fringed by reedbeds, carr and grassland.

Table 3.5.2.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Chew Valley Lake SPA is internationally important, over the 5-year, 10-year and 25-year periods. Table 3.5.2.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Chew Valley Lake SPA over the 5-year, 10-year and 25-year time periods.

The **Shoveler** population at Chew Valley Lake showed an increasing trend between 1966/67 and 1991/92, when average numbers peaked at over 550. Thereafter, numbers fell to a low of 70 in 1994/95, but have since partially recovered (even though regionally numbers were stable). The overall decline over the recent 10-year period triggered a Medium Alert. During this period, regional and national populations remained stable. In spite of this recent decline, numbers have increased at the site over the 25-year period, this mirroring an increase in the national (though not regional) population over this time.

	Site trend	National trend (GB)		Regional trend (Southwest)	
		Increasing or stable	Decreasing	Increasing or stable	Decreasing
5-year trend	Increasing or stable	**SV**			**SV**
	Decreasing				
10-year trend	Increasing or stable				
	Decreasing	**SV**		**SV**	
25-year trend	Increasing or stable	**SV**		**SV**	
	Decreasing				

Table 3.5.2.1 Summary of comparisons between the site trend and the national and regional (EA Southwest region) population trends of cited species for the Chew Valley Lake SPA.

3.5.3 Exe Estuary **No further investigation recommended**

9 Evaluated Species: Cormorant, Dark-bellied Brent Goose, Wigeon, Red-breasted Merganser, Oystercatcher, *Avocet*, Grey Plover, Dunlin, Black-tailed Godwit

High Alert: Wigeon[25] (1)

Medium Alert: Dark-bellied Brent Goose[5,10], Oystercatcher[5,10], *Avocet*[5] (3)

The Exe Estuary SPA also supports nationally important numbers of *Slavonian Grebe* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for four species – Dark-bellied Brent Goose, Wigeon, Oystercatcher and *Avocet*. The declines of these species were not apparent regionally or nationally.

The populations of four of the nine species for which the SPA is important (and for which data were evaluated) have shown declines. However, the one species of national importance only showed a slight decline over the 5-year period and thus, there is only limited cause for concern at the site. Adverse factors reported at the site include habitat loss due to dredging, over fishing and aquaculture projects, changes in water quality resultant from improvements to waste water discharges and recreational disturbance.

Details

This SPA comprises a 10-km long estuary with a double spit across the mouth and associated saltmarshes. Some areas above the high water mark used as roosts and counted for WeBS are outside the SPA boundary.

Table 3.5.3.1 shows the summarised comparisons between the site trend and the national and regional population trends of species cited for the Exe Estuary SPA over the most recently available 5-year, 10-year and 25-year periods. Table 3.5.3.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Exe Estuary SPA over the 5-year, 10-year and 25-year time periods.

Wigeon numbers at this site have been in decline since the early 1970s, when peaks of 5,000 birds were recorded (though even then numbers fluctuated greatly from year to year). As a result of this, a High Alert was triggered for the 25-year period. This decline was not apparent regionally or nationally. More recently, there have been increases of over 50% over the 5-year and 10-year periods, indicating that numbers have partially recovered. An average of 1,700 was recorded in the winter of 1999/2000.

Avocet numbers on the Exe rose to a monthly average of 370 birds in 1991/92, but have since fluctuated. An average of just 170 was recorded in the winter of 1999/2000. A Medium Alert has been triggered due to a decline of 36% over the 5-year period, although the long-term trend in numbers is unclear. Both regionally and nationally, numbers have risen sharply since the 1970s.

	Site trend	National trend (GB)		Regional trend (Southwest)	
		Increasing or stable	Decreasing	Increasing or stable	Decreasing
5-year trend	Increasing or stable	BW, CA, DN, GV, RM, WN		BW, CA, RM, WN	DN, GV
	Decreasing	*AV*, DB, OC		*AV*, DB, OC	
10-year trend	Increasing or stable	*AV*, BW, CA, DN, GV, RM, WN		*AV*, BW, CA, RM, WN	DN, GV
	Decreasing	DB, OC		DB, OC	
25-year trend[1]	Increasing or stable	*AV*, BW, DB, GV, OC, RM	DN	*AV*, BW, DB, GV, OC, RM	DN
	Decreasing	WN		WN	

Table 3.5.3.1 Summary of comparisons between the site trend and the national and regional (EA Southwest region) population trends of cited species for the Exe Estuary SPA.

[1] Cormorant data not available for this time-period.

3.5.4 Poole Harbour — No further investigation recommended

12 Evaluated Species: Cormorant, Dark-bellied Brent Goose, **Shelduck**, Shoveler, Pochard, Goldeneye, Red-breasted Merganser, *Avocet*, Dunlin, **Black-tailed Godwit**, Curlew, Redshank.

High Alert: Pochard[10] (1)

Medium Alert: Pochard[5], **Shelduck**[5] (2)

The Poole Harbour SPA also supports nationally important numbers of *Little Egret* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for two species – **Shelduck** and Pochard, the former occurring on the Poole Harbour SPA in internationally important numbers. Both regionally and nationally, populations of these two species have remained stable over the three time periods.
- Populations of a further eight species (including **Black-tailed Godwit**) increased over the 10-year and 25-year periods, whilst Redshank and Cormorant numbers have remained stable.

The populations of just two of the 12 species for which the SPA is important (and for which data were evaluated) have shown declines. Only one of these two species occurs at the site in internationally important numbers – **Shelduck** - and despite a decline of 35% over the 5-year period, the long-term trend in its numbers is unclear. There is only limited cause for concern at this site. Adverse factors reported at the site include recreational disturbance and possible overexploitation of shellfish stocks.

Details

Poole Harbour is a bar-built estuary comprising intertidal mudflats and, away from its urbanised northern shore, fringing saltmarsh and reedbed. Some small areas above the high water mark counted for WeBS are outside the SPA boundary.

Table 3.5.4.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Poole Harbour SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.5.4.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Poole Harbour SPA over the 5-year, 10-year and 25-year time periods.

Pochard numbers at Poole Harbour rose from a mean of just 27 in 1966/67 to a peak mean of over 650 in 1985/86, but have since fluctuated markedly. An average of 280 was recorded in the winter of 1999/2000. A Medium Alert was triggered for the 5-year period and a High Alert for the 10-year period, even though, both regionally and nationally, numbers have remained stable over the three time periods.

The **Shelduck** population at Poole Harbour showed a slight increase from the 1960s until 1996/97, when numbers peaked at a mean of 4,000. A Medium Alert has been triggered due to a decline of 35% over the 5-year period, although the long-term trend in numbers is unclear. Both regionally and nationally, numbers have remained stable over the three time periods.

Avocet were only occasionally recorded at Poole Harbour in winter prior to the mid-1980s. They have become much more numerous over the last 15 years, however, and a peak mean of 650 birds was recorded in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

Black-tailed Godwit numbers at the Poole Harbour SPA have risen steadily since the early 1980s to over 1,500 in the winter of 1999/2000. Regionally, numbers have been more stable, whilst nationally, the population has risen at a slower rate.

	Site trend	National trend (GB)		Regional trend (Southwest)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, **BW**, CA, CU, DB, DN, GN, RK, RM, SV		*AV*, **BW**, CA, CU, DB, GN, RK, RM, SV	DN
	Decreasing	PO, **SU**		PO, **SU**	
10-year trend	Increasing or stable	*AV*, **BW**, CA, CU, DB, DN, GN, RK, RM, **SU**, SV		*AV*, **BW**, CA, CU, DB, GN, RK, RM, **SU**	DN, SV
	Decreasing	PO		PO	
25-year trend[1]	Increasing or stable	*AV*, **BW**, CA, CU, DB, GN, PO, RK, RM, **SU**, SV	DN	*AV*, **BW**, DB, GN, PO, RM, **SU**, SV	CU, DN, RK
	Decreasing				

Table 3.5.4.1 Summary of comparisons between the site trend and the national and regional (EA Southwest region) population trends of cited species for the Poole Harbour SPA.

[1] Cormorant data not available for this time-period.

3.5.5 Tamar Estuaries Complex — No further investigation recommended

1 Evaluated Species: *Avocet*

High Alert: none

Medium Alert: none

The Tamar Estuaries Complex SPA also supports nationally important numbers of *Little Egret* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- The *Avocet* population on this site rose by over 25% over the 5-year and 25-year periods considered, though was stable over the 10-year period. Both regionally and nationally, numbers have increased considerably over the three time periods.

There is thus no cause for concern for the one species for which the SPA is important (and for which data were evaluated). Adverse factors reported at the site include changes in water quality resultant from improvements to waste water discharges and recreational disturbance.

Details

The Tamar Estuaries Complex is a large marine inlet on the border of Devon and Cornwall, comprising the estuaries of the Rivers Tamar, Lynher and Tavy and St. John's Lake and Millbrook Lake. Some small areas above the high water mark counted for WeBS are outside the SPA boundary.

Table 3.5.5.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species considered for the Tamar Estuaries Complex SPA, over the 5-year, 10-year and 25-year periods. Table 3.5.5.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Tamar Estuaries Complex SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species for which data were evaluated – *Avocet* – increased in number by over 25% in the 5-year and 25-year periods considered, though was stable over the 10-year period. An average of 160 birds has occurred in recent winters. Both regionally and nationally, numbers have increased considerably since the 1970s.

	Site trend	National trend (GB)			Regional trend (Southwest)	
		Increasing or stable	Decreasing		Increasing or stable	Decreasing
5-year trend	Increasing or stable	*AV*			*AV*	
	Decreasing					
10-year trend	Increasing or stable	*AV*			*AV*	
	Decreasing					
25-year trend	Increasing or stable	*AV*			*AV*	
	Decreasing					

Table 3.5.5.1 Summary of comparisons between the site trend and the national and regional (EA Southwest region) population trends of cited species for the Tamar Estuaries Complex SPA.

3.6 Southern Region

3.6.1 Chichester and Langstone Harbours — Further investigation recommended

19 Evaluated Species: Little Grebe, Cormorant, **Dark-bellied Brent Goose**, Shelduck, Wigeon, Teal, Pintail, Shoveler, Red-breasted Merganser, Oystercatcher, **Ringed Plover**, **Grey Plover**, Knot, Sanderling, **Dunlin**, **Black-tailed Godwit**, *Bar-tailed Godwit*, Curlew, **Redshank**

High Alert: Shelduck[10,25], **Ringed Plover**[10], Knot[5,10], **Black-tailed Godwit**[25] (4)

Medium Alert: Cormorant[10], Shelduck[5], Oystercatcher[10], **Ringed Plover**[5], Knot[25], Sanderling[5,10], **Dunlin**[5,10,25], **Black-tailed Godwit**[10], *Bar-tailed Godwit*[5,10,25] (9)

The Chichester and Langstone Harbours SPA also supports nationally important numbers of *Little Egret* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for three of the six species for which the Chichester and Langstone Harbours SPA is internationally important. The declines of **Ringed Plover** and, to a lesser extent, **Dunlin** have tended to mirror regional and national trends. The long-term decline of **Black-tailed Godwit** at the site has occurred despite rapidly increasing regional and national populations.
- Alerts were also triggered for six other species for which the site is important.

The populations of nine of the 19 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is recommended. The decline of **Black-tailed Godwit** over the 25-year time period is of particular concern, as this has occurred at a time when regional and national populations have risen. Adverse factors reported at the site include increased urban development, dredging, erosion, eutrophication, water diversion, pollution from domestic sewage and agriculture, and recreational and wildfowling disturbance.

Details

Chichester and Langstone Harbours are two large estuaries situated at the eastern mouth of The Solent, comprising extensive mudflats and sandflats, tidal creeks and extensive Eel-grass and algae beds. The two estuaries are joined by a short channel.

Table 3.6.1.1 shows the summarised comparisons between the site trend and the national and regional population trends of species cited for the Chichester and Langstone Harbours SPA over the most recently available 5-year, 10-year and 25-year periods. Table 3.6.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Chichester and Langstone Harbours SPA over the 5-year, 10-year and 25-year time periods.

The internationally important population of **Dark-bellied Brent Goose** at the Chichester and Langstone Harbours SPA increased in size during the 1970s and early 1980s, this increase mirroring both regional and national trends. Since the early 1990s, however, there have been slight decreases in numbers at all three scales. An average of almost 13,000 birds has occurred at the site in recent winters.

The Shelduck population at the Chichester and Langstone Harbours has been in decline since a monthly average of over 9,300 birds in 1969/70. The recent population averages 1,100-1,300 birds. The decline has resulted in High Alerts being triggered for the 10-year and 25-year periods and a

Medium Alert for the 5-year period. This decline has occurred despite recent stability in the regional and national populations after a period of steady increase.

The **Ringed Plover** population at the SPA increased from a mean of 89 in 1969/70 to a monthly average of 1,400 birds in 1989/90. Since then, numbers have fallen almost to their previous levels, this triggering a High Alert for the 10-year period and a Medium Alert for the 5-year period. The decline over the last decade mirrors both regional and national trends and thus the cause may not be site-specific.

The internationally important population of **Grey Plover** at the Chichester and Langstone Harbours SPA has increased greatly in size over the 25-year time scale, this increase mirroring both regional and national trends. Numbers have fluctuated since the late 1980s, however. An average of 2,700 birds has been recorded in recent winters.

Knot numbers at the SPA increased to an initial peak in the mid-1970s before increasing again to a mean of over 4,700 birds in the early 1990s. A large decline since this second peak has resulted in High Alerts being triggered for the 10-year and 5-year periods and a Medium Alert for the 25-year period. The decline has occurred despite stable regional and national populations over the three time periods.

Numbers of **Dunlin** at the site peaked in the early 1970s and again in the late 1980s before then declining. The recent population averages over 28,000 birds. Medium Alerts were triggered for the species for each of the three time periods. The decline over the 25-year period mirrors both regional and national trends. Whilst regional numbers have also declined over the 5-year and 10-year periods, however, the national population has been stable. The decline in the **Dunlin** population at the site, therefore, may not be related to site-specific factors.

Black-tailed Godwit numbers at the Chichester and Langstone Harbours SPA peaked in the early 1970s and then, again, in the mid-1980s. A decline since then has triggered a High Alert for the 25-year period and a Medium Alert for the 10-year period. The population recently has averaged 400 birds. The decline over the 10-year and 25-year periods has occurred despite rapidly increasing regional and national populations.

The numbers of *Bar-tailed Godwit* at the site rose during the early 1970s to a peak of 1,800 in 1976/77. A period of relative stability followed, but in the last five years, numbers have fallen sharply to an average of 410 birds in the winter of 1999/2000. This has resulted in Medium Alerts being triggered for the 5-year, 10-year and 25-year periods. Regionally and nationally, numbers have been stable over the last 25 years.

The internationally important population of **Redshank** at the Chichester and Langstone Harbours SPA has remained stable over the time periods considered, largely mirroring regional and national trends (though the regional population did decline over the 10-year period). An average of 1,600 birds has occurred in recent winters.

	Site trend	National trend (GB)		Regional trend (Southern)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**BW**, CA, CU, **DB**, **GV**, LG, OC, PT, **RK**, RM, SV, T., WN		**BW**, CA, CU, **DB**, **GV**, LG, OC, PT, **RK**, RM, SV, T., WN	
	Decreasing	*BA*, **DN**, KN, **RP**, SS, SU		*BA*, KN, **RP**, SS, SU	**DN**
10-year trend	Increasing or stable	CU, **DB**, **GV**, LG, **RK**, RM, SV, T., WN	PT	CU, **GV**, LG, PT, RM, SV, T., WN	**DB**, **RK**
	Decreasing	*BA*, **BW**, CA, **DN**, KN, OC, SU, SS	**RP**	*BA*, **BW**, CA, KN, OC, SS, SU	**DN**, **RP**
25-year trend[1]	Increasing or stable	CU, **DB**, **GV**, OC, **RK**, RM, SS, SV, T., WN	PT, **RP**	CU, **DB**, **GV**, OC, PT, **RK**, RM, **RP**, SS, SV, T., WN	
	Decreasing	*BA*, **BW**, KN, SU	**DN**	*BA*, **BW**, KN, SU	**DN**

Table 3.6.1.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for the Chichester and Langstone Harbours SPA.

[1] Cormorant and Little Grebe data were not available for this time-period.

3.6.2 Dungeness to Pett Level **No further investigation recommended**

2 Evaluated Species: *Bewick's Swan*, **Shoveler**

High Alert: none

Medium Alert: *Bewick's Swan*[5] (1)

Summary

- The population of the one species for which the Dungeness to Pett Level SPA is internationally important – **Shoveler** – is currently stable.
- A Medium Alert was triggered for the 5-year period for *Bewick's Swan.* Unusually high numbers of this species occurred at the site in 1977/78 and 1980/81, but more recently numbers have fluctuated at much lower levels and in some years the species has been absent.

There is thus no cause for concern for the one species for which the SPA is internationally important. The Alert triggered for *Bewick's Swan* is likely to be a result of natural fluctuations in the numbers of the species at the site. No direct adverse factors have been identified from the literature for the Dungeness to Pett Level SPA.

Details

This site is made up of three main areas. Dungeness comprises a wide variety of coastal habitats, including single beaches, gravel pits and other freshwater wetlands. The Rye Harbour and Saltings and Camber Sands area comprises saltmarsh, mudflats and sandflats, as well as a small shingle beach. In addition, grazing marsh is found at both Rye Harbour and the adjacent Pett Level.

Table 3.6.2.1 shows the summarised comparisons between the site trend and the national and regional population trends for the two species for which the Dungeness to Pett Level SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.6.2.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Dungeness to Pett Level SPA over the 5-year, 10-year and 25-year time periods.

Numbers of *Bewick's Swan* at the Dungeness to Pett Level SPA have varied greatly over time. Unusually high means of 66 birds occurred in both 1977/78 and 1980/81, but since then numbers have fluctuated at much lower levels and in some years the species has been absent. An average of just 6 birds was present in the winter of 1999/2000. A Medium Alert was triggered for the 5-year period, though there is no long-term trend apparent in the species' numbers at the site.

The population of the one species present at the site at a level of international importance – **Shoveler** – increased through the 1980s and has since been stable. An average of 290 birds has occurred in recent winters. This pattern closely mirrored the regional and national trends.

	Site trend	National trend (GB)		Regional trend (Southern)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**SV**		**SV**	
	Decreasing	*BS*		*BS*	
10-year trend	Increasing or stable	*BS*, **SV**		*BS*, **SV**	
	Decreasing				
25-year trend	Increasing or stable	*BS*, **SV**		*BS*, **SV**	
	Decreasing				

Table 3.6.2.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for the Dungeness to Pett Level SPA.

3.6.3 Medway Estuary and Marshes — Further investigation recommended

16 Evaluated Species: Little Grebe, Great Crested Grebe, Cormorant, **Dark-bellied Brent Goose**, **Shelduck**, Wigeon, Teal, **Pintail**, Oystercatcher, *Avocet*, **Ringed Plover**, **Grey Plover**, **Dunlin**, **Black-tailed Godwit**, Curlew, **Redshank**

High Alert: Little Grebe[5,10], Great Crested Grebe[10], **Shelduck**[10], Wigeon[10,25], **Pintail**[25], **Ringed Plover**[5,10], **Dunlin**[5,10], **Redshank**[10] (8)

Medium Alert: Great Crested Grebe[5], Cormorant[10], **Dark-bellied Brent Goose**[5,10], **Shelduck**[5], Teal[10], **Pintail**[10], **Grey Plover**[10], Curlew[10], **Redshank**[5] (9)

The Medway Estuary and Marshes SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for seven of the eight species for which the Medway Estuary and Marshes SPA is internationally important. For five of these species High Alerts were triggered.
- Alerts were also triggered for various time periods for six other species for which the site is also important.
- The majority of Alerts were triggered for the 5-year and 10-year periods.

The populations of 13 of the 16 species for which the SPA is important have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is highly recommended. Further investigation should focus initially on factors such as habitat loss due to urban development (e.g. at Lappel Bank), dredging and erosion, changes in water quality resultant from improvements to waste water discharges and changes in recreational disturbance intensity, especially since the early 1990s, since when many of the species have been in decline.

Details

The Medway Estuary feeds into the south side of the outer Thames Estuary and forms a single tidal system with The Swale Estuary. The site has complex tidal channels, draining areas of saltmarsh and grazing marsh that are also included in the SPA.

Table 3.6.3.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Medway Estuary and Marshes SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.6.3.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Medway Estuary and Marshes SPA over the 5-year, 10-year and 25-year time periods.

Little Grebe numbers at the Medway Estuary and Marshes SPA rose to peaks of 33 and 34 birds in 1989/90 and 1995/96, respectively. A declining trend since 1989/90, however, has triggered High Alerts for both the 5-year and 10-year periods. This decline has occurred despite steady increases in the regional and national populations.

Great Crested Grebe numbers at the SPA have followed a similar pattern to those of Little Grebe, peaking in 1989/90 at 110 birds and then again in 1995/96. A declining trend since has resulted in a 10-year High Alert and a 5-year Medium Alert being triggered. As with the previous species, this decline has occurred despite increases in the regional and national populations.

Numbers of **Dark-bellied Brent Geese** at the site increased though the 1970s and 1980s to a peak of 3,700 birds in 1990/91. A decline since then has triggered Medium Alerts for both the 5-year and 10-year periods. An average of 1,800 birds was recorded in the winter of 1999/2000. The earlier increase mirrors increases in the regional and national populations. More recently there have also been slight declines at the regional and national scales.

The **Shelduck** population at the Medway Estuary has fluctuated greatly since the 1960s, though showed a clear peak in the early 1990s and a decline since. This has triggered a 10-year High Alert and a 5-year Medium Alert. An average of 2,100 birds was recorded in the winter of 1999/2000. The decline over these periods has occurred whilst regional and national populations have been stable.

Wigeon numbers have also fluctuated greatly at the site, but have shown a long-term declining trend since the early 1970s. This has resulted in High Alerts being triggered for the 10-year and 25-year periods. An average of 2,400 birds has occurred in recent winters. The decline has occurred despite increases in the regional and national populations.

Pintail rose in number at the site to a peak in the early 1970s before then declining. A further, smaller peak occurred in the late 1980s, before numbers fell again. A Medium Alert has been triggered for the species for the 10-year period and a High Alert for the 25-year period. An average of 360 birds has occurred in recent winters. These long-term declines have occurred at a time when the regional population has risen steadily, though nationally, numbers have also fallen since the 1980s.

Avocet were only occasionally recorded on the Medway Estuary and Marshes in winter prior to the mid-1980s. Their occurrence has become more frequent over the last decade, however, and a peak mean of 240 birds was recorded in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

Ringed Plover numbers at the Medway Estuary rose to peaks in the late 1980s and early 1990s, before then declining. The decline has triggered High Alerts for both the 5-year and 10-year periods. Numbers recently have averaged 250 birds. The decline over this 10-year period mirrors both the regional and national trends.

Grey Plover rose in number from relatively low levels to a peak of 5,700 birds in 1989/90. A fluctuating decline since has triggered a Medium Alert for the 10-year period. More recently, numbers have averaged 1,500 birds. The decline has occurred despite increases in the regional and national populations up until the mid-1990s.

Dunlin numbers at the site also peaked in the early 1990s, after a long period of increase, before then declining. Numbers have recently averaged around 10,000 birds. The decline has triggered High Alerts for both the 5-year and 10-year periods. The decline has occurred in a 10-year period when the national population has been largely stable, though when the regional population has also been falling in size.

The population of **Black-tailed Godwit** at the site has risen in size since the mid-1970s, peaking at 510 birds in 1995/96. Recently, however, there have been large fluctuations in numbers from year to year. The rise in the species' population at the site mirrors regional and national trends.

The **Redshank** population at the Medway Estuary also rose to a peak in the early 1990s, but has subsequently declined. Numbers have recently averaged over 1,300 birds. The decline has occurred even though regional and national populations have been stable.

	Site trend	National trend (GB)		Regional trend (Southern)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, **BW**, CA, CU, **GV**, OC, **PT**, T., WN		*AV*, **BW**, CA, CU, **GV**, OC, **PT**, T., WN	
	Decreasing	**DB**, **DN**, GG, LG, **RK**, **RP**, **SU**		**DB**, **DN**, GG, LG, **RK**, **RP**, **SU**	
10-year trend	Increasing or stable	*AV*, **BW**, OC		*AV*, **BW**, OC	
	Decreasing	CA, CU, **DB**, **DN**, GG, **GV**, LG, **RK**, **SU**, T., WN	**PT**, **RP**	CA, CU, **DB**, GG, **GV**, LG, **PT**, **RK**, **SU**, T., WN	**DN**, **RP**
25-year trend[1]	Increasing or stable	*AV*, **BW**, CU, **DB**, **GV**, OC, **RK**, **SU**	**DN**, **RP**	*AV*, **BW**, CU, **DB**, **GV**, OC, **RK**, **RP**, **SU**	**DN**
	Decreasing	**PT**, WN		**PT**, WN	

Table 3.6.3.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for the Medway Estuary and Marshes SPA.

[1] Little Grebe, Great Crested Grebe, Cormorant and Teal data not available for this time-period.

3.6.4 Pagham Harbour — No further investigation recommended

1 Evaluated Species: **Pintail**

High Alert: none

Medium Alert: none

The Pagham Harbour SPA also supports nationally important numbers of *Ruff* in winter (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- The one species present at the Pagham Harbour SPA at a level of international importance – **Pintail** – has increased greatly in number over the 10-year and 25-year time scales.

There is thus no cause for concern for the one species for which the SPA is important (and for which data were evaluated). Adverse factors that have been reported at the site include pollution from domestic sewage.

Details

Pagham Harbour is an estuarine basin on the south coast of England, comprising extensive mudflats and saltmarsh. The SPA also includes surrounding lagoons, shingle, open water, reedbeds and wet grassland.

Table 3.6.4.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species considered for the Pagham Harbour SPA, over the 5-year, 10-year and 25-year periods. Table 3.6.4.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Pagham Harbour SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species for which data were evaluated, and which occurs in internationally important numbers at the site – **Pintail** – increased in number by over 647% in 25-year period considered. An average of 430 birds has occurred over the three most recent winters. This increase has occurred despite a decrease in the national population over the same period.

	Site trend	National trend (GB)		Regional trend (Southern)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**PT**		**PT**	
	Decreasing				
10-year trend	Increasing or stable		**PT**	**PT**	
	Decreasing				
25-year trend	Increasing or stable		**PT**	**PT**	
	Decreasing				

Table 3.6.4.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for the Pagham Harbour SPA.

3.6.5 Portsmouth Harbour — No further investigation recommended

1 Evaluated Species: **Dark-bellied Brent Goose**

High Alert: none

Medium Alert: none

Summary

- The one species present at the Portsmouth Harbour SPA at a level of international importance – **Dark-bellied Brent Goose** – increased greatly in number over the 25-year time scale (mirroring the regional and national trends).

There is thus no cause for concern for the one species for which the SPA is important. Adverse factors reported at the site include habitat loss from dredging and eutrophication.

Details

Portsmouth Harbour is a large, industrialised estuary on the south coast of England that includes large expanses of mudflat, tidal creeks and extensive Eel-grass and algae beds. The estuary is narrowly connected to the sea via The Solent.

Table 3.6.5.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Portsmouth Harbour SPA is internationally important, over the 5-year, 10-year and 25-year periods. Table 3.6.5.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Portsmouth Harbour SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species present at the site at a level of international importance – **Dark-bellied Brent Goose** – increased in number over the 25-year time scale, this mirroring both regional and national trends. As at these larger scales, however, there has been a slight decrease in numbers since a peak in the early 1990s. Recent winter numbers have averaged 2,000 birds.

	Site trend	National trend (GB)		Regional trend (Southern)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**DB**		**DB**	
	Decreasing				
10-year trend	Increasing or stable	**DB**		**DB**	
	Decreasing				
25-year trend	Increasing or stable	**DB**		**DB**	
	Decreasing				

Table 3.6.5.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for the Portsmouth Harbour SPA.

3.6.6 Solent and Southampton Water — Further investigation recommended

17 Evaluated Species: Little Grebe, Great Crested Grebe, Cormorant, **Dark-bellied Brent Goose**, Shelduck, Wigeon, Gadwall, **Teal**, Pintail, Shoveler, Red-breasted Merganser, **Ringed Plover**, Grey Plover, Dunlin, **Black-tailed Godwit**, Curlew, Redshank

High Alert: **Ringed Plover**[5,10,25] (1)

Medium Alert: Shelduck[5], Grey Plover[5], Dunlin[25], Redshank[10,25] (4)

The Solent and Southampton Water SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for just one of the four species for which the Solent and Southampton Water SPA is internationally important - Ringed Plover. Numbers of this species have fallen sharply in the last decade, triggering High Alerts for each of the three time periods.
- Medium Alerts were also triggered for various time periods for four other species, for which the site is important.

The populations of five of the 17 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. The decline of Ringed Plover is of particular concern and further investigation is required to determine whether any site-related factors are influencing this. Adverse factors reported at the site include habitat loss due urban development, dredging and erosion, industrial pollution, changes in water quality resultant from improvements to waste water discharges and disturbance.

Details

The Solent and Southampton Water SPA comprises a series of estuaries and harbours extending from between Hurst Spit to Hill Head in Hampshire and from Yarmouth to Whitecliff Bay on the north coast of the Isle of Wight. Habitats include mudflats, saltmarsh, saline lagoons, shingle beaches, reedbeds, damp woodland and grazing marsh. The site excludes Portsmouth Harbour, and Chichester and Langstone Harbours, which form separate SPAs.

Table 3.6.6.1 shows the summarised comparisons between the site trend and the national and regional population trends of species cited for the Solent and Southampton Water SPA over the most recently available 5-year, 10-year and 25-year periods. Table 3.6.6.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Solent and Southampton Water SPA over the 5-year, 10-year and 25-year time periods.

The internationally important population of **Dark-bellied Brent Goose** at the Solent and Southampton Water SPA has increased in size over the 25-year time scale, this increase closely mirroring both regional and national trends. There has been a slight decrease in numbers since the early 1990s, however, numbers averaging 5,900 birds in the five most recent winters.

Teal numbers at the SPA have also risen steadily since 1969/70, this rise mirroring both regional and national trends. Recent winter numbers have averaged over 1,200.

Ringed Plover numbers have fallen sharply in the last decade, triggering High Alerts for each of the three time periods. Smaller declines have also been observed regionally for the 5-year and 10-year

periods, and nationally over the 10-year and 25-year periods. Numbers have recently averaged 200 birds.

As at many other south coast sites, **Black-tailed Godwit** have risen in number at the Solent and Southampton Water SPA since the early 1970s. Numbers have fluctuated in the last five years, however, averaging 650 birds. The rise mirrors increases both regionally and nationally.

	Site trend	**National trend (GB)**		**Regional trend (Southern)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**BW**, CA, CU, **DB**, DN, GA, GG, LG, PT, RK, RM, SV, **T.**, WN		**BW**, CA, CU, **DB**, GA, GG, LG, PT, RK, RM, SV, **T.**, WN	DN
	Decreasing	GV, **RP**, SU		GV, SU	**RP**
10-year trend	Increasing or stable	**BW**, CA, CU, **DB**, DN, GA, GG, GV, LG, RM, SU, SV, **T.**, WN	PT	**BW**, CA, CU, **DB**, GA, GG, GV, LG, PT, RM, SV, **T.**, WN	DN, SU
	Decreasing	RK	**RP**		RK, **RP**
25-year trend[1]	Increasing or stable	**BW**, CA, CU, **DB**, GA, GV, RM, SU, SV, **T.**, WN	PT	**BW**, CU, **DB**, GA, GV, PT, RM, SU, SV, **T.**, WN	
	Decreasing	RK	DN, **RP**	RK, **RP**	DN

Table 3.6.6.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for the Solent and Southampton Water SPA.

[1] Little Grebe, Great Crested Grebe and Cormorant data not available for this time-period.

3.6.7 Thanet Coast and Sandwich Bay — No further investigation recommended

1 Evaluated Species: **Turnstone**

High Alert: none

Medium Alert: **Turnstone**[10] (1)

Summary

- The one species present at the Thanet Coast and Sandwich Bay SPA at a level of international importance – **Turnstone** – increased greatly in number over the 25-year time scale. A slight recent decline, however, has triggered a 10-year Medium Alert. This pattern of change mirrors both regional and national trends.

The recent decline of **Turnstone** at the SPA matches both regional and national trends and thus, there is only limited concern at this site. Adverse factors reported as occurring on parts of the site include overgrazing, changes in water quality resultant from improvements to waste water discharges, water diversion and disturbance.

Details

The Thanet Coast and Sandwich Bay SPA includes the non-estuarine shore of the Thanet coast from Whitstable to Broadstairs, the estuarine sandflats of Sandwich Bay and the inland Worth Marshes. WeBS counts of the area exclude the coast at Broadstairs and Worth Marshes. The Thanet Coast is the most important part of the SPA for **Turnstone**.

Table 3.6.7.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Thanet Coast and Sandwich Bay SPA is internationally important, over the 5-year, 10-year and 25-year periods. Table 3.6.7.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Thanet Coast and Sandwich Bay SPA over the 5-year, 10-year and 25-year time periods.

The average numbers of **Turnstone** recorded on the site by WeBS counts increased sharply between the early 1970s and late 1980s, but have since shown a slight decline, this resulting in a 10-year Medium Alert. An average of 750 birds has occurred in recent winters. The recent decline mirrors both regional and national trends.

	Site trend	National trend (GB)		Regional trend (Southern)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**TT**		**TT**	
	Decreasing				
10-year trend	Increasing or stable				
	Decreasing		**TT**		**TT**
25-year trend	Increasing or stable	**TT**		**TT**	
	Decreasing				

Table 3.6.7.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for the Thanet Coast and Sandwich Bay SPA.

3.6.8 The Swale — No further investigation recommended

20 Evaluated Species: Little Grebe, Cormorant, European White-fronted Goose, Dark-bellied Brent Goose, Shelduck, Wigeon, Gadwall, Teal, **Pintail**, **Shoveler**, Oystercatcher, *Avocet*, Ringed Plover, **Grey Plover**, **Knot**, Dunlin, **Black-tailed Godwit**, *Bar-tailed Godwit*, Curlew, **Redshank**

High Alert: Cormorant[10], European White-fronted Goose[10] (2)

Medium Alert: European White-fronted Goose[5], Dark-bellied Brent Goose[10], **Pintail**[5], **Knot**[5], *Bar-tailed Godwit*[25] (5)

The Swale SPA also supports nationally important numbers of *Golden Plover* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered. Alerts could not be calculated for the 25-year period for grebes, cormorants and wildfowl at this site due to an absence of data.

Summary

- Medium Alerts were triggered for two of the six species for which The Swale SPA is internationally important – **Pintail** and **Knot**.
- Alerts were also triggered for four other species for which the site is important.

The populations of six of the 20 species for which the SPA is important (and for which data were evaluated) have shown declines. However, no High Alerts were triggered for species of national or international importance and thus, there is limited cause for concern at the site. Adverse factors reported at the site include habitat loss due to land-claim and erosion, changes in water quality resultant from improvements to waste water discharges and changes in recreational disturbance intensity.

Details

The Swale SPA is located at the mouth of the Thames Estuary and forms a single tidal system with the Medway Estuary. The site comprises extensive mudflats with complex tidal channels, musselbeds, large areas of saltmarsh and large grazing marshes.

Table 3.6.8.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which The Swale SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.6.8.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at The Swale SPA over the 5-year, 10-year and 25-year time periods.

Cormorant numbers at The Swale have fallen since a peak in the early 1990s. Recent numbers have averaged 94 birds. The decline has triggered a High Alert for the 10-year period. Regionally and nationally, numbers rose over the 10-year period, though have been more stable in the last 5 years.

Numbers of European White-fronted Goose at the site rose during the 1980s, but have shown a downward trend since. A High Alert has been triggered for the 10-year period and a Medium Alert for the 5-year period. An average of 440 birds was recorded in the winter of 1999/2000. Both regionally and nationally, populations showed slight declines after the mid-1980s, though have recently become more stable.

The **Pintail** population at The Swale rose to a peak in the early 1990s, but have since fallen. Numbers recently have averaged 280 birds. A Medium Alert was triggered for the 5-year period. This decline has occurred at a time when the regional population has risen steadily, though nationally, numbers have been falling since the 1980s.

The population of **Shoveler** at the site fell after a peak in the mid-1980s, but has since been relatively stable in size. Recently, numbers have averaged 140 birds. Regionally and nationally, populations have increased steadily over the last 25 years.

Avocet were rarely recorded at The Swale until the 1990s. They have become much more numerous over the last decade, however, and a peak mean of 180 birds was recorded in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

Grey Plover have increased greatly in number at the site over both the 10-year and 25-year periods. Numbers recently have averaged 1,800 birds. Both regionally and nationally, populations increased up until the mid-1990s.

Numbers of **Knot** using The Swale have fluctuated greatly from year to year. An upward trend in numbers until a peak of 5,400 birds in 1996/97 has been followed by a recent apparent decline, however. A Medium Alert has thus been triggered for the 5-year period. Regionally, there has been a slight increase in numbers over the last 5-year and 10-year periods, whilst nationally numbers have been more stable.

The population of **Black-tailed Godwit** on The Swale has risen steeply from very low numbers prior to the mid-1980s. Numbers in the last winter of 1999/2000 averaged over 900 birds. The rise in the species numbers at the site mirrors the national trend, though elsewhere regionally, numbers have been more stable.

The numbers of *Bar-tailed Godwit* on The Swale have fluctuated greatly from year to year. There was a downward trend through the 1970s and early 1980s, however, after which numbers partially recovered. An average of 390 birds has occurred in recent winters. Regionally, numbers rose sharply in the 1970s, but after a long period of relative stability have decreased in the last 5 years. Nationally, the population trend has been more stable.

The trend in the numbers of **Redshank** on The Swale has been stable over all three time periods considered, though there were considerable fluctuations in numbers in the 1980s. An average of 1,100 birds has occurred in recent winters. Regionally, there has been a fall in numbers since peaks in the late 1980s. Nationally, however, numbers have been more stable.

	Site trend	National trend (GB)		Regional trend (Southern)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, *BA*, **BW**, CA, CU, DB, DN, GA, **GV**, LG, OC, **RK**, RP, SU, **SV**, T., WN		*AV*, **BW**, CA, CU, DB, GA, **GV**, LG, OC, **RK**, **SV**, T., WN	*BA*, DN, RP, SU
	Decreasing	EW, **KN**, **PT**		EW, **KN**, **PT**	
10-year trend	Increasing or stable	*AV*, *BA*, **BW**, CU, DN, GA, **GV**, **KN**, LG, OC, **RK**, SU, **SV**, T., WN	**PT**, RP	*AV*, **BW**, CU, GA, **GV**, **KN**, LG, OC, **PT**, **SV**, T., WN	*BA*, DN, **RK**, RP, SU
	Decreasing	CA, DB	EW	CA, DB, EW	
25-year trend[1]	Increasing or stable	*AV*, **BW**, CU, **GV**, **KN**, OC, **RK**	DN, RP	*AV*, **BW**, CU, **GV**, **KN**, OC, **RK**, RP	DN
	Decreasing	*BA*			*BA*

Table 3.6.8.1 Summary of comparisons between the site trend and the national and regional (EA Southern region) population trends of cited species for The Swale SPA.

[1] Little Grebe, Cormorant, European White-fronted Goose, Dark-bellied Brent Goose, Shelduck, Wigeon, Gadwall, Teal, **Pintail** and **Shoveler** data not available for this time-period.

3.7 Anglian and Southern Regions

3.7.1 Thames Estuary and Marshes — No further investigation recommended

12 Evaluated Species: Little Grebe, European White-fronted Goose, Shelduck, Gadwall, Pintail, Shoveler, *Avocet*, **Ringed Plover**, Grey Plover, Dunlin, Black-tailed Godwit, Redshank

High Alert: European White-fronted Goose[10,25], Pintail[5,10], Redshank[10] (3)

Medium Alert: Little Grebe[5], Shelduck[10], Shoveler[10], **Ringed Plover**[5], Redshank[5] (5)

The Thames Estuary and Marshes SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered. Alerts could not be calculated for the 25-year period for waders at this site due to an absence of data.

Summary

- A Medium Alert was triggered for **Ringed Plover**, the one species of international importance on the Thames Estuary and Marshes SPA.
- Alerts were also triggered for seven other species for which the site is important.

The populations of seven of the 12 species for which the SPA is important (and for which data were evaluated) have shown declines. However, only a Medium Alert has been triggered for the one species of international importance (and no Alerts for the other species of national importance) and thus, there is only limited cause for concern at the site. Adverse factors reported at the site include habitat loss and degradation due to urban development and waste disposal, changes in water quality resultant from improvements to waste water discharges and changes in recreational disturbance intensity.

Details

The Thames Estuary and Marshes SPA includes Mucking Flats and Marshes on the north side of the estuary and extensive intertidal areas, brackish grazing marsh, some saltmarsh and flooded clay and chalk pits on the south side of the estuary.

Table 3.7.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Thames Estuary and Marshes SPA is important, over the 5-year, 10-year and 25-year periods. Combined Anglian and Southern regional trends are used for this comparison. Table 3.7.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Thames Estuary and Marshes SPA over the 5-year, 10-year and 25-year time periods.

The population of European White-fronted Goose on the Thames Estuary and Marshes SPA has been declining since a peak of 1,200 birds in 1968/69. An average of just 26 birds was recorded in the last winter of 1999/2000. High Alerts were triggered for both the 10-year and 25-year periods. Elsewhere regionally, numbers increased between the 1970s and late 1980s, but have declined in the last decade. Nationally, the population also declined after a peak in the late 1960s. Since a period of stability in the late 1970s and 1980s, however, there has been a further slight decline over the last decade.

Pintail numbers at the Thames Estuary and Marshes rose to a peak of 270 birds in 1987/88, before subsequently declining. An average of just 27 has been recorded in the three most recent winters. High Alerts were triggered for both the 5-year and 10-year periods. Elsewhere, regionally, numbers have also fallen since a peak in the late 1980s while, nationally, numbers have been falling since the early 1980s.

Avocet were rarely recorded at the Thames Estuary and Marshes until the late 1980s. They have become much more numerous over the last decade, however, and a peak mean of 260 birds was recorded in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

Ringed Plover numbers at the site rose to a peak of 320 birds in 1991/92, but declined sharply in the following five years. An average of just 73 birds has been recorded in recent winters. The decline has resulted in a Medium Alert for the 5-year period. Both regionally and nationally, numbers have also declined over the last 10-year period (though less sharply).

Redshank have also declined in number at the Thames Estuary and Marshes in the last decade, numbers in recent winters averaging 590 birds. A High Alert was triggered for the 10-year period and a Medium Alert for the 5-year period. Both regionally and nationally, there have been slight increases in numbers over the last 25 years.

	Site trend	**National trend (GB)**		**Regional trend (Anglian & Southern)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, BW, DN, EW, GA, GV, SU, SV		*AV*, BW, DN, GA, GV, SV	EW, SU
	Decreasing	LG, PT, RK, **RP**		LG, PT, RK, **RP**	
10-year trend	Increasing or stable	*AV*, BW, DN, GA, GV, LG	**RP**	*AV*, BW, DN, GA, GV, LG	**RP**
	Decreasing	RK, SU, SV	EW, PT	RK, SV	EW, PT, SU
25-year trend[1]	Increasing or stable	GA, SU, SV	PT	GA, PT, SU, SV	
	Decreasing	EW		EW	

Table 3.7.1.1 Summary of comparisons between the site trend and the national and regional (EA Anglian & Southern regions) population trends of cited species for the Thames Estuary and Marshes SPA.

[1] Little Grebe, *Avocet*, **Ringed Plover**, Grey Plover, Dunlin, Black-tailed Godwit and Redshank data not available for this time-period.

3.8 Anglian Region

3.8.1 Abberton Reservoir — Further investigation recommended

11 Evaluated Species: Great Crested Grebe, Cormorant, Wigeon, **Gadwall**, **Teal**, Pintail, **Shoveler**, Pochard, Tufted Duck, Goldeneye, Coot

High Alert: Wigeon[5,10,25], **Gadwall**[10], Pintail[5,10,25], Coot[10] (4)

Medium Alert: **Gadwall**[5], **Teal**[5], **Shoveler**[5,10], Tufted Duck[10,25], Coot[5] (5)

The Abberton Reservoir SPA also supports nationally important numbers of *Golden Plover* in winter and is also cited for Lapwing and Black-tailed Godwit (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for all three species for which the Abberton Reservoir SPA is internationally important in winter – a High Alert for **Gadwall** over the 10-year time period and Medium Alerts for **Teal** and **Shoveler**.
- Alerts were also triggered for four species for which the site is important.

The populations of seven of the 11 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Further investigation is needed to understand whether the recent declines observed for some species are likely to be maintained or whether they are merely part of natural fluctuations. Investigation should focus particularly on the declines of the three species of international importance on the site: **Gadwall**, **Teal** and **Shoveler**. No direct adverse factors have been identified from the literature for the Abberton Reservoir SPA.

Details

Abberton Reservoir is a large, shallow freshwater storage reservoir close to the Essex coast. It holds important concentrations of wildfowl in winter and also acts as a roost area for birds from nearby estuaries.

Table 3.8.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Abberton Reservoir SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Abberton Reservoir SPA over the 5-year, 10-year and 25-year time periods.

Wigeon numbers at Abberton Reservoir have shown great fluctuations from year to year. However, since rising to peaks of 12,000 and 10,000 in 1978/79 and 1985/86 respectively, there has been a downward trend in numbers and this has resulted in High Alerts being triggered for the 5-year, 10-year and 25-year periods. An average of 680 occurred in the winter of 1999/2000. The decline has occurred despite an increasing national population and stability in the regional population over the 10-year and 25-year periods.

The internationally important population of **Gadwall** at Abberton has also fluctuated greatly in recent years after a peak of 500 in 1988/89. A downward trend, however, has resulted in a Medium Alert being triggered for the 5-year period and a High Alert for the last 10-year period. An average of just 93 occurred in the winter of 1999/2000. This downward trend has occurred during a period when both regional and national populations have continued to increase rapidly. It should be noted, however, that numbers at the site are no lower than they were during the early 1980s.

After an increase in numbers during the late 1970s and 1980s, the population of **Teal** at Abberton has also fluctuated greatly in the last 10 years. Numbers appear to have fallen recently after peaks of 1,900 in the winters of both 1995/96 and 1997/98 and this apparent decline has resulted in a 5-year Medium Alert being triggered. However, the average of 450 reported in the winter of 1999/2000 is no lower than the numbers recorded during the 1980s. Both regionally and nationally, populations have increased over the 5-year, 10-year and 25-year periods.

As with the previous species, there has been considerable fluctuation in the numbers of Pintail at the Abberton Reservoir SPA. Numbers peaked in the early 1970s and after a decade with very low numbers, the size of the population rose again to a peak of 200 birds in 1991/92. Fluctuating numbers since have resulted in High Alerts for both the 5-year and 10-year periods, though the long-term trend is unclear. An average of just 10 birds was reported in the winter of 1999/2000. Both regionally and nationally, populations have declined over the last 10 years.

Shoveler numbers have been stable over the 25-year period at Abberton, but regular fluctuations have resulted in Medium Alerts being triggered for both the 5-year and 10-year periods. In recent winters, numbers have averaged between 850 in 1995/96 to 330 in the winter of 1999/2000. As with the previous two species, the long-term trend in this species' numbers is unclear. Present numbers are no lower than the average over the last 25 years. Both regionally and nationally, populations have increased over the 5-year, 10-year and 25-year periods.

Numbers of Coot at the site have fallen since peaks in the late 1980s and early 1990s to a recent average of 2,700 birds. A High Alert was triggered for the 10-year period and a Medium Alert for the 5-year period. The fluctuations and decline in the species' population at the site have occurred at a time when both regional and national populations have increased.

	Site trend	**National trend (GB)**		**Regional trend (Anglian)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CA, GG, GN, PO, TU		CA, GG, GN, PO, TU	
	Decreasing	CO, **GA**, PT, **SV**, **T.**, WN		CO, **GA**, PT, **SV**, **T.**	WN
10-year trend	Increasing or stable	CA, GG, GN, PO, **T.**		CA, GG, GN, PO, **T.**	
	Decreasing	CO, **GA**, **SV**, TU, WN	PT	CO, **GA**, **SV**, TU, WN	PT
25-year trend[1]	Increasing or stable	**GA**, GN, PO, **SV**, **T.**		**GA**, GN, PO, **SV**, **T.**	
	Decreasing	TU, WN	PT	PT, TU, WN	

Table 3.8.1.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Abberton Reservoir SPA.

[1] Great Crested Grebe, Cormorant and Coot data not available for this time-period.

3.8.2 Alde – Ore Estuary **No further investigation recommended**

9 Evaluated Species: European White-fronted Goose, Shelduck, Wigeon, Teal, Shoveler, *Avocet*, Dunlin, Black-tailed Godwit, **Redshank**

High Alert: none

Medium Alert: none

The Alde – Ore Estuary SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered. It should also be noted that there was a large proportion of missing counts in data for this site from the mid-1970s to mid-1980s.

Summary

- No Alerts were triggered for the Alde – Ore Estuary SPA. The one species present at the site at a level of international importance – **Redshank** – has increased considerably in number over the 5-year, 10-year and 25-year time scales (bettering the regional and national trends).

The populations of the nine species for which the SPA is important are stable or increasing and thus, there is no cause for concern at the site. However, it should be noted that the Alde-Ore Estuary has been subject to increased erosion in recent years.

Details

The Alde – Ore Estuary SPA is located on the Suffolk Coast and comprises the estuaries of the Rivers Alde, Butley and Ore, as well as Havergate Island and Orford Ness. Habitats within the SPA include mudflats, saltmarsh, vegetated shingle, saline lagoons and grazing marsh.

Table 3.8.2.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Alde – Ore Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.2.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Alde – Ore Estuary SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The numbers of *Avocet* wintering at the site have increased considerably since the early 1970s, this trend mirroring regional and national patterns. A peak mean of 1,000 birds occurred in the winter of 1999/2000.

Likewise, the numbers of the one species present at the site at a level of international importance – **Redshank** – have also increased greatly in number since the mid-1980s. Numbers peaked at 3,700 birds in 1997/98. There has also been a slight increase in the regional population over the last 10 years, though nationally numbers have been largely stable

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, BW, DN, EW, **RK**, SU, SV, T., WN		*AV*, BW, DN, EW, **RK**, SV, T.	SU, WN
	Decreasing				
10-year trend	Increasing or stable	*AV*, BW, DN, **RK**, SU, SV, T., WN	EW	*AV*, BW, DN, EW, **RK**, SV, T.	SU, WN
	Decreasing				
25-year trend[1]	Increasing or stable	*AV*, BW, **RK**	DN	*AV*, BW, DN, **RK**	
	Decreasing				

Table 3.8.2.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Alde – Ore Estuary SPA.

[1] European White-fronted Goose, Shelduck, Wigeon, Teal and Shoveler data not available for this time-period.

3.8.3 Benfleet and Southend Marshes **Further investigation recommended**

6 Evaluated Species: **Dark-bellied Brent Goose**, Oystercatcher, Ringed Plover, **Grey Plover**, **Knot**, Dunlin

High Alert: **Dark-bellied Brent Goose**[5,25], **Grey Plover**[5,10] (2)

Medium Alert: **Dark-bellied Brent Goose**[10], Ringed Plover[10], **Knot**[5] (3)

Summary

- Alerts were triggered for all three species for which the site is internationally important – **Dark-bellied Brent Goose**, **Grey Plover** and **Knot**.
- A Medium Alert was also triggered for Ringed Plover

The populations of four of the six species for which the Benfleet and Southend Marshes SPA is important have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is highly recommended. Further investigation should focus initially on factors such as habitat loss due to waterside developments and dredging and changes in recreational disturbance intensity. However, it should be noted that waterbird count data for the eastern part of the SPA were not available.

Details

The Benfleet and Southend Marshes SPA is located on the north shore of the outer Thames Estuary. The SPA comprises mudflats, cockle shell banks, saltmarshes and surrounding grassland. WeBS counts from Leigh/Canvey are used in the analysis, but no data were available for the eastern part of the SPA.

Table 3.8.3.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Benfleet and Southend Marshes SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.3.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Benfleet and Southend Marshes SPA over the 5-year, 10-year and 25-year time periods.

The numbers of **Dark-bellied Brent Goose** using the Benfleet and Southend Marshes have shown a steady decline since the late 1960s when counts began. High Alerts have been triggered for the 5-year and 25-year periods and a Medium Alert for the 10-year period. The numbers using the area counted by WeBS in recent winters have averaged 510. Both regionally and nationally, numbers increased during the 1970s and 1980s, but have since showed a slight decline.

The **Grey Plover** population at Benfleet and Southend increased rapidly during the 1980s, but after peaks of 4,100 and 3,700 birds in 1990/91 and 1994/95 respectively, numbers fell. High Alerts have been triggered for both the 5-year and 10-year periods. The population in the winter of 1999/2000 averaged 640 birds. Both regionally and nationally, numbers have increased steadily since the 1970s.

The numbers of **Knot** using the site rose during the 1980s and early 1990s. Numbers peaked at over 13,000 birds in 1986/87 and again at 12,000 birds in 1994/95, but have since showed a slight decline, this triggering a Medium Alert for the 5-year period. Numbers averaged 5,200 birds in the winter of 1999/2000. Elsewhere in the Anglian region, numbers also increased during the 1980s, but have shown a slight decline in the last decade. Nationally, a similar pattern has also been observed. It is probable, therefore, that the recent decline at the site may be related to factors acting at a regional or national level, rather than being site-specific.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	DN, OC, RP		DN, OC, RP	
	Decreasing	**DB**, **GV**, **KN**		**DB**, **GV**, **KN**	
10-year trend	Increasing or stable	DN, **KN**, OC		DN	**KN**, OC
	Decreasing	**DB**, **GV**	RP	**DB**, **GV**, RP	
25-year trend	Increasing or stable	**GV**, **KN**, OC	DN, RP	DN, **GV**, **KN**, OC, RP	
	Decreasing	**DB**		**DB**	

Table 3.8.3.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Benfleet and Southend Marshes SPA.

3.8.4 Blackwater Estuary (Mid-Essex Coast Phase 4) Further investigation recommended

17 Evaluated Species: Great Crested Grebe, Cormorant, **Dark-bellied Brent Goose**, **Shelduck**, Wigeon, Teal, Pintail, Shoveler, Goldeneye, Red-breasted Merganser, *Avocet*, **Ringed Plover**, **Grey Plover**, **Dunlin**, **Black-tailed Godwit**, Curlew, **Redshank**

High Alert: Great Crested Grebe[5], Shoveler[5], Goldeneye[5,10,25] (3)

Medium Alert: Great Crested Grebe[10], Cormorant[5,10], **Dark-bellied Brent Goose**[5], Teal[5], **Ringed Plover**[10,25] (5)

The Blackwater Estuary SPA also supports nationally important numbers of *Golden Plover* and *Ruff* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Medium Alerts were triggered for two of the seven species for which the Blackwater Estuary SPA is internationally important in winter – **Dark-bellied Brent Goose** and **Ringed Plover**.
- Alerts were also triggered for five other species for which the site is important.

Populations of seven of the 17 species for which the site is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is recommended, particularly for those species whose populations are stable or increasing at the regional or national scale. It is possible that Cormorants are increasingly using inland sites in this region (such as Abberton Reservoir) at the expense of coastal sites. Declines in Great Crested Grebe numbers have also been noted at other nearby SPAs – the Colne Estuary, Dengie and the Stour and Orwell Estuaries. This might suggest that there is a wider issue regarding these two species in this region. Further investigation should focus initially on factors such as habitat loss or change due to erosion, eutrophication, pollution from domestic sewage and agriculture and changes in recreational disturbance intensity.

Details

The Blackwater Estuary is one of the largest estuary complexes in East Anglia. The SPA comprises extensive mudflats and saltmarsh, as well as areas of shingle, shell banks, offshore islands and grazing marshes and ditch systems. The SPA includes the subsumed SPA of Old Hall Marshes.

Table 3.8.4.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Blackwater Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.4.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Blackwater Estuary SPA over the 5-year, 10-year and 25-year time periods.

The Great Crested Grebe population at the Blackwater Estuary rose between the mid-1980s and mid-1990s, peaking at an average of 150 birds in 1995/96. A steep decline since then has triggered a High Alert for the 5-year period and a Medium Alert for the 10-year period. The decline has occurred despite continued increases in the regional and national populations.

Avocet were only occasionally recorded on the Blackwater Estuary in winter prior to the 1990s. Their occurrence has become more frequent over the last decade, however, rising to a monthly mean of 22 birds in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

Numbers of **Dark-bellied Brent Geese** on the SPA rose through the 1970s and 1980s, but have recently shown signs of a decline and this has triggered a Medium Alert for the recent 5-year period. An average of 7,400 birds was recorded in the winter of 1999/2000. The earlier increase in numbers mirrors increases in the regional and national populations. More recently there have also been slight declines at the regional and national scales.

The population of **Shelduck** at the Blackwater Estuary has fluctuated considerably from year to year, but has shown a clear upward trend over the 25-year period. An average of 3,000 birds occurred in the winter of 1999/2000. More recent stability over the 5-year and 10-year periods has occurred at a time when the regional population has been in decline.

Shoveler numbers at the site have declined from a peak monthly average of 88 birds in 1992/93, triggering a High Alert for the 5-year period. Regionally and nationally, populations of Shoveler have been steadily increasing. The numbers of Shoveler at the site are not high and fluctuate considerably between years, and there is thus only limited cause for concern for this species.

The Goldeneye population at the SPA has declined since peaks in the 1980s, triggering High Alerts for the 5-year, 10-year and even 25-year periods. Numbers recently have averaged 91 birds. The decline has occurred despite steady increases in the regional and national populations.

The fluctuating population of **Ringed Plover** at the Blackwater Estuary peaked in the winter of 1988/89 at an average of 430 birds. Lower numbers since then have resulted in Medium Alerts being triggered for the 10-year and also 25-year periods. This decline is coincident with a decline in the national population, though regionally, numbers have been increasing.

Numbers of **Grey Plover** on the SPA increased considerably between the 1970s and early 1990s. Numbers have fluctuated between 2,100 and 5,200 in recent years. The local trend follows those of the regional and national populations.

The **Dunlin** population at the site also increased between the 1970s and early 1990s, though has shown no clear trend since. Regionally, the **Dunlin** population has been stable over all three time periods considered, whilst nationally, there has been a slight decline over the 25-year period.

Black-tailed Godwit numbers at the site increased sharply in the late-1980s, though have since shown considerable fluctuations. The overall pattern of increase over each of the three time periods, however, matches the regional and national trends.

Redshank numbers were relatively stable through the 1980s, though have recently increased. An average of 2,000 birds occurred in the winter of 1999/2000. There has also been a slight increase in the regional population over the last 10 years, though nationally numbers have been largely stable.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, **BW**, CU, **DN**, **GV**, PT, **RK**, RM, **RP**, **SU**, WN		*AV*, **BW**, CU, **DN**, **GV**, PT, **RK**, RM, **RP**	**SU**, WN
	Decreasing	CA, **DB**, GG, GN, SV, T.		CA, **DB**, GG, GN, SV, T.	
10-year trend	Increasing or stable	*AV*, **BW**, CU, **DB**, **DN**, **GV**, **RK**, RM, **SU**, SV, T., WN	PT	*AV*, **BW**, CU, **DB**, **DN**, **GV**, **RK**, RM, SV, T.	PT, **SU**, WN
	Decreasing	CA, GG, GN	**RP**	CA, GG, GN, **RP**	
25-year trend[1]	Increasing or stable	*AV*, **BW**, CU, **DB**, **GV**, **RK**, RM, **SU**, SV, T., WN	PT, **DN**	*AV*, **BW**, CU, **DB**, **DN**, **GV**, PT, **RK**, RM, **SU**, SV, T., WN	
	Decreasing	GN	**RP**	GN, **RP**	

Table 3.8.4.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Blackwater Estuary SPA.

[1] Great Crested Grebe and Cormorant data not available for this time-period.

3.8.5 Colne Estuary (Mid-Essex Coast Phase 2) Further investigation recommended

10 Evaluated Species: Great Crested Grebe, Cormorant, **Dark-bellied Brent Goose**, Shelduck, *Avocet*, Ringed Plover, Grey Plover, Dunlin, Black-tailed Godwit, **Redshank**

High Alert: Great Crested Grebe[5,10], Cormorant[5,10], **Dark-bellied Brent Goose**[10], Shelduck[5,25], Black-tailed Godwit[10] (5)

Medium Alert: **Dark-bellied Brent Goose**[5], Shelduck[10], Ringed Plover[5,10] (3)

The Colne Estuary SPA also supports nationally important numbers of *Golden Plover* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- A High Alert was triggered for one of the two species for which the Colne Estuary SPA is internationally important in winter – **Dark-bellied Brent Goose**.
- Alerts were also triggered for five other species for which the site is important.

The populations of six of the 10 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of the declines is recommended. In particular, study is required to determine why previous increases in the numbers of **Dark-bellied Brent Goose** and Black-tailed Godwit have been reversed over the last 10 years. It is possible that Cormorants are increasingly using inland sites in this region (such as Abberton Reservoir) at the expense of coastal sites. Declines in Great Crested Grebe numbers have also been noted at other nearby SPAs – the Blackwater Estuary, Dengie and the Stour and Orwell Estuaries. This might suggest that there is a wider issue regarding these two species in this region. Further investigation should focus initially on factors such as habitat loss due to overgrazing and erosion, eutrophication, pollution from domestic sewage and agriculture, and changes in disturbance intensity (including from military activities), especially since the early 1990s, since when many of the species have been in decline.

Details

The Colne Estuary is a short, branched estuary on the Essex coast. The SPA includes the estuarine mudflats and saltmarsh and, in addition, sand and shingle pits, disused gravel pits, reedbeds and grazing marsh.

Table 3.8.5.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Colne Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.5.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Colne Estuary SPA over the 5-year, 10-year and 25-year time periods.

The Great Crested Grebe population at the Colne Estuary SPA peaked in 1987/88 and again in 1991/92 and 1995/96, at an average of over 30 birds. An underlying downward trend, however, has resulted in High Alerts being triggered for the 5-year and 10-year periods. This decline has occurred despite steady increases in the regional and national populations.

Cormorant numbers on the Colne Estuary have also fallen since a peak in the early 1990s, triggering High Alerts for the 5-year and 10-year periods. Recent numbers have averaged around 40 birds. The decline has occurred at a time when regional and national populations have increased.

The numbers of **Dark-bellied Brent Goose** on the Colne rose between the 1960s and late 1980s, following the regional and national trend, but since the early 1990s have been in decline. Recent numbers have averaged 2,500 birds. The decline has resulted in a Medium Alert being triggered for the 5-year period and a High Alert for the 10-year period. Regional and national populations have also shown slight decreases over the last 10 years.

The population of Shelduck at the site peaked in the early 1970s and after a decline, rose again between the early 1980s and early 1990s. Since then, however, numbers have fallen sharply and an average of just 690 birds was recorded in the winter of 1999/2000. High Alerts have been triggered for the 5-year and 25-year periods and a Medium Alert for the 10-year period. The recent decline mirrors the regional trend for the 5-year and 10-year periods, though nationally, populations have remained stable.

Avocet were only occasionally recorded on the Colne Estuary in winter prior to the 1990s. They have become much more numerous over the last decade, however, and a monthly average of 360 birds was recorded in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

Black-tailed Godwit numbers on the Colne Estuary rose to a peak of over 1,000 birds in 1988/89, but declined sharply afterwards. The numbers present on the SPA in the late 1980s surpassed the threshold for international importance, but the decline since then has reduced numbers to a level well below this. A High Alert has thus been triggered for the 10-year period, though over the 5-year period, numbers have been stable. The decline has occurred at a time of increase in both the regional and national populations.

The numbers of **Redshank** on the estuary fell sharply through the 1970s, but since 1980 have shown a steady increase. In recent winters, numbers have averaged 1,200 birds. The increase in the last decade mirrors the regional trend, though nationally, the population has been more stable.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend[2]	Increasing or stable	BW, DN, GV, **RK**		BW, DN, GV, **RK**	
	Decreasing	CA, **DB**, GG, RP, SU		CA, **DB**, GG, RP	SU
10-year trend[2]	Increasing or stable	DN, GV, **RK**		DN, GV, **RK**	
	Decreasing	BW, CA, **DB**, GG, SU	RP	BW, CA, **DB**, GG, RP	SU
25-year trend[1,2]	Increasing or stable	BW, **DB**, GV, **RK**	DN, RP	BW, **DB**, DN, GV, **RK**, RP	
	Decreasing	SU		SU	

Table 3.8.5.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Colne Estuary SPA.

[1] Great Crested Grebe and Cormorant data not available for this time-period.
[2] *Avocet* data not available for this time-period.

3.8.6 Crouch and Roach Estuaries (Mid-Essex Coast Phase 3) No further investigation recommended

1 Evaluated Species: **Dark-bellied Brent Goose**

High Alert: none

Medium Alert: none

Summary

- The one species present at the Crouch and Roach Estuaries SPA at a level of international importance – **Dark-bellied Brent Goose** – increased greatly in number over the 25-year time scale (mirroring the regional and national trends).

There is thus no cause for concern for the one species for which the SPA is important. Adverse factors reported at the site include eutrophication, pollution from agriculture and human disturbance.

Details

The Crouch and Roach Estuaries are located on the Essex coast and converge together to enter the North Sea either side of Foulness Island (which forms a separate SPA). Both estuaries are squeezed by sea walls, this restricting the area of intertidal mud and particularly saltmarsh.

Table 3.8.6.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Crouch and Roach Estuaries SPA is internationally important, over the 5-year, 10-year and 25-year periods. Table 3.8.6.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Crouch and Roach Estuaries SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species present at the site at a level of international importance – **Dark-bellied Brent Goose** – increased in number during the 1970s and 1980s. As with the regional and national populations, however, the population on the SPA has declined slightly over the last 10 years. An average of 3,400 has occurred in recent winters.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**DB**		**DB**	
	Decreasing				
10-year trend	Increasing or stable	**DB**		**DB**	
	Decreasing				
25-year trend	Increasing or stable	**DB**		**DB**	
	Decreasing				

Table 3.8.6.1 Summary of comparisons between the site trend and the national and regional (Anglian region) population trends of cited species for the Crouch and Roach Estuaries SPA.

3.8.7 Deben Estuary **No further investigation recommended**

1 Evaluated Species: *Avocet*

High Alert: none

Medium Alert: none

Summary

- The one species present at the Deben Estuary SPA at a level of importance – *Avocet* – increased in number over the 5-year, 10-year and 25-year time scales (mirroring the regional and national trends).

There is thus no cause for concern for the one species for which the SPA is important. Adverse factors reported at the site include erosion.

Details

The Deben Estuary SPA is a narrow estuary located on the Suffolk Coast. The SPA comprises mudflats and locally extensive saltmarsh, together with adjacent reed swamp habitats.

Table 3.8.7.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Deben Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.7.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Deben Estuary SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species present at the site at a level of national importance – *Avocet* – was rarely recorded prior to the mid-1980s. They have become much more numerous over the last 15 years, however, rising to a monthly mean of 150 birds in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

	Site trend	National trend (GB)			Regional trend (Anglian)	
		Increasing or stable	**Decreasing**		**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*			*AV*	
	Decreasing					
10-year trend	Increasing or stable	*AV*			*AV*	
	Decreasing					
25-year trend	Increasing or stable	*AV*			*AV*	
	Decreasing					

Table 3.8.7.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Deben Estuary SPA.

3.8.8 Dengie (Mid-Essex Coast Phase 1) No further investigation recommended

8 Evaluated Species: Great Crested Grebe, Cormorant, Dark-bellied Brent Goose, Oystercatcher, **Grey Plover**, **Knot**, Dunlin, *Bar-tailed Godwit*

High Alert: Great Crested Grebe[10] (1)

Medium Alert: Great Crested Grebe[5], Cormorant[5] (2)

The Dengie SPA is also cited for Lapwing and Black-tailed Godwit (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for two of the species for which the Dengie SPA is important in winter – a High Alert for Great Crested Grebe over the 10-year time period and a Medium Alert for Cormorant.
- No alerts were triggered for the two species for which the site is internationally important – **Grey Plover** and **Knot**.

The populations of six of the eight species for which the SPA is important are stable or increasing and thus, there is limited cause for concern at the site. Adverse factors reported at the site include recreational disturbance.

Details

The Dengie SPA is a large expanse of tidal mudflats and saltmarsh on the Essex coast situated between the Blackwater and Crouch estuaries.

Table 3.8.8.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Dengie SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.8.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Dengie SPA over the 5-year, 10-year and 25-year time periods.

Great Crested Grebe numbers at the Dengie SPA peaked at 61 birds in 1988/89, but have fallen to much lower levels since. This has resulted in a 10-year High Alert and a 5-year Medium Alert being triggered. This decline has occurred despite steady increases in the regional and national populations.

Numbers of **Grey Plover** at Dengie have fluctuated from year to year, but have shown an upward trend since the 1970s. An average of 2,900 birds was recorded in the winter of 1999/2000. The rise in the species' population matches those seen in the regional and national populations.

The **Knot** population at Dengie has exhibited even greater fluctuations, but overall has shown increases over the 5-year, 10-year and 25-year periods. An average of 5,400 birds was recorded in the winter of 1999/2000. Both regionally and nationally, populations have increased over the 25-year period.

Numbers of *Bar-tailed Godwit* at Dengie increased during the late 1980s and early 1990s, peaking at 3,200 birds in 1996/97. Numbers have dropped since this extreme peak, but have still shown overall increases over the 10-year and 25-year periods. An average of 650 birds was recorded in the winter of 1999/2000. Numbers have also increased elsewhere in the region over the 25-year period, though nationally numbers have been more stable.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*BA*, DB, DN, **GV**, **KN**, OC		*BA*, DB, DN, **GV**, **KN**, OC	
	Decreasing	CA, GG		CA, GG	
10-year trend	Increasing or stable	*BA*, CA, DB, DN, **GV**, **KN**, OC		*BA*, CA, DB, DN, **GV**	**KN**, OC
	Decreasing	GG		GG	
25-year trend[1]	Increasing or stable	*BA*, DB, **GV**, **KN**, OC	DN	*BA*, DB, DN, **GV**, **KN**, OC	
	Decreasing				

Table 3.8.8.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Dengie SPA.

[1] Great Crested Grebe and Cormorant data not available for this time-period.

3.8.9 Foulness (Mid-Essex Coast Phase 5) No further investigation recommended

13 Evaluated Species: Little Grebe, **Dark-bellied Brent Goose**, Shelduck, Wigeon, **Oystercatcher**, *Avocet*, **Grey Plover**, **Knot**, Dunlin, Black-tailed Godwit, *Bar-tailed Godwit*, Curlew, Redshank

High Alert: **Knot**[5], Black-tailed Godwit[5] (2)

Medium Alert: **Dark-bellied Brent Goose**[10], Shelduck[5], **Knot**[10], *Bar-tailed Godwit*[5,10], Curlew[5,10,25] (5)

The Foulness SPA also supports nationally important numbers of *Golden Plover* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts have been triggered for two of the four species for which the Foulness SPA is internationally important – **Dark-bellied Brent Goose** and **Knot**.
- Alerts have also been triggered for four further species for which the site is important.

The populations of six of the 13 species for which the site is important (and for which data were evaluated) have shown declines. However, only two of these are amongst the six species of national or international importance at the site and there is thus only limited cause for concern at the site. No direct adverse factors have been identified from the literature for the Foulness SPA.

Details

Foulness is located on the coast of Essex adjacent to the Crouch and Roach Estuaries SPA. The site includes open coastal mud- and sand-flats, cockle shell banks, saltmarsh and grazing marsh on Foulness Island.

Table 3.8.9.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Foulness SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.9.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Foulness SPA over the 5-year, 10-year and 25-year time periods.

Dark-bellied Brent Goose numbers at Foulness increased through the 1970s and 1980s to a peak mean of over 13,000 birds in 1990/91. A fluctuating decline since then has resulted in a Medium Alert being triggered for the 10-year period. An average of 3,400 birds was recorded in the winter of 1999/2000. Both regionally and nationally, numbers increased during the 1970s and 1980s, though recently numbers have also showed slight declines. It should be noted, however, that Dark-bellied Brent Geese numbers often peak at Foulness early in the winter (late September/October) before moving north to other sites. The Alerts process assesses their numbers during December, January and February.

The population of **Oystercatcher** at the Foulness SPA increased through the 1970s and 1980s, though over the last decade numbers have perhaps begun to decline. Numbers have averaged over 7,400 in recent winters. The trend for the site follows both the regional and national trends (though the decline over the last 10 years has been greater at the regional scale).

Avocet were only occasionally recorded at Foulness in winter prior to the mid-1980s. They have become much more numerous over the last decade, however, rising to a monthly average of 170 birds in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

Grey Plover numbers at Foulness have risen steeply since the 1970s, peaking at 4,400 birds in 1995/96. A slight decline has occurred since, numbers averaging 2,400 birds in the winter of 1999/2000. Both regionally and nationally, numbers have shown similar trends.

Numbers of **Knot** also increased through the 1970s and 1980s, peaking at 36,000 birds in 1995/96. A steep decline has occurred in the four years since, however, and numbers averaged just 10,000 in the winter of 1999/2000. A High Alert was triggered for the 5-year period and a Medium Alert for the 10-year period. Both regionally and nationally, numbers recovered during the 1980s after an earlier fall, but have fallen again over the last decade (this decline has been most obvious at a regional scale).

Black-tailed Godwit were rarely recorded at Foulness prior to the 1990s, but rose steeply in number to peak at 130 birds in 1994/95. A 5-year High Alert has been triggered for a drop in numbers over the last two winters, though the long-term trend is not clear. Both regionally and nationally, numbers have increased greatly over the 25-year period.

The numbers of *Bar-tailed Godwit* at Foulness rose through the 1970s and early 1980s to a peak of 8,600 in 1984/85. A further peak of over 10,000 birds was recorded in 1996/97, after which numbers declined sharply. Medium Alerts have been triggered for both the 5-year and 10-year periods. Elsewhere regionally, numbers have shown a steady increase over the last 25 years, while nationally numbers have been more stable.

	Site trend	**National trend (GB)**		**Regional trend (Anglian)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, **DB**, DN, **GV**, LG, **OC**, RK, WN		*AV*, **DB**, DN, **GV**, LG, **OC**, RK	WN
	Decreasing	*BA*, BW, CU, **KN**, SU		*BA*, BW, CU, **KN**	SU
10-year trend	Increasing or stable	*AV*, BW, DN, **GV**, LG, **OC**, RK, SU, WN		*AV*, BW, DN, **GV**, LG, RK	**OC**, SU, WN
	Decreasing	*BA*, CU, **DB**, **KN**		*BA*, CU, **DB**	**KN**
25-year trend[1]	Increasing or stable	*AV*, *BA*, BW, **DB**, **GV**, **KN**, **OC**, RK, SU, WN	DN	*AV*, *BA*, BW, **DB**, DN, **GV**, **KN**, **OC**, RK, SU, WN	
	Decreasing	CU		CU	

Table 3.8.9.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Foulness SPA.

[1] Little Grebe data not available for this time-period.

3.8.10 Hamford Water — Further investigation recommended

10 Evaluated Species: **Dark-bellied Brent Goose**, Shelduck, Wigeon, **Teal**, *Avocet*, **Ringed Plover**, **Grey Plover**, Dunlin, **Black-tailed Godwit**, Redshank

High Alert: **Dark-bellied Brent Goose**[5], Wigeon[5], Dunlin[25], **Black-tailed Godwit**[5] (4)

Medium Alert: **Dark-bellied Brent Goose**[25], **Teal**[5], **Grey Plover**[5], Dunlin[5] (4)

The Hamford Water SPA also supports nationally important numbers of *Golden Plover* and *Ruff* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered. Data were also not available from 1989/90 and thus it was not possible to calculate percentage change figures or Alerts for the 10-year period.

Summary

- Alerts were triggered for four of the five species for which the Hamford Water SPA is internationally important in winter.
- Alerts were also triggered for two species for which the site is also important.

The populations of six of the 10 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Of particular concern are the declines over the 5-year period which contrast with stable or increasing regional and national trends. Detailed investigation into the causes of these declines is highly recommended. Further investigation should focus initially on factors such as habitat loss due to dredging and erosion, pollution from agriculture and industry, changes in water quality resultant from improvements to waste water discharges and changes in recreational disturbance intensity, especially since the mid-1990s, since when a number of species have been in decline.

Details

Hamford Water is a large, shallow estuarine basin on the Essex coast. The SPA comprises tidal creeks and islands, intertidal mudflats and saltmarsh.

Table 3.8.10.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Hamford Water SPA is important, over the 5-year and 25-year periods. Table 3.8.10.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Hamford Water SPA over the 5-year and 25-year time periods.

The numbers of **Dark-bellied Brent Goose** at Hamford Water rose between the 1960s and mid-1980s, mirroring increases in the regional and national populations. Numbers have fluctuated since and in recent winters have begun to decline, falling from 5,800 in 1996/97 to 2,200 in the winter of 1999/2000. As a result, a High Alert has been triggered for the 5-year period. Shallow declines have also occurred over the last decade both regionally and nationally.

Less than 2,500 Wigeon are normally recorded at Hamford Water each winter. In four winters in the last 25 years, however, numbers have risen much higher. An average of over 9,500 birds was recorded in 1995/96 and the return to usual levels since has resulted in a High Alert for the 5-year period being triggered. This rise and fall has occurred in a period when the regional population has shown a slight decline and when the national population has been stable.

Numbers of **Teal** have shown great fluctuations at the site over the last 25 years. Peaks of 2,400 and 1,800 occurred in 1990/91 and 1995/96 respectively, though there has been a downward trend in the

last 5 years, triggering a Medium Alert for this period. An average of 500 birds was recorded in the winter of 1999/2000. Regionally and nationally, populations have risen steadily over the last 25 years.

Avocet were only occasionally recorded at Hamford Water in winter prior to the early 1980s. They have become much more numerous over the last two decades, however, rising to a monthly average of 370 birds in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

The population of **Ringed Plover** at Hamford Water fell after the mid-1970s, but after the mid-1980s rose dramatically. In the last decade numbers have fluctuated, though shown no clear trend. Numbers have averaged between 150 and 340 in recent winters. A decline has occurred in the national population in the last 25 years, though regionally, numbers have been increasing.

Numbers of **Grey Plover** at Hamford rose between the mid-1980s and mid-1990s, following the regional and national trends. A decline following a peak of 4,900 birds in 1996/97 has triggered a 5-year Medium Alert. Both regionally and nationally, populations have been stable during this period. Numbers at the site remain above those recorded in the 1980s, however, and concern should be limited unless the recent declining trend continues.

Dunlin numbers at the site fell from a peak of over 11,000 in 1974/75 to an average of just over 2,400 during the mid-1980s. Numbers rose subsequently, but in the last 5 years there have been signs of a new decline, this triggering a Medium Alert for this period. A High Alert has also been triggered for the 25-year period. Regionally, the Dunlin population has been stable over all three time periods considered, though nationally, there has been a slight decline over the 25-year period.

The **Black-tailed Godwit** population at Hamford Water rose to peaks of over 800 birds in 1990/91 and 1994/95, but has since fallen. In recent winters, numbers have averaged 130 birds. This decline has triggered a High Alert for the 5-year period. Both regionally and nationally, populations have risen steadily over the last 25 years.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*, RK, **RP**, SU		*AV*, RK, **RP**	SU
	Decreasing	**BW**, **DB**, DN, **GV**, **T.**, WN		**BW**, **DB**, DN, **GV**, **T.**	WN
10-year trend[1]	Increasing or stable				
	Decreasing				
25-year trend	Increasing or stable	*AV*, **BW**, **GV**, RK, SU, **T.**, WN	**RP**	*AV*, **BW**, **GV**, RK, **RP**, SU, **T.**, WN	
	Decreasing	**DB**	DN	**DB**, DN	

Table 3.8.10.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Hamford Water SPA.

[1] Alerts not available for this time-period.

3.8.11 Minsmere – Walberswick **No further investigation recommended**

1 Evaluated Species: *Avocet*

High Alert: none

Medium Alert: none

The Minsmere – Walberswick SPA also supports nationally important numbers of *Bittern* in winter (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- The one species present at the Minsmere – Walberswick SPA in important numbers and for which data were evaluated – *Avocet* – increased in number over the 5-year, 10-year and 25-year time scales (mirroring the regional and national trends).

There is thus no cause for concern for the one species for which the SPA is important. No direct adverse factors have been identified from the literature for the Minsmere – Walberswick SPA.

Details

The Minsmere – Walberswick SPA is located on the Suffolk Coast and comprises two large marshes, the tidal Blyth Estuary and associated habitats. The SPA includes areas of marshland with dykes, extensive reedbeds, mudflats, saline lagoons, shingle, woodland and heath.

Table 3.8.11.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Minsmere – Walberswick SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.11.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Minsmere – Walberswick SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species present at the site at a level of national importance – *Avocet* – was rarely recorded prior to the 1990s. They have become much more numerous over the last decade, however, rising to a monthly average of 340 birds in the winter of 1999/2000. Both regionally and nationally, numbers have increased since the 1970s.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*AV*		*AV*	
	Decreasing				
10-year trend	Increasing or stable	*AV*		*AV*	
	Decreasing				
25-year trend	Increasing or stable	*AV*		*AV*	
	Decreasing				

Table 3.8.11.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Minsmere – Walberswick SPA.

3.8.12 North Norfolk Coast — No further investigation recommended

17 Evaluated Species: Cormorant, European White-fronted Goose, **Dark-bellied Brent Goose**, Shelduck, **Wigeon**, Gadwall, Teal, **Pintail**, Shoveler, Oystercatcher, Ringed Plover, Grey Plover, **Knot**, Sanderling, Dunlin, *Bar-tailed Godwit*, **Redshank**

High Alert: none

Medium Alert: Cormorant[5], Teal[10] (2)

The North Norfolk Coast SPA also supports nationally important numbers of *Bittern*, *Avocet*, *Golden Plover* and *Ruff* and internationally important numbers of **Pink-footed Goose** in winter and is also cited for Common Scoter, Velvet Scoter and Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered. Count data were only available from the winter of 1983/84 for waders and from 1989/90 for wildfowl and thus percentage change figures and alerts are only provided for the 5-year and 10-year periods.

Summary

- None of the five species present at the North Norfolk Coast SPA in internationally important numbers (and for which data were evaluated) triggered Alerts.
- However, Medium Alerts were triggered for two other species for which the site is important – Cormorant and Teal.

The populations of 15 of the 17 species for which the SPA is important (and for which data were evaluated) are stable or increasing and thus, there is little cause for concern at the site. As data were only available from the 1980s, however, trends over the 25-year period could not be determined and longer-term declines may have been overlooked. Adverse factors reported at the site include recreational disturbance and possible overexploitation of shellfish stocks.

Details

The North Norfolk Coast is a low-lying barrier coast that extends 40 km from Holme to Weybourne. The varied habitats within the SPA include extensive sand- and mud-flats, saltmarsh, shingle and sand-dunes, freshwater grazing marsh and reedbed.

Table 3.8.12.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species considered for the North Norfolk Coast SPA, over the 5-year, 10-year and 25-year periods. Table 3.8.12.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the North Norfolk Coast SPA over the 5-year, 10-year and 25-year time periods.

The numbers of **Dark-bellied Brent Goose** on the North Norfolk Coast have fluctuated since the first counts were available in the winter of 1989/90 and have ranged between 6,900 and 9,000 birds in the last 5 years. The trend in the species' population at the site is stable, however. Regionally and nationally, numbers have fallen slightly in the last 10 years, after an earlier period of steady increase.

Wigeon numbers on the SPA have risen sharply in number since 1989/90 and averaged 19,000 birds in the winter of 1999/2000. Regionally, the population has declined slowly over the last 5-year and 10-year periods, whilst nationally there has been a rise over the 25-year period, but more recent stability.

The population of **Pintail** using the North Norfolk Coast has fluctuated since 1989/90, though shown no clear trend. Numbers have averaged 780 birds in recent winters. Regionally, numbers have fallen since a large peak in the late 1980s, whilst nationally numbers rose rapidly through the 1970s, but have since been in decline.

Numbers of **Knot** on the SPA have also fluctuated since the first counts in 1983/84, though again have shown no clear trend. Average numbers have ranged between 1,600 and 6,700 birds in recent winters. Elsewhere regionally and nationally, numbers increased during the 1980s, but have shown slight declines in the last decade.

The numbers of *Bar-tailed Godwit* in North Norfolk have risen since 1983/84 and an average of 1,400 wintered in 1999/2000. Elsewhere in the region, numbers have also increased over the last 25 years, though nationally, numbers have been more stable.

The **Redshank** population on the site has also risen rapidly since 1983/84 and in the winter of 1999/2000 numbered over 1,200 birds. There has also been a slight increase in the regional population over the last 10 years, though nationally numbers have been largely stable.

	Site trend	**National trend (GB)**		**Regional trend (Anglian)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*BA*, **DB**, DN, EW, GA, GV, **KN**, OC, **PT**, **RK**, RP, SS, SU, SV, T., **WN**		*BA*, **DB**, DN, EW, GA, GV, **KN**, OC, **PT**, **RK**, RP, SS, SV, T.	SU, **WN**
	Decreasing	CA		CA	
10-year trend	Increasing or stable	*BA*, CA, **DB**, DN, GA, GV, **KN**, OC, **RK**, SS, SU, SV, **WN**	EW, **PT**, RP	*BA*, CA, **DB**, DN, EW, GA, GV, **RK**, RP, SS, SV	**KN**, OC, **PT**, SU, **WN**
	Decreasing	T.		T.	
25-year trend[1]	Increasing or stable				
	Decreasing				

Table 3.8.12.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the North Norfolk Coast SPA.

[1] Data not available for this time-period.

3.8.13 Ouse Washes **Further investigation recommended**

12 Evaluated Species: Cormorant, *Bewick's Swan*, *Whooper Swan*, **Wigeon**, **Gadwall**, Teal, Mallard, **Pintail**, **Shoveler**, **Pochard**, Tufted Duck, Coot

High Alert: Cormorant[5,10], **Wigeon**[10,25] (2)

Medium Alert: **Wigeon**[5], Mallard[5,25] (2)

The Ouse Washes SPA also supports nationally important numbers of *Ruff* and internationally important numbers of **Black-tailed Godwit** in winter and is additionally cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts have been triggered for one of the five species for which the Ouse Washes SPA is internationally important – **Wigeon**.
- Alerts have also been triggered for two other species for which the site is important.

The populations of three of the 12 species for which the SPA is important (and for which data were evaluated) have shown declines and thus, there is cause for concern at the site. The decline of the internationally important population of **Wigeon** is of particular concern, however, and further investigation is required to determine whether site-related factors may be influencing this. No direct adverse factors have been identified from the literature for the Ouse Washes SPA.

Details

The Ouse Washes are an extensive area of seasonally flooding wet grassland lying between the Old and New Bedford Rivers, which acts as a floodwater storage system during the winter. This flooding and summer grazing by cattle has created a mosaic of wet grassland and wet pasture habitats.

Table 3.8.13.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Ouse Washes SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.13.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Ouse Washes SPA over the 5-year, 10-year and 25-year time periods.

Cormorant numbers at the Ouse Washes have fallen since a peak in the early 1990s. Recent numbers have averaged just 67 birds. The decline has triggered High Alerts for both the 5-year and 10-year periods. Regionally and nationally, numbers rose over the 10-year period, though have been more stable in the last 5 years.

The numbers of *Bewick's Swan* at the Ouse Washes rose through the 1970s and early 1980s, but have since fluctuated. An average of 5,300 was recorded in the winter of 1999/2000. Elsewhere regionally and nationally, numbers also rose during the 1970s, though there have been sizeable declines in the last three winters.

The numbers of *Whooper Swan* at the Ouse Washes have risen sharply over the last two decades and a peak mean of 1,900 was recorded in the winter of 1999/2000. This increase reflects the national trend over the same period. Few *Whooper Swans* winter elsewhere within the Anglian region.

Numbers of **Wigeon** at the site have shown a cyclical pattern over the last 30 years. Numbers fell between the early 1970s and early 1980s before then rising again. Since the late 1980s numbers have

fallen again and an average of 15,000 was recorded in the winter of 1999/2000. A Medium Alert has been triggered for the 5-year period and High Alerts for the 10-year and 25-year periods. Nationally, the population has risen over the 25-year period, whilst regionally the trend has been more stable.

The **Gadwall** population at the Ouse Washes has risen steadily over the last 25 years. A peak mean of 280 birds was recorded in the winter of 1999/2000. This trend mirrors those in both the regional and national populations.

The numbers of **Pintail** using the site have risen since the early 1980s and in the last two winters have averaged over 950 birds. Regionally, the population of Pintail has fallen since peaks in the late 1980s, whilst nationally numbers have been falling since the early 1980s.

The population of **Shoveler** using the SPA has been very stable in the last 20 years, recently averaging 140 birds. Both regionally and nationally, populations have shown steady increases over the last 25 years.

Pochard numbers at the Ouse Washes have fluctuated in recent years, though have risen greatly since the early 1970s. An average of 2,100 birds was recorded over the last 5 winters. Regionally, numbers have shown a slight increase in the last 10 years, whilst nationally the population has been stable over the last 25 years.

	Site trend	**National trend (GB)**		**Regional trend (Anglian)**	
		Increasing or stable	Decreasing	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CO, **GA**, **PO**, **PT**, **SV**, T., TU, *WS*	*BS*	CO, **GA**, **PO**, **PT**, **SV**, T., TU	*BS*, *WS*
	Decreasing	CA, MA, **WN**		CA, MA, **WN**	
10-year trend	Increasing or stable	CO, **GA**, **PO**, **SV**, T., TU, *WS*	*BS*, MA, **PT**	CO, **GA**, **PO**, **SV**, T., TU	*BS*, MA, **PT**, *WS*
	Decreasing	CA, **WN**		CA, **WN**	
25-year trend[1]	Increasing or stable	**GA**, **PO**, **SV**, T., TU, *WS*	*BS*, MA, **PT**	**GA**, **PO**, **PT**, **SV**, T., TU	*BS*, MA, *WS*
	Decreasing	**WN**		**WN**	

Table 3.8.13.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Ouse Washes SPA.

[1] Cormorant and Coot data not available for this time-period.

Few *Whooper Swans* winter elsewhere within the Anglian region and the comparison with the regional trend is therefore of limited value for this species.

3.8.14 Rutland Water — No further investigation recommended

11 Evaluated Species: Little Grebe, Great Crested Grebe, Cormorant, Wigeon, **Gadwall**, Teal, **Shoveler**, Pochard, Tufted Duck, Goldeneye, Coot

High Alert: Cormorant[5] (1)

Medium Alert: Cormorant[10] (1)

The Rutland Water SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- No alerts were triggered for either of the two species of wildfowl – **Gadwall** and **Shoveler** – for which the Rutland Water SPA is internationally important.
- Alerts were triggered, however, for Cormorant, one of nine other species that occur on the site in important numbers.

The populations of 10 of the 11 species for which the SPA is important (and for which data were evaluated) are stable or increasing and thus, there is little cause for concern at the site. No direct adverse factors have been identified from the literature for the Rutland Water SPA.

Details

Rutland Water is a man-made storage reservoir that was created by the damming of the Gwash Valley in 1975. The reservoir is drawn down in the summer and filled during the autumn and winter months. Habitats within the SPA include the open water of the reservoir itself, lagoons, reedbeds, marsh, old meadows, scrub and woodland. As the reservoir was only created in 1975, Alerts are only provided for the 5-year and 10-year periods.

Table 3.8.14.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Rutland Water SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.8.14.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Rutland Water SPA over the 5-year, 10-year and 25-year time periods.

Cormorant numbers at Rutland Water have fallen since a peak in the early 1990s. Numbers in the last four winters have averaged 170 birds. The decline has triggered a High Alert for the 5-year period and a Medium Alert for the 10-year period. Regionally and nationally, numbers rose over the 10-year period, though have been more stable in the last 5 years.

Numbers of **Gadwall** at the site rose after its creation until the mid-1980s after which they have fluctuated, though shown a stable long-term trend. Recent winter numbers have averaged 610 birds. Regionally and nationally, populations have risen steadily over the last 25 years.

After an initial rise after the reservoir's creation, numbers of **Shoveler** remained largely steady through the 1980s and 1990s. Numbers rose sharply to 800 birds in the last winter of 1999/2000, however. Both regionally and nationally, populations have shown steady increases over the last 25 years.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CO, **GA**, GG, GN, LG, PO, **SV**, T., TU, WN		CO, **GA**, GG, GN, LG, PO, **SV**, T., TU	WN
	Decreasing	CA		CA	
10-year trend	Increasing or stable	CO, **GA**, GG, GN, LG, PO, **SV**, T., TU, WN		CO, **GA**, GG, GN, LG, PO, **SV**, T., TU	WN
	Decreasing	CA		CA	
25-year trend[1]	Increasing or stable				
	Decreasing				

Table 3.8.14.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Rutland Water SPA.

[1] Data not available for this time-period.

3.8.15 Stour and Orwell Estuaries — Further investigation recommended

17 Evaluated Species: Great Crested Grebe, Cormorant, Mute Swan, Dark-bellied Brent Goose, **Shelduck**, Wigeon, **Pintail**, Goldeneye, Oystercatcher, **Ringed Plover**, **Grey Plover**, Knot, **Dunlin**, **Black-tailed Godwit**, Curlew, **Redshank**, **Turnstone**

High Alert: **Ringed Plover**[5,10] (1)

Medium Alert: Great Crested Grebe[5], Cormorant[10], Mute Swan[25], **Shelduck**[5], Wigeon[5], **Pintail**[5,25], **Ringed Plover**[25], **Grey Plover**[5], **Dunlin**[5,10], **Black-tailed Godwit**[5], **Redshank**[25] (11)

The Stour and Orwell Estuaries SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered, for various time-scales, for seven out of the eight species for which the Stour and Orwell Estuaries SPA is internationally important, the majority over the 5-year time period. In six of these cases, regional or national populations are stable or increasing.
- Medium Alerts have also been triggered, for various time-scales, for four other species for which the Stour and Orwell Estuaries SPA is important.

The populations of 11 of the 17 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is highly recommended. It is possible that Cormorants are increasingly using inland sites in this region (such as Abberton Reservoir) at the expense of coastal sites. Declines in Great Crested Grebe numbers have also been noted at other nearby SPAs – the Blackwater Estuary, Colne Estuary and Dengie. This might suggest that there is a wider issue regarding these two species in this region. Further investigation should focus initially on factors such as habitat loss due to erosion and urban development, and changes in water quality resultant from improvements to waste water discharges, especially since the mid 1990s, since when many of the species have been in decline.

Details

The SPA comprises two WeBS sites: the Stour Estuary and the Orwell Estuary. Small areas counted at these sites for WeBS are outside the SPA boundary, but the waterbirds that use them are considered to also use the SPA.

Table 3.8.15.1 shows the summarised comparisons between the site trend and the national and regional population trends of species cited for the Stour and Orwell Estuaries SPA over the most recently available 5-year, 10-year and 25-year periods. Table 3.8.15.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Stour and Orwell Estuaries SPA over the 5-year, 10-year and 25-year time periods.

The **Shelduck** population at the Stour and Orwell Estuaries SPA has varied from year to year, but shown no overall trend over the last 25 years. A recent decline has triggered a 5-year Medium Alert, although it is unclear whether this trend will be continued. An average of 2,300 birds occurred in the winter of 1999/2000. In the Anglian region, the **Shelduck** population has also shown declines over the last 5-year and 10-year periods, but been stable in the long-term. In contrast, the national population has shown no trend over any of the three time periods.

Pintail numbers at the Stour and Orwell Estuaries SPA have fluctuated since counts began in 1966/67 with peaks in the early 1970s and mid-1990s. A decline in recent years has triggered 5-year and 25-year Medium Alerts. An average of 330 birds was recorded in the winter of 1999/2000. This decline is in contrast to the regional trend, although nationally, **Pintail** have also shown a decline over the last 25 years.

The **Ringed Plover** population at the Stour and Orwell Estuaries SPA increased through the 1970s and early 1980s, before stabilising during the late 1980s and early 1990s. A peak mean of 750 birds occurred in 1988/89. A rapid and substantial decline occurred between 1995 and 1999, this triggering a High Alert for both the 5-year and 10-year periods, as well as a Medium Alert for the 25-year period. An average of just 130 birds was recorded in the winter of 1999/2000. The declining trends are also seen at the national level over the 10-year and 25-year periods, although the declines at the site are proportionally much greater. Regionally, there has been a slight increase over the 25-year period.

The **Grey Plover** population at the Stour and Orwell Estuaries SPA increased considerably between the 1970s and early 1990s, from a mean of 100 birds in 1970/71 to over 4,100 in 1994/95, reflecting both the regional and national trends. A decline at the site since the peak in the mid-1990s has triggered a 5-year Medium Alert. Numbers averaged 1,800 birds in the winter of 1999/2000. Both nationally and in the Anglian region, the **Grey Plover** population has been stable over this time period. Despite the recent decline at the site, the conservation status of **Grey Plover** at the current time must be regarded as generally very favourable. However, any continuation of the decline would warrant further investigation.

The trend in the **Dunlin** population at the Stour and Orwell Estuaries SPA initially followed both the regional and national trends, with a decline in the late 1970s and a recovery in the late 1980s. However, while the regional and national populations have since stabilised, a decline has occurred at the site, triggering both 5-year and 10-year Medium Alerts. An average of 13,000 birds occurred in the winter of 1999/2000.

Black-tailed Godwit numbers at the Stour and Orwell Estuaries SPA have increased considerably since 1970/71 from near-absence to a peak of over 2,400 in 1995/96. Numbers have declined since then, however, and this has triggered a 5-year Medium Alert. An average of 1,100 birds occurred in the winter of 1999/2000. This decline contrasts with the regional and national trends, which show continuing increases.

Numbers of **Redshank** at the Stour and Orwell Estuaries SPA have fluctuated over the last 25 years, peaking in the mid-1980s and again in the mid-1990s. There has been an overall declining trend, however, and this has triggered a Medium Alert for the 25-year period. Numbers averaged 2,800 birds in the winter of 1999/2000. The regional indices have also fluctuated in the long-term, but with a generally increasing trend, particularly in the last 10 years. Nationally, the **Redshank** population has remained stable over the last 25 years.

The internationally important population of **Turnstone** at the site has increased greatly in size over the 5-year and 25-year time scales. An average of over 600 birds occurred in the winter of 1999/2000. Both regionally and nationally, there have been slight decreases in the last 10-year period, though long-term trends are stable.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CA, CU, DB, GN, KN, MS, OC, **RK**, **TT**		CA, CU, DB, GN, KN, MS, OC, **RK**, **TT**	
	Decreasing	**BW**, **DN**, GG, **GV**, **PT**, **RP**, **SU**, WN		**BW**, **DN**, GG, **GV**, **PT**, **RP**	**SU**, WN
10-year trend	Increasing or stable	**BW**, CU, DB, GG, GN, **GV**, MS, OC, **RK**, **SU**, WN	KN, **PT**, **TT**	**BW**, CU, DB, GG, GN, **GV**, MS, **RK**, **TT**	KN, OC, **PT**, **SU**, WN
	Decreasing	CA, **DN**	**RP**	CA, **DN**, **RP**	
25-year trend[1]	Increasing or stable	**BW**, CU, DB, GN, **GV**, KN, OC, **SU**, **TT**, WN	**DN**	**BW**, CU, DB, **DN**, GN, **GV**, KN, OC, **SU**, **TT,** WN	
	Decreasing	MS, **RK**	**PT**, **RP**	MS, **PT**, **RK**, **RP**	

Table 3.8.15.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for the Stour and Orwell Estuaries SPA.

[1] Great Crested Grebe and Cormorant data not available for this time-period.

3.8.16 The Wash **Further investigation recommended**

20 Evaluated Species: Little Grebe, Cormorant, *Whooper Swan*, **Dark-bellied Brent Goose**, **Shelduck**, Wigeon, Mallard, **Pintail**, **Oystercatcher**, *Avocet*, Ringed Plover, **Grey Plover**, **Knot**, Sanderling, **Dunlin**, **Black-tailed Godwit**, *Bar-tailed Godwit*, **Curlew**, **Redshank**, **Turnstone**

High Alert: Little Grebe[5], *Whooper Swan*[5,10,25], **Shelduck**[10], Wigeon[5,25], **Pintail**[5,10], **Oystercatcher**[10], *Avocet*[5] (7)

Medium Alert: **Shelduck**[5], Wigeon[10], Mallard[5,10], **Grey Plover**[10], **Knot**[10], **Turnstone**[10,25] (6)

The Wash SPA also supports nationally important numbers of *Golden Plover* and internationally important numbers of **Pink-footed Goose** *Anser brachyrhynchus* in winter and is also cited for European White-fronted Goose and Lapwing (Stroud *et al.* 2001). However, insufficient data were available from WeBS to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for six of the 11 species for which The Wash SPA is internationally important and for which data were evaluated – High Alerts being triggered for **Shelduck**, **Pintail** and **Oystercatcher**.
- Alerts were also triggered for a further five species for which the site is important.

The populations of 11 of the 20 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is highly recommended. Further investigation should focus initially on factors such as habitat loss due to land-claim, sedimentation and dredging, eutrophication, pollution from agriculture, overexploitation of cockle and other fisheries, and changes in disturbance intensity (including from military activities).

Details

The Wash is the largest estuarine system in England, fed by the Rivers Witham, Welland, Nene and Great Ouse. The SPA includes extensive saltmarsh and extensive mudflats and intertidal sand- and mud-flats. Also included are the Snettisham gravel pits, which are an important high-tide roost for waders.

Table 3.8.16.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species cited for The Wash SPA, over the 5-year, 10-year and 25-year periods. Table 3.8.16.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at The Wash SPA over the 5-year, 10-year and 25-year time periods.

Little Grebe numbers on The Wash rose to a peak mean of 84 birds in the winter of 1995/96, but have since declined sharply. This has triggered a High Alert for the 5-year period. An average of just 20 birds was recorded in the winter of 1999/2000. Both regionally and nationally, numbers have risen over the 5-year and 10-year periods.

Whooper Swan numbers at the site have fluctuated greatly over the last 25-years, peaking at an average of 50 or more birds in the winters of 1982/83, 1991/92 and 1994/95. Numbers have declined to very low levels since, however, triggering High Alerts for the 5-year, 10-year and 25-year periods. Both regionally and nationally, numbers have risen over all three time periods. During this time, numbers at the neighbouring Ouse Washes have risen dramatically.

The numbers of **Dark-bellied Brent Goose** wintering on The Wash rose through the 1970s and 1980s, though in the last decade numbers have been stable. In recent winters, the population has averaged over 18,000 birds. The trends in the population using the site mirror both regional and national changes.

The **Shelduck** population on The Wash rose through the 1970s, but since the early 1980s has been decreasing steadily. This decline has triggered a High Alert for the 10-year period and a Medium Alert for the 5-year period. In the last winter of 1999/2000, numbers averaged 5,900 birds. Both regionally and nationally, however, numbers have been stable over the last 25 years.

Wigeon numbers on The Wash have shown great fluctuations, but a general downward trend over the last 25 years. In recent winters, numbers have averaged 700 birds. High Alerts have been triggered for the 5-year and 25-year periods and a Medium Alert for the 10-year period due to the decline. Regionally, numbers have shown a small decline over the last 5-year and 10-year periods, though have been stable in the longer-term. Nationally, the population rose between the 1970s and 1990s.

Pintail numbers on The Wash rose to a peak of over 3,700 birds in the winter of 1988/89, but have since returned to previous lower levels. An average of just 77 birds has been recorded in recent winters. This fall has triggered High Alerts for the 5-year and 10-year periods and has occurred despite stability in the regional population. Nationally, there has been a slight fall in numbers over the last 10 years.

Oystercatcher numbers at the site rose steadily through the 1970s and 1980s to a peak mean of over 40,000 in 1988/89. A decline since then has triggered a 10-year High Alert. Numbers recently have averaged just over 12,000. This decline has occurred whilst the population elsewhere within the region has been steadily increasing over the last 25 years and during a period of stability in the national population. The survival rates of **Oystercatcher** at The Wash are closely linked to the availability of their favoured cockle prey and over fishing of cockles has been implicated in their decline (Atkinson *et al.* 2000).

Very few *Avocet* used to winter on The Wash during the 1970s and 1980s, but, as elsewhere within the region, numbers rose during the early 1990s, and there was a peak of 71 birds in 1994/95. Numbers since have fluctuated markedly and a High Alert was triggered for an apparent decline over the recent 5-year period. Regionally and nationally, numbers have been rising steadily since the early 1980s and assuming that this trend continues, it is likely that the decline at The Wash will be short-lived.

The numbers of **Grey Plover** wintering on The Wash rose steadily during the 1980s, but in the last decade have shown a slight decline. This has resulted in a Medium Alert for the 10-year period being triggered. Recent winter numbers have averaged 5,100 birds. Both regionally and nationally, numbers rose steadily between the mid-1970s and mid-1990s, though have since stabilised or perhaps even begun to fall.

Over one quarter of the British population of **Knot** winters on The Wash. Numbers on the site declined during the mid-1970s, before recovery and rising to a peak of over 113,000 birds in 1990/91. Their numbers declined again in the following five years, this triggering a 10-year High Alert. More recently, numbers have been more stable at around 42,000 birds. Elsewhere in the region, populations have increased over the 25-year period, though they have been relatively stable in the last 10 years. The remainder of the national population has shown a slight decline over the 25-year period, though has also been relatively stable in the last 10 years.

The **Dunlin** population on The Wash has fluctuated considerably from year to year. A peak in the late 1980s was followed by a slight decline. In recent winters, numbers have fluctuated between 22,000 and 36,000 birds. Elsewhere within the region the population rose steadily between the early 1980s and mid-1990s. Nationally, there has been a decline over the 25-year period, though numbers partially recovered during the mid-1990s.

Numbers of **Black-tailed Godwit** wintering on The Wash have increased markedly since the early 1980s. Over 1,400 **Black-tailed Godwit** used the site during the winter of 1999/2000. The increase mirrors both the regional and national trends.

The numbers of *Bar-tailed Godwit* wintering on The Wash have also increased in recent decades. Increases of greater than 25% were recorded over the 25-year and 10-year periods and an average of 11,000 birds reported in recent winters. Elsewhere regionally, numbers have also risen over these time periods, though have declined over the last three winters. Elsewhere nationally, there has been a slight decline over the 25-year period.

Curlew numbers on The Wash have risen slowly over all three time periods considered. An average of over 2,900 birds has occurred in recent winters. The change reflects both the regional and national trends.

Redshank numbers fluctuated greatly at the site between the late 1970s and mid-1990s, peaking at over 5,000 birds in 1987/88. There was a slight decline in the years following this, before numbers stabilised. An average of 2,000 birds has been recorded in recent winters. Elsewhere regionally, numbers have risen in the last 10-year period, whilst nationally numbers have been largely stable over the three time-periods considered.

The **Turnstone** population on The Wash has shown very large fluctuations since counts began in 1970/71. There has been a general downtrend over the recent 10-year and 25-year periods, however, and this has triggered Medium Alerts for these periods. Regionally, the population has increased over the 25-year period, whilst nationally there has been a slight decrease over the last 10 years after an earlier period of increase.

	Site trend	**National trend (GB)**		**Regional trend (Anglian)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*BA*, **BW**, CA, **CU**, **DB**, **DN**, **GV**, **KN**, **OC**, **RK**, RP, SS, **TT**		*BA*, **BW**, CA, **CU**, **DB**, **DN**, **GV**, **KN**, **OC**, **RK**, RP, SS, **TT**	
	Decreasing	*AV*, EW, LG, MA, **PT**, **SU**, WN, *WS*		*AV*, EW, LG, MA, **PT**, **SU**, *WS*	WN
10-year trend	Increasing or stable	*AV*, *BA*, **BW**, CA, **CU**, **DB**, **DN**, LG, **RK**, SS	RP	*AV*, *BA*, **BW**, CA, **CU**, **DB**, **DN**, LG, **RK**, RP, SS	
	Decreasing	**GV**, **KN**, **OC**, **PT**, **SU**, WN, *WS*	EW, MA, **TT**	EW, **GV**, **KN**, **OC**, **PT**, **SU**, **TT**, *WS*	MA, WN
25-year trend[1]	Increasing or stable	*AV*, *BA*, **BW**, **CU**, **DB**, **GV**, **OC**, **RK**, SS, **SU**	**DN**, **KN**, **PT**, RP	*AV*, *BA*, **BW**, **CU**, **DB**, **DN**, **GV**, **KN**, **OC**, **PT**, **RK**, RP, SS, **SU**	
	Decreasing	EW, **TT**, WN, *WS*		EW, **TT**, WN, *WS*	

Table 3.8.16.1 Summary of comparisons between the site trend and the national and regional (EA Anglian region) population trends of cited species for The Wash SPA.

[1] Little Grebe, Cormorant and Mallard data not available for this time-period.

3.9 Anglian and Northeast Regions

3.9.1 Humber Flats, Marshes and Coast — No further investigation recommended

18 Evaluated Species: Cormorant, Dark-bellied Brent Goose, **Shelduck**, Wigeon, Teal, Mallard, Pochard, Goldeneye, Oystercatcher, Ringed Plover, Grey Plover, **Knot**, Sanderling, **Dunlin**, Black-tailed Godwit, *Bar-tailed Godwit*, Curlew, **Redshank**

High Alert: Mallard[10,25], Pochard[5] (2)

Medium Alert: Mallard[5] (1)

The Humber Flats, Marshes and Coast SPA also supports nationally important numbers of *Bittern* and *Golden Plover* in winter and is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- No Alerts were triggered for any species for which the Humber Flats, Marshes and Coast SPA is internationally or nationally important.
- High Alerts were triggered for two other species, however – Mallard and Pochard.

The populations of 16 of the 18 species for which the SPA is important (and for which data were evaluated) are stable or increasing and thus, there is little cause for concern at the site. Adverse factors reported at the site include habitat loss due to dredging and erosion and changes in water quality resultant from improvements to waste water discharges.

Details

The Humber Flats, Marshes and Coast SPA is located on the east coast of England and provides the largest single input of freshwater from Great Britain into the North Sea. The SPA comprises extensive sand- and mud-flats (that cover one third of the estuary at low tide), as well as saltmarsh, grazing marsh, brackish pools and in its inner reaches, reedbeds.

Table 3.9.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Humber Flats, Marshes and Coast SPA is important, over the 5-year, 10-year and 25-year periods. Combined Anglian and Northeast regional trends are used for this comparison. Table 3.9.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Humber Flats, Marshes and Coast SPA over the 5-year, 10-year and 25-year time periods.

The **Shelduck** population on the Humber Flats, Marshes and Coast rose between the mid-1970s and mid-1980s, though since then has fluctuated and shown no clear trend. An average of 2,800 has been recorded in recent winters. Regionally, there has been a slight decrease over the last decade, though nationally, numbers have been more stable.

In contrast, the numbers of Mallard recorded on the site have declined steadily since the first counts in 1974/75. High Alerts were triggered for the 10-year and 25-year periods and a Medium Alert for the 5-year period. An average of 660 was recorded in winter 1999/2000. Both regionally and nationally, there have also been steady declines since the late 1980s, following earlier periods of stability.

Pochard numbers on the Humber rose from very low levels to a peak of over 1,000 birds in 1993/94, but have since declined. An average of 200 was recorded in the winter of 1999/2000 – still much higher than numbers prior to the 1990s. As a result of the decline, a High Alert has been triggered for

the 5-year period. Regionally, numbers have increased in the last decade, though nationally there has been greater stability.

Knot numbers on the Humber Flats, Marshes and Coast SPA have fluctuated over the last 25 years, though shown no clear trend. Numbers have averaged over 20,000 birds in recent winters. Both regionally and nationally, populations recovered during the 1980s from declines in the early 1970s, though in the last decade there have been slight declines.

Dunlin numbers on the Humber have been very stable over the last 25 years, averaging over 22,000 in recent winters. Both regionally and nationally, there were slight declines in numbers in the mid-1980s and nationally, an overall downward trend over the last 25 years.

Numbers of *Bar-tailed Godwit* wintering on the Humber have risen steadily since the early 1970s and a monthly average of 2,600 was recorded in the winter of 1999/2000. Elsewhere regionally, numbers have also risen over the 25-year time period, while nationally, numbers have been more stable.

The numbers of Redshank wintering on the Humber Flats, Marshes and Coast fell from a peak in the mid-1970s, but since the early 1980s have steadily recovered. An average of 4,300 occurred in the winter of 1999/2000. Regionally, there has been a slight increase in the population in the last decade after an earlier period of stability. Nationally, numbers have been more stable throughout the three time periods.

	Site trend	**National trend (GB)**		**Regional trend (Anglian & Northeast)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*BA*, BW, CA, CU, DB, **DN**, GN, GV, **KN**, OC, **RK**, RP, SS, **SU**, T., WN		*BA*, BW, CA, CU, DB, **DN**, GN, GV, **KN**, OC, **RK**, RP, SS, T.	**SU**, WN
	Decreasing	MA, PO		MA, PO	
10-year trend	Increasing or stable	*BA*, BW, CA, CU, DB, **DN**, GN, GV, **KN**, OC, PO, **RK**, SS, **SU**, T., WN	RP	*BA*, BW, CA, CU, DB, **DN**, GN, GV, PO, **RK**, RP, SS, T., WN	**KN**, OC, **SU**
	Decreasing		MA		MA
25-year trend[1]	Increasing or stable	*BA*, BW, CU, DB, GN, GV, **KN**, OC, PO, **RK**, SS, **SU**, T., WN	**DN**, RP	*BA*, BW, CU, DB, **DN**, GN, GV, **KN**, OC, PO, **RK**, RP, SS, **SU**, T., WN	
	Decreasing	MA			MA

Table 3.9.1.1 Summary of comparisons between the site trend and the national and regional (EA Anglian & Northeast region) population trends of cited species for the Humber Flats, Marshes and Coast SPA.

[1] Cormorant data not available for this time-period.

3.10 Northeast Region

3.10.1 Hornsea Mere **No further investigation recommended**

1 Evaluated Species: **Gadwall**

High Alert: none

Medium Alert: none

Data were not available from 1974/75 for this site and thus it was not possible to calculate percentage change figures or Alerts for the 25-year period.

Summary

- The one species present at the Hornsea Mere SPA at a level of international importance – **Gadwall** – has increased in number since the 1960s (mirroring the regional and national trends).

There is thus no cause for concern for the one species for which the SPA is important. No direct adverse factors have been identified from the literature for the Hornsea Mere SPA.

Details

The Hornsea Mere SPA is a large freshwater lake of glacial origin located on Yorkshire coast. It is a shallow, eutrophic lake, fringed with reedbeds, fen and willow and alder carr.

Table 3.10.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Hornsea Mere SPA is internationally important, over the 5-year, 10-year and 25-year periods. Table 3.10.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Hornsea Mere SPA over the 5-year, 10-year and 25-year time periods.

No Alerts were triggered at this site. The one species present at the site at a level of international importance – **Gadwall** – has increased greatly in number since counts began in the 1960s. There was an increase of over 100% over the 10-year period, though some evidence of stability over the last 5 years. An average of 190 birds was recorded in the winter of 1999/2000. It was not possible to calculate a percentage change figure for the 25-year period due to a lack of count data. The increase in the species' numbers at the site reflects both regional and national trends.

	Site trend	National trend (GB)		Regional trend (Northeast)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**GA**		**GA**	
	Decreasing				
10-year trend	Increasing or stable	**GA**		**GA**	
	Decreasing				
25-year trend[1]	Increasing or stable				
	Decreasing				

Table 3.10.1.1 Summary of comparisons between the site trend and the national and regional (EA Northeast region) population trends of cited species for the Hornsea Mere SPA.

[1] **Gadwall** data not available for this time-period.

3.10.2 Lindisfarne **Further investigation recommended**

9 Evaluated Species: *Whooper Swan*, Shelduck, **Wigeon**, Ringed Plover, **Grey Plover**, **Knot**, Dunlin, *Bar-tailed Godwit*, Redshank

High Alert: *Whooper Swan*[10,25], **Wigeon**[25], Ringed Plover[10,25], **Knot**[25], Dunlin[25], Redshank[10] (6)

Medium Alert: *Whooper Swan*[5], **Wigeon**[10], Ringed Plover[5], **Grey Plover**[5,10], **Knot**[5], *Bar-tailed Godwit*[10,25], Redshank[25] (7)

The Lindisfarne SPA also supports nationally important numbers of *Golden Plover* and internationally important numbers of **Greylag Goose** and **Light-bellied Brent Goose** in winter and is also cited for Pink-footed Goose, Eider, Common Scoter and Lapwing (Stroud *et al.* 2001). However, insufficient data were available to determine trends in these species' numbers over the time periods considered.

Summary

- High Alerts were triggered for two of the species for which the Lindisfarne SPA is internationally important and for which data were evaluated – **Wigeon** and **Knot** – and Medium Alerts triggered for the other – **Grey Plover**.
- Alerts were also triggered for five other species for which the site is also important.

The populations of eight of the nine species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of the population declines is recommended, particularly for those species such as **Wigeon**, Dunlin and Redshank whose numbers have fallen so dramatically at the site and contrary to regional trends. Further investigation into possible remedial action should focus initially on factors such as habitat loss, such as that caused by *Spartina* encroachment, and changes in recreational disturbance intensity.

Details

The island of Lindisfarne is situated off the coast of Northumberland. The SPA comprises the extensive intertidal areas that lie between the island and the mainland, and neighbouring Budle Bay. Habitats included within the SPA include rocky shores, saltmarsh and sand- and mud-flats with extensive areas beds of Eelgrass.

Table 3.10.2.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Lindisfarne SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.10.2.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Lindisfarne SPA over the 5-year, 10-year and 25-year time periods.

The numbers of *Whooper Swan* wintering at Lindisfarne have been declining steadily since the winter of 1969/70, when numbers peaked at 410 birds. In recent winters, numbers have averaged just 12. High Alerts were triggered for the 10-year and 25-year periods and a Medium Alert for the 5-year period. Regionally, numbers have increased over the last 5-year and 10-year periods, after an earlier decline, though shown no trend over the 25-year period. Nationally, the population has increased by over 25% over each of the three time periods.

Wigeon numbers at Lindisfarne have followed a similar pattern to those of Whooper Swan, declining from a peak in 1970/71 of 12,000 birds until the late 1980s after which numbers stabilised. In recent winters, an average of 1,300 birds has used the site. A High Alert was triggered for the 25-year period and a Medium Alert for the 10-year period. Both regionally and nationally, numbers have shown

steady increases up until the last 5 years. The decline of Wigeon at Lindisfarne has been linked to the spread of *Spartina anglica* over their intertidal feeding grounds (Percival *et al.* 1998).

The Ringed Plover population at Lindisfarne rose during the 1970s and 1980s to a peak of 440 birds in 1985/86, but has since declined. An average of 58 has occurred in recent winters. High Alerts were triggered for the 10-year and 25-year periods, and a Medium Alert for the 5-year period. Elsewhere regionally, Ringed Plover numbers have been largely stable over the three time periods considered, while nationally the population has also been in decline.

The numbers of **Grey Plover** at Lindisfarne rose sharply in the mid-1980s, remained relatively stable for a decade afterwards, but since 1997/98 have shown a sharp decline. Medium Alerts have thus been triggered for the 5-year and 10-year periods. An average of 580 birds occurred in the winter of 1999/2000. Both regionally and nationally, numbers increased from the 1970s, though as at Lindisfarne there has been a recent drop in numbers at the regional level.

Knot fell sharply in number at Lindisfarne during the 1970s, from a peak of over 11,000 birds in 1974/75. Although there was a slight recovery during the early 1990s, numbers have dropped in the last five years. A High Alert was triggered for the 25-year period and a Medium Alert for the 5-year period. Both regionally and nationally, numbers have declined slightly since the early 1970s.

Numbers of Dunlin rose sharply at Lindisfarne during the 1970s to a peak of 32,000 birds in 1979/80, but then dropped just as sharply over the following five years. Numbers have remained largely stable since, averaging 6,400 birds in recent winters. Both regionally and nationally, Dunlin numbers have shown a slight decline over the 25-year period. The decline of Dunlin at Lindisfarne, as with that of Wigeon, has been linked to the spread of *Spartina anglica* over their intertidal feeding grounds (Evans 1986).

Bar-tailed Godwit numbers at Lindisfarne rose to a peak of 6,800 birds in 1986/87, but declined over the following decade. Numbers over recent winters have been more stable, averaging 2,400 birds, though are less than those recorded in the late 1970s and early 1980s. The decline has triggered Medium Alerts for both the 10-year and 25-year periods. Elsewhere regionally, numbers have risen sharply in the last 5 years and thus over the 25-year period as a whole. Nationally, the population has been more stable.

The population of Redshank rose during the 1970s and 1980s and numbered 3,200 birds in 1989/90. The population crashed dramatically over the next two winters and despite some signs of recovery, has averaged only 810 birds in recent years. Regionally, numbers have risen steadily over the last 25 years, while nationally the population has been more stable.

	Site trend	National trend (GB)		Regional trend (Northeast)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*BA*, DN, RK, SU, **WN**		*BA*, DN, RK, SU, **WN**	
	Decreasing	**GV**, **KN**, RP,*WS*		**KN**, RP, *WS*	**GV**
10-year trend	Increasing or stable	DN, **KN**, SU		DN, **KN**, SU	
	Decreasing	*BA*, **GV**, RK, **WN**, *WS*	RP	*BA*, **GV**, RK, RP, **WN**, *WS*	
25-year trend	Increasing or stable	**GV**, SU		**GV**, SU	
	Decreasing	*BA*, **KN**, RK, **WN**, *WS*	DN, RP	*BA*, **KN**, RK, RP, **WN**, *WS*	DN

Table 3.10.2.1 Summary of comparisons between the site trend and the national and regional (EA Northeast region) population trends of cited species for the Lindisfarne SPA.

3.10.3 Lower Derwent Valley **Further investigation recommended**

5 Evaluated Species: *Bewick's Swan*, Wigeon , **Teal**, Mallard, Pochard

High Alert: *Bewick's Swan*[25], Pochard[5] (2)

Medium Alert: *Bewick's Swan*[5], Wigeon[5] (2)

The Lower Derwent Valley SPA also supports nationally important numbers of *Bittern*, *Golden Plover* and *Ruff* in winter and is also cited for Shoveler and Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered. Count data were not available from some winters and thus percentage change figures (and alert information) could not be calculated for the 10-year period or, for **Teal** and Mallard, for the 25-year period.

Summary

- Alerts were triggered for three species for which the Lower Derwent Valley SPA is important in winter – High Alerts for *Bewick's Swan* and Pochard.
- The population of **Teal**, for which the site is internationally important, has increased over the last five years.

The populations of three of the five species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of the population declines, particularly that of *Bewick's Swan*, is highly recommended. No direct adverse factors have been identified from the literature for the Lower Derwent Valley SPA. However, further investigation should focus on the possibility that the declines are related to the degree of winter flooding. The trends should be treated with some degree of caution, however, as not all of the birds that use the SPA may be counted by WeBS.

Details

The Lower Derwent Valley is a large floodplain system in Yorkshire. Habitats within the SPA include alluvial flood meadows, fens, swamps, valley mire and Alder carr. The SPA also includes the subsumed SPA of Derwent Ings, although not all of the site may be covered by WeBS counts each winter.

Table 3.10.3.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Lower Derwent Valley SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.10.3.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Lower Derwent Valley SPA over the 5-year, 10-year and 25-year time periods.

Bewick's Swan numbers at the Lower Derwent Valley SPA have shown great fluctuations from year to year, probably reflecting the degree of seasonal flooding. Since a peak of 164 birds in the winter of 1979/80, there has been a downward trend in numbers and a High Alert has been triggered for the 25-year period and a Medium Alert for the 5-year period. Few *Bewick's Swans* winter elsewhere within the Northeast region. Nationally, numbers rose between the early 1970s and mid-1980s, but have since shown no clear trend.

The numbers of **Teal** at the site have risen sharply since the mid-1980s and an average of 1,400 was recorded in the winter of 1999/2000. Both regionally and nationally, numbers rose over the 25-year period, though recently the rate of increase has slowed.

Pochard numbers at the Lower Derwent Valley, like those of *Bewick's Swan*, have also fluctuated between years. Numbers rose to a peak of 800 birds in the winter of 1997/98 but have dropped sharply since. An average of just 71 wintered in 1999/2000. This drop has triggered a High Alert for the 5-year period, though the long-term trend for the species is unclear. Regionally, Pochard numbers have risen over the 10-year period, though nationally the trend has been more stable.

	Site trend	National trend (GB)		Regional trend (Northeast)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	MA, **T.**		MA, **T.**	
	Decreasing	*BS*, PO, WN		PO, WN	*BS*
10-year trend[1]	Increasing or stable				
	Decreasing				
25-year trend[2]	Increasing or stable	PO, WN		PO, WN	
	Decreasing	*BS*			*BS*

Table 3.10.3.1 Summary of comparisons between the site trend and the national and regional (EA Northeast region) population trends of cited species for the Lower Derwent Valley SPA.

[1] *Bewick's Swan*, Wigeon, **Teal**, Mallard and Pochard data not available for this time-period.
[2] **Teal** and Mallard data not available for this time-period.

Please also note that few *Bewick's Swan* winter elsewhere within the Northeast region and that comparison with the regional trend is therefore of limited value for this species.

3.10.4 Northumbria Coast **Further investigation recommended**

1 Evaluated Species: **Turnstone**

High Alert: none

Medium Alert: **Turnstone**[10,25]

The Northumbria Coast SPA also supports internationally important numbers of **Purple Sandpiper** in winter (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Medium Alerts were triggered for **Turnstone**, the one species present at the Northumbria Coast SPA at a level of importance and for which data were evaluated, for the 10-year and 25-year time scales.

There has been a decline in the numbers of the one species for which data were evaluated and there is thus cause for concern at this SPA, even though the causes of the species' decline may not be site-specific. Adverse factors at this site include changes in water quality resultant from improvements to waste water discharges.

Details

The Northumbria Coast SPA includes much of the coastline between the Tweed and Tees Estuaries in north-east England. The SPA comprises discrete sections of primarily rocky coast with boulder and cobble beaches, as well as artificial piers which act as roost sites for waders. Only parts of the SPA are covered by WeBS Core Counts.

Table 3.10.4.1 shows the summarised comparisons between the site trend and the national and regional population trends for the one species for which the Northumbria Coast SPA is important (and for which data were evaluated), over the 5-year, 10-year and 25-year periods. Table 3.10.4.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Northumbria Coast SPA over the 5-year, 10-year and 25-year time periods.

The numbers of **Turnstone** using the Northumbria Coast SPA declined between the late 1980s and mid-1990s, triggering Medium Alerts for the 10-year and 25-year periods. More recently, numbers have become more stable, averaging 600 birds in the last 5 years. Both regionally and nationally there have also been declines in the last 10 years (though only the latter has been over 25%).

	Site trend	National trend (GB)		Regional trend (Northeast)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	**TT**		**TT**	
	Decreasing				
10-year trend	Increasing or stable				
	Decreasing		**TT**	**TT**	
25-year trend	Increasing or stable				
	Decreasing	**TT**		**TT**	

Table 3.10.4.1 Summary of comparisons between the site trend and the national and regional (EA Northeast region) population trends of cited species for the Northumbria Coast SPA.

3.10.5 Teesmouth and Cleveland Coast — Further investigation recommended

6 Evaluated Species: Cormorant, Shelduck, Ringed Plover, **Knot**, Sanderling, **Redshank**

High Alert: Shelduck[5,10,25], **Knot**[5,25] (2)

Medium Alert: Ringed Plover[25], **Knot**[10], Sanderling[25] (3)

The Teesmouth and Cleveland Coast SPA is also cited for Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for one of the two species for which the Teesmouth and Cleveland Coast SPA is internationally important – **Knot**.
- Alerts were also triggered for three other species for which the site is important.

The populations of four of the six species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is recommended, particularly for those of Shelduck and **Knot**, which have occurred despite earlier partial recovery from habitat loss. Further investigation should focus initially on factors such as habitat loss due to sedimentation following land-claim, eutrophication, pollution and changes in disturbance intensity.

Details

The Teesmouth and Cleveland Coast SPA is centred around the estuary of the River Tees on the coast of north-east England. Habitats included within the SPA include sand- and mud-flats, rocky shore, saltmarsh, freshwater marsh and sand dunes. The Tees Estuary has been considerably modified by man over time, and a large proportion of the intertidal habitat was lost to land-claim in 1973 and 1974 (Evans 1978/79).

Table 3.10.5.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Teesmouth and Cleveland Coast SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.10.5.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Teesmouth and Cleveland Coast SPA over the 5-year, 10-year and 25-year time periods.

The population of Shelduck using the Teesmouth and Cleveland Coast SPA showed a clear low during the period of habitat loss in the early 1970s. Although numbers partially recovered over the following two years, the population has declined steadily ever since, triggering High Alerts for all three time periods. An average of 690 used the site in the winter of 1999/2000. Elsewhere, regionally, there has been a fluctuating increase over the 25-year period, while, nationally, numbers have remained more stable.

As with the previous species, the population of **Knot** dropped during the period of habitat loss in the early 1970s. Numbers then rose during the rest of the decade, but since the early 1980s, there has been a steady decline. High Alerts were triggered for the 5-year and 25-year periods and a Medium Alert for the 10-year period. An average of 800 Knot was recorded in the winter of 1999/2000. Elsewhere regionally, numbers have shown a slight decline over the 25-year period. Nationally, numbers rose during the 1980s after a decline in the 1970s, but have since been more stable.

The numbers of **Redshank** at the Teesmouth and Cleveland Coast fell during the early 1970s, perhaps also as a result of the habitat loss at the site, but have risen steadily since. An average of 740 birds occurred in the winter of 1999/2000. Both regionally and nationally, numbers rose in the late 1980s, but have shown no clear trend over the last 25 years.

	Site trend	National trend (GB)		Regional trend (Northeast)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CA, **RK**, RP, SS		CA, **RK**, RP, SS	
	Decreasing	**KN**, SU		**KN**, SU	
10-year trend	Increasing or stable	CA, **RK**, SS	RP	CA, **RK**, SS	RP
	Decreasing	**KN**, SU		**KN**, SU	
25-year trend[1]	Increasing or stable	**RK**		**RK**	
	Decreasing	**KN**, SS, SU	RP	RP, SS, SU	**KN**

Table 3.10.5.1 Summary of comparisons between the site trend and the national and regional (EA Northeast region) population trends of cited species for the Teesmouth and Cleveland Coast SPA.

[1] Cormorant data not available for this time-period.

3.11 Northwest Region

3.11.1 Duddon Estuary **Further investigation recommended**

10 Evaluated Species: Shelduck, **Pintail**, Red-breasted Merganser, Oystercatcher, Ringed Plover, **Knot**, Sanderling, Dunlin, Curlew, **Redshank**

High Alert: Shelduck[5], **Pintail**[5,10], **Knot**[5,10,25] (3)

Medium Alert: Shelduck[10,25], Ringed Plover[5,10], Sanderling[5,10], Dunlin[5] (4)

Summary

- High Alerts were triggered for two of the three species for which the Duddon Estuary SPA is internationally important and for which data were evaluated – **Pintail** and **Knot**.
- Alerts were also triggered for a further four species for which the site is also important.

The populations of six of the 10 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of the population declines is highly recommended. Further investigation should focus initially on factors such as habitat loss due to overgrazing of marshland, changes in water quality resultant from improvements to waste water discharges and changes in recreational disturbance intensity.

Details

The Duddon Estuary SPA is located on the coast of Cumbria, northwest of the larger Morecambe Bay. Intertidal sand- and mud-flats are edged by both grazed and ungrazed areas of saltmarsh. The SPA also includes sand-dunes and a large coastal lagoon, Hodbarrow Lagoon, which acts as a high-tide roost site for waterbirds. Some areas of surrounding marsh counted for WeBS are outside the SPA boundary.

Table 3.11.1.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Duddon Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.11.1.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Duddon Estuary SPA over the 5-year, 10-year and 25-year time periods.

The population of Shelduck using the Duddon Estuary rose to a peak of over 1,100 birds in the winter of 1993/94, but has since declined markedly. An average of just 430 birds was recorded in the winter of 1999/2000. The decline has resulted in a High Alert being triggered for the 5-year period. Regionally, numbers have been stable over all three time periods considered, while nationally there was a slight increase over the 25-year period.

Pintail numbers at the Duddon Estuary rose between the early 1980s and mid-1990s, but since 1994/95 have been in decline. High Alerts were triggered for both the 5-year and 10-year periods. Over the most recent three winters, numbers have averaged 440 birds. Regionally, numbers declined during the 1980s, but have been stable in the last decade. Nationally, there has been a decline since the early 1980s, though this slowed in the last 5 years.

The population of **Knot** using the Duddon has shown extreme fluctuations in size from year to year, perhaps due to interchange between this estuary and Morecambe Bay. Since peaks of up to 4,000 birds between 1986/87 and 1994/95, however, there has been a steep downward trend in numbers, this triggering High Alerts for both the 5-year and 10-year periods. An overall decline over the 25-year period has also triggered a High Alert. Elsewhere regionally, there has been a slight decline over the 25-year period, though nationally, numbers have been more stable.

The numbers of **Redshank** at the Duddon Estuary fell during the 1970s, but have recovered as a result of a steady increase since the early 1980s. An average of 1,500 has occurred in recent winters. This pattern follows regional trends, though nationally populations have been more stable.

	Site trend	National trend (GB)		Regional trend (Northwest)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CU, OC, **RK**, RM		CU, OC, **RK**, RM	
	Decreasing	DN, **KN**, **PT**, RP, SS, SU		**KN**, **PT**, SS, SU	DN, RP
10-year trend	Increasing or stable	CU, DN, OC, **RK**, RM		CU, DN, OC, **RK**, RM	
	Decreasing	**KN**, SS, SU	**PT**, RP	**KN**, **PT**, SS, SU	RP
25-year trend	Increasing or stable	CU, OC, **RK**, RM, SS	DN, **PT**, RP	CU, OC, **RK**, RM, SS	DN, **PT**, RP
	Decreasing	**KN**, SU		SU	**KN**

Table 3.11.1.1 Summary of comparisons between the site trend and the national and regional (EA Northwest region) population trends of cited species for the Duddon Estuary SPA.

3.11.2 Martin Mere **Further investigation recommended**

7 Evaluated Species: *Bewick's Swan*, *Whooper Swan*, Wigeon, Teal, Mallard, **Pintail**, Pochard

High Alert: *Bewick's Swan*[5,10], Wigeon[5,10], **Pintail**[10,25] (3)

Medium Alert: Mallard[5,10], **Pintail**[5] (2)

The Martin Mere SPA also supports internationally important numbers of **Pink-footed Goose** in winter (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in this species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for all three time periods for the one species for which the site is internationally important (and for which data were evaluated) – **Pintail**
- Alerts were also triggered for three other species for which the site is important – *Bewick's Swan*, Wigeon and Mallard.

The populations of four of the seven species for which the site is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of the population declines, particularly those of *Bewick's Swan*, Wigeon and **Pintail**, is recommended. It should also be noted in any future work that there has been a concurrent decline in the numbers of *Bewick's Swan* at the nearby Ribble and Alt Estuaries SPA. No direct adverse factors have been identified from the literature for the Martin Mere SPA.

Details

Martin Mere is located in Lancashire, close to the Ribble Estuary, and occupies part of a former lake and mire on the coastal plain. The SPA complex comprises open water, seasonally flooded marsh and damp, neutral hay meadows.

Table 3.11.2.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Martin Mere SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.11.2.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Martin Mere SPA over the 5-year, 10-year and 25-year time periods.

The numbers of *Bewick's Swans* at Martin Mere rose through the late 1970s and 1980s, peaking at over 750 birds in 1990/91. Numbers have declined steadily since, however, triggering High Alerts for the 5-year and 10-year periods. Recently, an average of just 100 has used the site. Few *Bewick's Swans* winter elsewhere within the Northwest region aside from at the Ribble and Alt Estuaries. Nationally, numbers rose through the 1970s and early 1980s, though there has been no clear trend over the last decade.

Numbers of *Whooper Swan* at Martin Mere have increased steadily since the early 1980s. An average of 1,200 was recorded in the winter of 1999/2000. Few *Whooper Swans* winter elsewhere within the Northwest region aside from at the Ribble and Alt Estuaries and the Upper Solway Flats and Marshes. Nationally, numbers have also risen since the 1980s.

Wigeon numbers at Martin Mere rose to peaks of 15,000 and 11,000 birds in the winters of 1988/89 and 1992/93 respectively. A decline since the latter winter has triggerd High Alerts for the 5-year and 10-year periods. An average of 830 birds has occurred in recent winters. Both regionally and

nationally, numbers have increased since the 1970s, though there are signs of a recent decline at both scales.

The population of **Pintail** at the site have been declining steadily since the 1970s. High Alerts have been triggered for the 10-year and 25-year periods and a Medium Alert for the 5-year period. Recent numbers have averaged just 160. Both regionally and nationally, numbers rose during the 1970s, but have declined since the mid-1980s.

	Site trend	**National trend (GB)**		**Regional trend (Northwest)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	PO, T., *WS*		T.	PO, *WS*
	Decreasing	*BS*, MA, **PT**, WN		MA, **PT**, WN	*BS*
10-year trend	Increasing or stable	PO, T., *WS*		T.	PO, *WS*
	Decreasing	*BS*, WN	MA, **PT**	MA, **PT**, WN	*BS*
25-year trend	Increasing or stable	*BS*, PO, T., WN, *WS*	MA	*BS*, MA, PO, T., WN, *WS*	
	Decreasing	**PT**			**PT**

Table 3.11.2.1 Summary of comparisons between the site trend and the national and regional (EA Northwest region) population trends of cited species for the Martin Mere SPA.

Please also note that few *Bewick's Swan* winter elsewhere within the Northwest region aside from at the Ribble and Alt Estuaries and the Upper Solway Flats and Marshes, and the comparison with the regional trend is therefore of limited value for this species.

3.11.3 Mersey Estuary **Further investigation recommended**

10 Evaluated Species: Great Crested Grebe, **Shelduck**, Wigeon, **Teal**, **Pintail**, Grey Plover, **Dunlin**, Black-tailed Godwit, Curlew, **Redshank**

High Alert: Great Crested Grebe[5,10], **Pintail**[5,10,25], Grey Plover[5] (3)

Medium Alert: Grey Plover[10] (1)

The Mersey Estuary SPA also supports nationally important numbers of *Golden Plover* in winter and is also cited for Lapwing (Stroud *et al*. 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for just one of five species for which the Mersey Estuary SPA is internationally important – **Pintail**.
- Alerts were also triggered for two further species for which the site is important.

The populations of three of the 10 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines is recommended. Further investigation should focus initially on factors such as habitat loss due to overgrazing and changes in water quality resultant from improvements to waste water discharges.

Details

The Mersey Estuary SPA is a large, sheltered estuary on the north-west coast of England. The SPA comprises large areas of intertidal sand- and mud-flats and saltmarsh, together with brackish marsh and rocky shores.

Table 3.11.3.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Mersey Estuary SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.11.3.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Mersey Estuary SPA over the 5-year, 10-year and 25-year time periods.

Great Crested Grebe numbers on the Mersey Estuary rose during the 1980s and peaked at 120 birds in 1992/93 and again at 84 birds in 1996/97. There has been a general downward trend over the last decade, however, and High Alerts were triggered for both the 10-year and 5-year periods. Averages of just 7 birds have been recorded in the last two winters. Elsewhere, both regionally and nationally, numbers have shown steady increases since counts began in the early 1980s.

Shelduck numbers on the Mersey Estuary rose to a peak of 7,100 birds in 1980/81 before declining over the next five years. There has been a slight recovery since, but no overall trend over the 5-year, 10-year or 25-year periods. Numbers have averaged 3,400 birds in recent winters. Regionally, numbers have increased over the 25-year period, though nationally, numbers have been more stable.

The **Teal** population on the Mersey peaked in 1981/82 at over 11,000 birds, but declined over the next five years. Numbers have been stable since the late 1980s, averaging 2,900 in recent winters, and there has been an overall increase over the 25-year period. Regionally, numbers rose during the 1970s, but have been relatively stable since the early 1980s. Nationally, there has been a steady population increase over the 25-year period.

The population of **Pintail** on the Mersey Estuary rose during the late 1960s and early 1970s, but since the winter of 1984/85 has been in steady decline. An average of just 530 has been recorded in recent winters. High Alerts have been triggered for all three time periods considered. Elsewhere regionally, there have been slight increases over the 10-year and 25-year periods. Nationally, numbers rose steadily through the 1970s and 1980s, though have shown a slight decline over the last decade.

Grey Plover numbers on the Mersey Estuary rose sharply from very low levels to a peak of over 1,600 in 1990/91, but have since shown a fluctuating decline. A High Alert was triggered for the 5-year period and a Medium Alert for the 10-year period. An average of just 78 was recorded in the winter of 1999/2000. Both regionally and nationally, numbers have increased steadily since the 1970s.

The numbers of **Dunlin** on the Mersey declined during the late 1970s and 1980s, but rose over the following decade. There has been a slight decline in the last five years, numbers averaging 23,000 birds in the winter of 1999/2000. This pattern follows both regional and national trends.

Redshank numbers on the estuary rose sharply in the 1980s, peaking at over 4,000 birds in 1989/90 and 1997/98. Numbers have declined quite sharply in the most recent two winters, however, averaging just 2,300 in the winter of 1999/2000. Elsewhere regionally, numbers fell during the late 1970s, but have risen slowly since. Nationally, numbers have been more stable.

	Site trend	**National trend (GB)**		**Regional trend (Northwest)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	BW, CU, **DN**, **RK**, **SU**, **T.**, WN		BW, CU, **RK**, **SU**, **T.**, WN	**DN**
	Decreasing	GG, GV, **PT**		GG, GV, **PT**	
10-year trend	Increasing or stable	BW, CU, **DN**, **RK**, **SU**, **T.**, WN		BW, CU, **DN**, **RK**, **SU**, **T.**, WN	
	Decreasing	GG, GV	**PT**	GG, GV, **PT**	
25-year trend[1]	Increasing or stable	BW, CU, GV, **RK**, **SU**, **T.**, WN	**DN**	BW, CU, GV, **RK**, **SU**, **T.**, WN	**DN**
	Decreasing	**PT**		**PT**	

Table 3.11.3.1 Summary of comparisons between the site trend and the national and regional (EA Northwest region) population trends of cited species for the Mersey Estuary SPA.

[1] Great Crested Grebe data not available for this time-period.

3.11.4 Morecambe Bay **Further investigation recommended**

20 Evaluated Species: Great Crested Grebe, Cormorant, **Shelduck**, Wigeon, Teal, Mallard, **Pintail**, Goldeneye, Red-breasted Merganser, **Oystercatcher**, Ringed Plover, **Grey Plover**, **Knot**, Sanderling, **Dunlin**, Black-tailed Godwit, *Bar-tailed Godwit*, **Curlew**, **Redshank**, **Turnstone**

High Alert: *Bar-tailed Godwit*[25] (1)

Medium Alert: Mallard[10], Goldeneye[5,10], Ringed Plover[5,10], **Grey Plover**[5], **Dunlin**[5,10,25], **Turnstone**[10,25] (6)

The Morecambe Bay SPA also supports nationally important numbers of *Golden Plover* and internationally important numbers of **Pink-footed Goose** in winter and is also cited for Eider and Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Medium Alerts were triggered for three of nine species for which the Morecambe Bay SPA is internationally important – **Grey Plover**, **Dunlin** and **Turnstone**.
- A High Alert was also triggered for *Bar-tailed Godwit* and Medium Alerts for three other species for which the site is also important.

The populations of seven of the 20 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines, particularly the recent declines of **Grey Plover**, **Dunlin** and **Turnstone**, is strongly recommended. Further investigation should focus initially on factors such as habitat loss due to overgrazing of marshland and dredging, over fishing, changes in water quality resultant from improvements to waste water discharges and changes in disturbance intensity.

Details

Morecambe Bay is located between Lancashire and Cumbria and is one of the largest estuarine systems in the UK. Five main river channels (the Leven, Kent, Keer, Lune and Wyre) run through the extensive intertidal sand- and mud-flats. Habitats also include musselbeds, shingle banks, saline lagoons and surrounding saltmarsh.

Table 3.11.4.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Morecambe Bay SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.11.4.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Morecambe Bay SPA over the 5-year, 10-year and 25-year time periods.

Shelduck numbers at Morecambe Bay have been stable over the recent 5-year and 10-year periods, averaging 3,750 birds in recent winters, though have risen over the 25-year period. Elsewhere, both regionally and nationally, numbers rose during the 1970s, but have since been largely stable.

Numbers of **Pintail** at Morecambe Bay have risen greatly over all three time periods considered. An average of 3,100 has been recorded over the most recent three winters. Elsewhere, both regionally and nationally, numbers rose during the 1970s, but have declined since the mid-1980s. The increases at Morecambe Bay partially compensate for declines at the Ribble and Alt Estuaries and the Mersey Estuary.

The **Oystercatcher** population at Morecambe Bay has been largely stable over all three time periods, mirroring the regional and national patterns. An average of 42,000 has occurred in recent winters.

Grey Plover rose greatly in numbers at the site through the late 1970s and 1980s. After peaks of 1,750 and 1,550 birds in 1988/89 and 1993/94 respectively, however, numbers have shown a decline, triggering a 5-year Medium Alert. Only 950 birds were recorded on average in the winter of 1999/2000. Both regionally and nationally, numbers steadily increased between the 1970s and mid-1990s, but have since been largely stable.

The numbers of **Knot** using Morecambe Bay fell between the early 1970s and mid-1980s, but have since partially recovered. Increases of more than 25% were recorded in the population over both the recent 5-year and 10-year periods, though shown no overall trend over the 25-year period. In recent winters, numbers have averaged between 26,000 and 50,000 birds. Elsewhere regionally and nationally, numbers rose during the 1980s, but have since been in decline.

Dunlin numbers using the site peaked in the late 1980s and again in the early 1990s. A decline since then has triggered Medium Alerts for all three time periods considered. An average of over 25,000 wintered in 1999/2000. Both regionally and nationally, numbers have followed a similar pattern, though declines have only been noted in the last 5 years.

The population of *Bar-tailed Godwit* using the Morecambe Bay SPA fell from a peak of 9,100 in 1971/72 to a low of 520 in 1989/90. There has been a slight recovery in the decade since, but nevertheless, a High Alert has been triggered for the 25-year period. Elsewhere within the region, numbers rose during the 1980s, but have since declined. Nationally there have been no clear trends over any of the time periods considered.

Curlew have increased steadily in number at Morecambe Bay since the early 1980s, mirroring both regional and national trends. An average of over 10,000 has occurred in recent winters.

The numbers of **Redshank** at the site, in contrast, have shown no clear trend over the last 25 years. Regionally, numbers rose through the 1980s, but have shown a slight decrease since. An average of 5,500 birds has occurred in recent winters. Nationally, the population has been largely stable.

Turnstone numbers at Morecambe fell briefly during the early 1980s, recovered to their previous levels for the remainder of the decade, before declining again during the 1990s. Medium Alerts have been triggered for the 10-year and 25-year periods due to this decline. Just under 1,000 birds have been recorded in recent winters. Regionally, numbers have fallen in the last five years, after a period of steady increase. Nationally, an increase in the 1970s and 1980s has been followed by a slow decline over the last decade.

	Site trend	National trend (GB)		Regional trend (Anglian)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*BA*, BW, CA, **CU**, GG, **KN**, MA, **OC**, **PT**, **RK**, RM, SS, **SU**, T., **TT**, WN		*BA*, BW, CA, **CU**, GG, MA, **OC**, **RK**, RM, SS, **SU**, T., WN	**KN**, **PT**, **TT**
	Decreasing	**DN**, GN, **GV**, RP		GN, **GV**	**DN**, RP
10-year trend	Increasing or stable	*BA*, BW, CA, **CU**, GG, **GV**, **OC**, **RK**, RM, SS, **SU**, T., WN	**KN**, **PT**	BW, CA, **CU**, GG, **GV**, **OC**, **RK**, RM, SS, **SU**, T., WN	*BA*, **KN**, **PT**
	Decreasing	**DN**, GN	MA, RP, **TT**	**DN**, GN, MA	RP, **TT**
25-year trend[1]	Increasing or stable	BW, **CU**, **GV**, **KN**, **OC**, **RK**, RM, SS, **SU**, WN	**PT**, RP	BW, **CU**, **GV**, **OC**, **RK**, RM, SS, **SU**, WN	**KN**, **PT**, RP
	Decreasing	*BA*, **TT**	**DN**	*BA*	**DN**, **TT**

Table 3.11.4.1 Summary of comparisons between the site trend and the national and regional (EA Northwest region) population trends of cited species for the Morecambe Bay SPA.

[1] Great Crested Grebe, Cormorant, Teal, Mallard and Goldeneye data not available for this time-period.

3.11.5 Ribble and Alt Estuaries **Further investigation recommended**

17 Evaluated Species: Cormorant, *Bewick's Swan*, *Whooper Swan*, **Shelduck**, **Wigeon**, **Teal**, **Pintail**, **Oystercatcher**, Ringed Plover, **Grey Plover**, **Knot**, **Sanderling**, **Dunlin**, **Black-tailed Godwit**, *Bar-tailed Godwit*, Curlew, **Redshank**

High Alert: *Bewick's Swan*[5,10], *Whooper Swan*[5,10], **Pintail**[5], **Knot**[10], **Dunlin**[25] (5)

Medium Alert: **Shelduck**[5], **Pintail**[25], Ringed Plover[10,25], **Knot**[5], **Dunlin**[5], *Bar-tailed Godwit*[10] (6)

The Ribble and Alt Estuaries SPA also supports nationally important numbers of *Golden Plover* and internationally important numbers of **Pink-footed Goose** in winter and is also cited for Common Scoter and Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for four of 11 species for which the Ribble and Alt Estuaries SPA is internationally important (and for which data were evaluated) – **Shelduck**, **Pintail**, **Knot** and **Dunlin**.
- Alerts were also triggered for four other species of importance at the site.

The populations of eight of the 17 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines, particularly the recent declines of **Shelduck**, **Pintail** and **Knot** which have occurred contrary to regional or national patterns, is strongly recommended. Further investigation should focus initially on factors such as habitat loss due to erosion, changes in water quality resultant from improvements to waste water discharges and changes in recreational disturbance intensity.

Details

The Ribble and Alt Estuaries are situated on the coast of Lancashire and Merseyside. The SPA comprises the extensive sand- and mudflats of the larger Ribble Estuary and the smaller intertidal areas of the Alt Estuary and the sandy foreshore of the Sefton Coast between, as well as extensive areas of saltmarsh and grazing marsh along the Ribble. There is considerable interchange in the movements of wintering waterbirds between this site, Morecambe Bay, the Mersey Estuary, the Dee Estuary and Martin Mere.

Table 3.11.5.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Ribble and Alt Estuaries SPA is important, over the 5-year, 10-year and 25-year periods. Table 3.11.5.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Ribble and Alt Estuaries SPA over the 5-year, 10-year and 25-year time periods.

The population of *Bewick's Swan* at the Ribble and Alt Estuaries SPA has fluctuated between years, perhaps partly due to interchange with the neighbouring Martin Mere SPA, a recent peak of 230 occurring in 1996/97. In the most recent winter, 1999/2000, no Bewick's' Swans were recorded at the Ribble and Alt Estuaries and as a result, High Alerts have been triggered for the 5-year and 10-year periods. Few Bewick's Swans winter elsewhere within the Northwest region aside from at Martin Mere, where there has also been a decline. Nationally, numbers rose through the 1970s and early 1980s, though there has been no clear trend over the last decade.

The *Whooper Swan* population at the Ribble and Alt Estuaries has also fluctuated over time, rising to peaks of 220 and 380 in 1985/86 and 1994/95 respectively. A recent decline has resulted in High Alerts being triggered for the 5-year and 10-year periods. Recently, numbers have averaged 33 birds. Few Whooper Swans winter elsewhere within the Northwest region aside from at Martin Mere, where numbers have risen since the mid-1980s, and the Upper Solway Flats and Marshes. Nationally, numbers have also risen over this time-scale.

Shelduck numbers at the Ribble and Alt Estuaries rose between the late 1970s and late 1980s, but after a period of relative stability have shown a slight recent decline. Numbers in the winter of 1999/2000 averaged 2,500. The decline has resulted in a Medium Alert being triggered for the 5-year period. Elsewhere in the region, numbers rose through the 1970s, before declining in the early 1980s and then stabilising. Nationally, numbers rose during the 1970s, but have since been largely stable.

The numbers of **Wigeon** using the site have risen sharply since the early 1980s, though have perhaps begun to stabilise in the last five years. Numbers recently have averaged over 54,000 birds. Regionally, numbers have also risen over the same period, though have shown a slight recent decline. Nationally, numbers have risen over the 25-year period.

Teal have also risen greatly in number at the site since the late 1970s, though recently there have been large fluctuations in population size from year to year. An average of 1,800 Teal was recorded in the winter of 1999/2000. Elsewhere in the region, numbers have been stable since declining from a peak in the early 1980s. Nationally, the population has increased over the 25-year time scale.

Pintail numbers at the Ribble and Alt Estuaries SPA peaked during the mid-1970s before dropping to much lower levels, and then rose again during the 1990s. Following a peak of 2,600 birds in 1995/96, however, there has been a decline and only 370 birds were recorded in the winter of 1999/2000. Both regionally and nationally, numbers rose during the 1970s, but have declined since the mid-1980s.

The numbers of **Oystercatcher** using the site have risen since the early 1970s, though have shown considerable fluctuations in the last decade. In the most recent winter of 1999/2000, an average of over 17,000 birds was recorded. Both regionally and nationally, numbers have been relatively stable over all three time periods considered.

The numbers of **Grey Plover** wintering at the site have also risen since the early 1970s, an average of 3,800 occurring in the winter of 1999/2000. Elsewhere, both regionally and nationally, numbers have also risen since the early 1970s, though there have been slight declines in the last 5 years.

The numbers of **Knot** at the Ribble and Alt Estuaries peaked in the late 1980s at just under 70,000 birds, though have since declined. An average of 22,000 was recorded in the winter of 1999/2000. A High Alert was triggered for the 10-year period due to the decline, and a Medium Alert for the 5-year period. Elsewhere, regionally, Knot numbers fell during the 1970s, but have shown a steady partial recovery since. Elsewhere, nationally, numbers also fell in the early 1970s, but have been largely stable since.

Sanderling numbers at the Ribble and Alt Estuaries have shown a great degree of fluctuation from year to year, though in the last 5 years have shown an increase of 45%. Over 2,100 were recorded in the winter of 1999/2000. Elsewhere, regionally, numbers rose through the 1980s, but have declined over the last decade, whilst nationally, numbers have been more stable.

Dunlin numbers at the Ribble and Alt Estuaries fell sharply from a peak in the mid-1970s, but recovered to peak again at over 34,000 birds in 1996/97. There has been a decline since then, however, numbers averaging 9,500 birds in the winter of 1999/2000. A High Alert was triggered for the 25-year period and a Medium Alert for the 5-year period. Both regionally and nationally, numbers have followed a similar pattern, though have only shown shallow declines over the last 5 years

Black-tailed Godwit numbers at the site have shown extreme fluctuations from year to year, increasing to a peak of over 1,900 in the winter of 1999/2000. Elsewhere in the region, numbers peaked in 1997/98, but have dropped since, while nationally, numbers have increased steadily since the 1970s.

Bar-tailed Godwit numbers at the Ribble and Alt Estuaries rose during the 1970s and 1980s to a peak of over 17,000 in 1987/88. Numbers have declined since, however, triggering a Medium Alert for the 10-year period. Recent numbers have averaged 10,000 birds. Elsewhere regionally, numbers declined during the 1970s and 1980s, but have since stabilised. Nationally, the population trend has been more stable.

The numbers of **Redshank** using the Ribble and Alt Estuaries increased steadily between the early 1970s and early 1990s. Numbers have dropped slightly in the last 5 years, averaging 9,800 birds. Elsewhere within the region, numbers fell during the 1970s, but recovered in the 1980s and have been stable since. Nationally, the population has been largely stable.

	Site trend	**National trend (GB)**		**Regional trend (Northwest)**	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	*BA*, **BW**, CA, CU, **GV**, **OC**, **RK**, RP, **SS**, **T.**, **WN**		*BA*, **BW**, CA, CU, **OC**, **RK**, **T.**	**GV**, RP, **SS**, **WN**
	Decreasing	*BS*, **DN**, **KN**, **PT**, **SU**, *WS*		**DN**, **KN**, **PT**, **SU**, *WS*	*BS*
10-year trend	Increasing or stable	**BW**, CA, CU, **DN**, **GV**, **OC**, **RK**, **SS**, **SU**, **T.**, **WN**	**PT**	**BW**, CA, CU, **DN**, **GV**, **OC**, **PT**, **RK**, **SU**, **T.**, **WN**	**SS**
	Decreasing	*BA*, *BS*, **KN**, *WS*	RP	*BA*, **KN**, *WS*	*BS*, RP
25-year trend[1]	Increasing or stable	*BA*, **BW**, CA, CU, **GV**, **KN**, **OC**, **RK**, **SS**, **SU**, **T.**, **WN**, *WS*		**BW**, CU, **GV**, **OC**, **RK**, **SS**, **SU**, **T.**, **WN**, *WS*	*BA*, **KN**
	Decreasing		**DN**, **PT**, RP		**DN**, **PT**, RP

Table 3.11.5.1 Summary of comparisons between the site trend and the national and regional (EA Northwest region) population trends of cited species for the Ribble and Alt Estuaries SPA.

[1] Cormorant and *Bewick's Swan* data not available for this time-period.

Please also note that few *Bewick's Swan* winter elsewhere within the Northwest region aside from at Martin Mere and the Upper Solway Flats and Marshes, and the comparison with the regional trend is therefore of limited value for this species.

3.11.6 Upper Solway Flats and Marshes — Further investigation recommended

15 Evaluated Species: Great Crested Grebe, Cormorant, *Whooper Swan*, Shelduck, Mallard, **Pintail**, Goldeneye, **Oystercatcher**, Ringed Plover, Grey Plover, **Knot**, **Dunlin**, *Bar-tailed Godwit*, **Curlew**, **Redshank**

High Alert: Goldeneye[10], Ringed Plover[25], **Knot**[25], *Bar-tailed Godwit*[10,25] (4)

Medium Alert: Great Crested Grebe[5], *Whooper Swan*[10], **Pintail**[25], Grey Plover[5], **Knot**[5], *Bar-tailed Godwit*[5], **Curlew**[25] (7)

The Upper Solway Flats and Marshes SPA also supports nationally important numbers of *Golden Plover* and *Barnacle Goose* and internationally important numbers of **Pink-footed Goose** in winter and is also cited for Scaup and Lapwing (Stroud *et al.* 2001). However, insufficient data were available to investigate trends in these species' numbers at the site over the time periods considered.

Summary

- Alerts were triggered for three species for which the Upper Solway Flats and Marshes SPA is internationally important – a High Alert for **Knot** and Medium Alerts also for **Pintail** and **Curlew**.
- Alerts were also triggered for six other species for which the site is important.

The populations of nine of the 15 species for which the SPA is important (and for which data were evaluated) have shown declines and there is thus cause for concern at the site. Detailed investigation into the causes of these declines, particularly the long-term declines of Ringed Plover, **Knot** and *Bar-tailed Godwit*, is strongly recommended. Further investigation should focus initially on factors such as habitat loss due to overgrazing and overexploitation of shellfish stocks.

Details

The Upper Solway Flats and Marshes SPA lies on the west coast on the border between England and Scotland. The SPA includes one of the largest expanses of intertidal sand- and mud-flats in the UK and extensive saltmarshes or 'merses'. The site includes the subsumed SPA of Rockcliffe Marsh. Analysis has been undertaken using WeBS counts from both the Scottish and English parts of the SPA, though it should be noted that some parts of the outer estuary are not covered by WeBS.

Table 3.11.6.1 shows the summarised comparisons between the site trend and the national and regional population trends for the species for which the Upper Solway Flats and Marshes SPA is important, over the 5-year, 10-year and 25-year periods. Northwest regional trends are used for this comparison. Table 3.11.6.2 (in the appendices) shows the percentage change and Alerts for populations of waterbirds at the Upper Solway Flats and Marshes SPA over the 5-year, 10-year and 25-year time periods.

The numbers of *Whooper Swan* recorded on the Upper Solway Flats and Marshes SPA rose to a peak of 260 birds in 1988/89, but have since declined. As a result, a Medium Alert was triggered for the 10-year period. An average of 64 birds has been recorded in recent winters. Elsewhere regionally and nationally, numbers have increased greatly since the 1970s.

The population of Goldeneye using the Upper Solway Flats and Marshes has shown considerable fluctuations between years. Numbers rose to peaks of 410 and 500 in the winters of 1986/87 and 1990/91 respectively, before subsequently declining. An average of 100 has occurred in recent winters. A High Alert was triggered for the 10-year period due to this decline. Elsewhere regionally and nationally, numbers have shown steady increases.

Pintail numbers on the Upper Solway Flats and Marshes have risen greatly during the 1990s, peaking at 2,900 birds in 1998/99. Elsewhere, both regionally and nationally, numbers rose through the 1970s, but have been in decline since the mid-1980s.

The numbers of **Oystercatcher** using the Upper Solway Flats and Marshes SPA were largely stable through the late 1970s and 1980s, but have risen steadily in the last decade. An average of over 29,000 occurred in the winter of 1999/2000. Elsewhere, both regionally and nationally, numbers have been relatively stable over all three time periods considered.

Ringed Plover numbers on the Upper Solway Flats and Marshes peaked at 3,500 birds in 1973/74, but dropped sharply over the following decade. The population has remained at low, but relatively stable numbers since, averaging 170 birds in recent winters. A High Alert was triggered for the 25-year period due to the decline in the 1970s. Elsewhere in the region, numbers fell after a peak in the late 1970s. Although numbers partially recovered in 1980s, there have been overall declines over the 25-year, 10-year and 5-year periods. Nationally, numbers rose steadily to a peak in the late 1980s, before declining thereafter.

The **Knot** population on the Upper Solway Flats and Marshes fell during the 1970s and after a partial recovery during the early 1990s, has fallen again in the last five years. An average of 7,100 birds was recorded in the winter of 1999/2000. A High Alert was triggered for the 25-year period and a Medium Alert for the 5-year period. Elsewhere regionally and nationally, numbers rose during the 1980s after a decline in the 1970s, but have since been more stable.

Dunlin numbers at the site declined from a peak in the early 1970s, but have shown an increase in the last decade. Recent numbers have averaged over 12,000 birds. Both regionally and nationally, there has been a similar pattern to trends in numbers, though at the regional scale, there has been a slight decrease in the last 5 years.

Bar-tailed Godwit numbers at the Upper Solway Flats and Marshes have declined steadily since peaking at 13,000 birds in 1973/74. High Alerts have been triggered for the 25-year and 10-year periods and a Medium Alert for the 5-year period. Elsewhere regionally, numbers rose during the 1970s and early 1980s, and have shown an overall increase over the 25-year period. Nationally, numbers have been more stable.

The **Curlew** population at the Upper Solway Flats and Marshes peaked at over 9,600 birds in 1976/77. A sharp decline in numbers followed, though since the early 1980s numbers have been more stable. Over recent winters, numbers have averaged over 3,000 birds. A Medium Alert was triggered for the 25-year period due to the earlier decline. Both regionally and nationally, numbers have shown steady increases.

Redshank also decreased in number at the site following a peak in the early 1970s, but since the mid-1980s have been steadily increasing in number. An average of 3,100 birds was recorded in the winter of 1999/2000. Both regional and national populations also showed lows during the early 1980s, but have shown no overall trends over the 5-year, 10-year or 25-year periods.

	Site trend	National trend (GB)		Regional trend (Northwest)	
		Increasing or stable	**Decreasing**	**Increasing or stable**	**Decreasing**
5-year trend	Increasing or stable	CA, **CU**, **DN**, GN, MA, **OC**, **PT**, **RK**, RP, SU, *WS*		CA, **CU**, **GN**, MA, **OC**, **PT**, **RK**, SU, *WS*	**DN**, RP
	Decreasing	*BA*, GG, GV, **KN**		*BA*, GG, GV, **KN**	
10-year trend	Increasing or stable	CA, **CU**, **DN**, GG, GV, **KN**, **OC**, **RK**, SU	MA, **PT**, RP	CA, **CU**, **DN**, GG, GV, **KN**, **OC**, **RK**, SU	MA, **PT**, RP
	Decreasing	*BA*, GN, *WS*		*BA*, GN, *WS*	
25-year trend[1]	Increasing or stable	GV, **OC**, **RK**, SU	**DN**	GV, **OC**, **RK**, SU	**DN**
	Decreasing	*BA*, **CU**, **KN**, RP	**PT**	*BA*, **CU**, **KN**	**PT**, RP

Table 3.11.6.1 Summary of comparisons between the site trend and the national and regional (EA Northwest region) population trends of cited species for the Upper Solway Flats and Marshes SPA.

[1] Great Crested Grebe, Cormorant, *Whooper Swan*, Mallard and Goldeneye data not available for this time-period.

4. CONCLUSIONS AND RECOMMENDATIONS

To provide an overview of the status of waterbird species within each region, population trends for all species are summarised in Figures 4.1-4.6.

For each region, three graphs indicate the balance in species' population trends at each site over each time period (5 years, 10 years and 25 years). For a given time period, the bar for each site shows the number of species with a decreasing population, i.e. those with a High or Medium Alert (a negative score), or with a stable or increasing population (a positive score). Thus a site with four species that are stable or increasing and three that are decreasing by 25% or more would have a bar four units long above the zero line and three units long below the line.

A summary of these graphs is provided in Table 4.1, where the population changes at each site over each time period are categorised as of *No Concern*, *Low Concern*, *Medium Concern* or *High Concern*, according to the following criteria:

No Concern – Populations of all species have been stable or have increased over the time period.

Low Concern – The only declines recorded have been of species included in the waterfowl assemblage for the site, but which do not occur in nationally or internationally important numbers.

Medium Concern – Declines have been recorded for at least one but less than 50% of species that occur in nationally or internationally important numbers.

High Concern – Declines have been recorded for 50% or more of species that occur in nationally or internationally important numbers.

Foulness, for example, is categorised as a *Medium Concern* site for the 5-year period as two of six species of national or international importance have shown declines over this period. The site is categorised as a *High Concern* site for the 10-year period, as three of these six species show declines. However, it is categorised as a *Low Concern* site for the 25-year period as only one species, which is not of national or international importance, has shown a decline.

The population changes at a total of 17 sites have been categorised as being of High Concern over the 5-year period, at 16 sites for the 10-year period and at seven sites for the 25-year period.

Table 4.1 has been used to identify sites where further investigation into the causes of population changes is recommended. These were all those where High Concern has been noted for at least two of the three time periods and also those where High or Medium Concern has been noted for every time period.

Thus, 24 sites, highlighted in Table 4.1, have been identified as requiring further investigation.

If one were to consider a decline at the site level as not significant if it matched a regional trend then 14 of the 40 cases of High Concern and seven of the 37 cases of Medium Concern would be downgraded. Similarly, if one were to consider a decline at the site level as not significant if it matched a national trend then six cases of High Concern and six cases of Medium Concern would also be downgraded. If this were taken into account, two SPAs included in the highlighted list in Table 4.1 – Solent and Southampton Water and the Ribble and Alt Estuaries – could be excluded from those where further work is recommended as the declines that cause High or Medium Concern at these sites match declines at both the regional and national scales. These declines are thus unlikely to be due to environmental factors that could be addressed at the local scale.

'Level 2' assessment should aim to determine, via analyses of existing data sets and discussions with local experts, whether the causes of species' declines are site-specific or whether they are related to

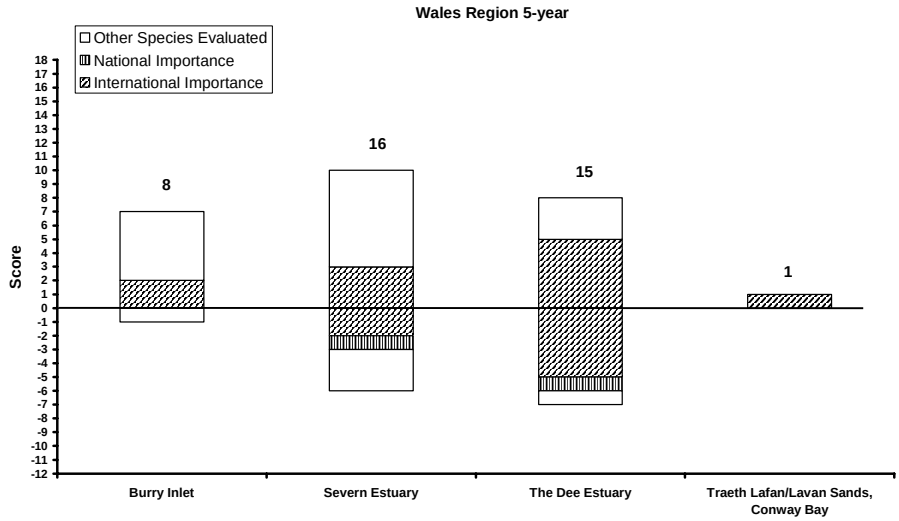
factors operating over a larger-scale. Factors that may affect waterbirds at the site-level could include water quality changes (such as those resultant from the implementation of the recent Bathing Water and Urban Waste Water Treatment Directives), increased recreational disturbance, habitat change and increased wildfowling. Changes in water quality may affect waterbirds through impacts on the invertebrates and algae that they feed upon (Burton *et al.* 2002). Of the sites listed for further investigation, there have been changes in water quality resultant from recent improvements to waste water discharges in or close to the following: The Dee Estuary (Wales Region), Severn Estuary (Wales and Southwest Regions), Medway Estuaries and Marshes and the Solent and Southampton Water (Southern Region), Hamford Water and Stour and Orwell Estuaries (Anglian Region) and the Duddon Estuary, Mersey Estuary, Morecambe Bay and the Ribble and Alt Estuaries (Northwest Region) (see Burton *et al.* 2002). These changes in water quality are most likely to have triggered Alerts over the 5-year or 10-year periods. Sewage is also discharged into three further sites listed as requiring further investigation: Chichester and Langstone Harbours (Southern Region) and the Blackwater Estuary and Colne Estuary (Anglian Region). Amongst the sites listed, agricultural pollution was additionally identified as a potential problem at Chichester and Langstone Harbours (Southern Region), the Blackwater Estuary, Colne Estuary, Hamford Water and The Wash (Anglian Region).

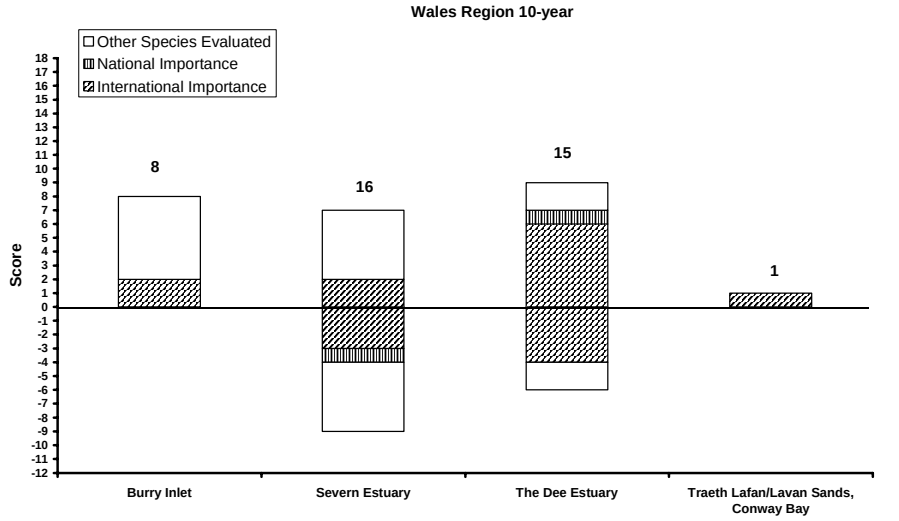
At a larger scale, some of the declines may be linked to factors such as climate change, changes in breeding success or habitat changes at major flyway staging posts. Recent work has suggested that the proportions of a number of waterbird species wintering in the southwest and Wales have declined in relation to increasing wintering temperatures (Austin & Rehfisch in prep.). Figure 4.7 maps the spatial variation in population changes of Ringed Plover over the three time periods. High increases were noted at four eastern sites over the 25-year period, while High Alerts were issued for two south-western sites – indicating a shift to the east in this species' distribution over this time, as identified by Austin and Rehfisch (in prep.). More recently, however, declines have also been noted in sites in the southeast. Efforts will be made to identify clusters of sites that show similar declining trends for individual species or groups of species (e.g. Great Crested Grebe at several sites on the East Anglian coast), and to identify the possible causes underlying those declines, which may or may not be due to site management.

	High Concern			Medium Concern			Low Concern			No Concern		
	5	10	25	5	10	25	5	10	25	5	10	25
Wales												
Burry Inlet							✓		✓		✓	
The Dee Estuary	✓				✓							
Traeth Lafan/Lavan Sands Conway Bay										✓	✓	✓
Midlands												
Walmore Common		✓	✓									
Wales & Southwest												
Severn Estuary	✓	✓	✓									
Southwest												
Chesil Beach and The Fleet										✓	✓	✓
Chew Valley Lake		✓								✓		✓
Exe Estuary	✓							✓	✓			
Poole Harbour				✓				✓				✓
Tamar Estuaries Complex										✓	✓	✓
Southern												
Chichester and Langstone Harbours		✓		✓								
Dungeness to Pett Level	✓										✓	✓
Medway Estuaries and Marshes	✓	✓				✓						
Pagham Harbour										✓	✓	✓
Portsmouth Harbour										✓	✓	✓
Solent and Southampton Water				✓	✓	✓						
Thanet Coast and Sandwich Bay		✓								✓		✓
The Swale				✓		✓		✓				
Southern & Anglian												
Thames Estuary and Marshes	✓							✓	✓			
Anglian												
Abberton Reservoir	✓	✓										
Alde-Ore Estuary										✓	✓	✓
Benfleet and Southend Marshes	✓	✓										
Blackwater Estuary				✓	✓	✓						
Colne Estuary	✓	✓										
Crouch and Roach Estuaries										✓	✓	✓
Deben Estuary										✓	✓	✓
Dengie							✓	✓				✓
Foulness		✓		✓					✓			
Hamford Wate	✓					✓						
Minsmere-Walberswick										✓	✓	✓
North Norfolk Marshes[2]							✓	✓				
Ouse Washes				✓	✓	✓						
Rutland[2]							✓	✓				
Stour and Orwell Estuaries	✓				✓	✓						
The Wash		✓		✓		✓						
Anglian & Northeast												
Humber Flats Marshes and Coast							✓	✓	✓			
Northeast												
Hornsea Mere[2]										✓	✓	
Lindisfarne	✓	✓										
	✓											
Northumbria Coast		✓	✓							✓		
Teesmouth and Cleveland Coast	✓	✓	✓									
Northwest												
Duddon Estuary	✓	✓				✓						
Martin Mere	✓	✓				✓						
Mersey Estuary				✓	✓	✓						
				✓	✓	✓						
Ribble and Alt Estuaries				✓	✓	✓						
				✓	✓							
n	17	16	7	12	9	16	5	8	7	13	12	15

[1] 10-year alerts could not be calculated for these sites due to a lack of data.
[2] 25-year alerts could not be calculated for these sites due to a lack of data.

Table 4.1 Levels of concern over the 5-year, 10-year and 25-year periods at the 47 SPAs where trends in waterbird populations were evaluated. Shaded sites are those recommended for further investigation.





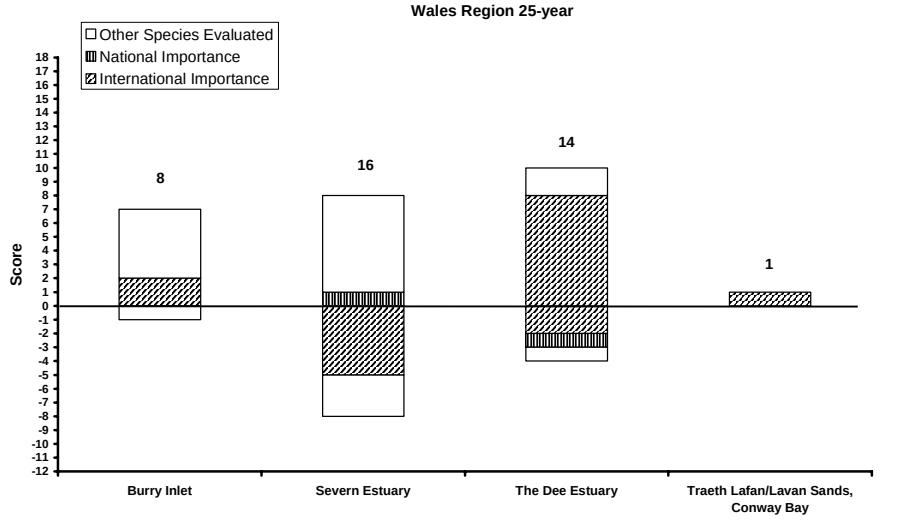


Figure 4.1 Summed species trends at SPAs within the "Wales" region (including the Severn Estuary Southwest/Wales SPA) over the 5-year, 10-year and 25-year periods. Positive scores indicate the numbers of species with stable or increasing populations and negative scores indicate the numbers of species with decreasing populations (i.e. those with a High or Medium Alert).

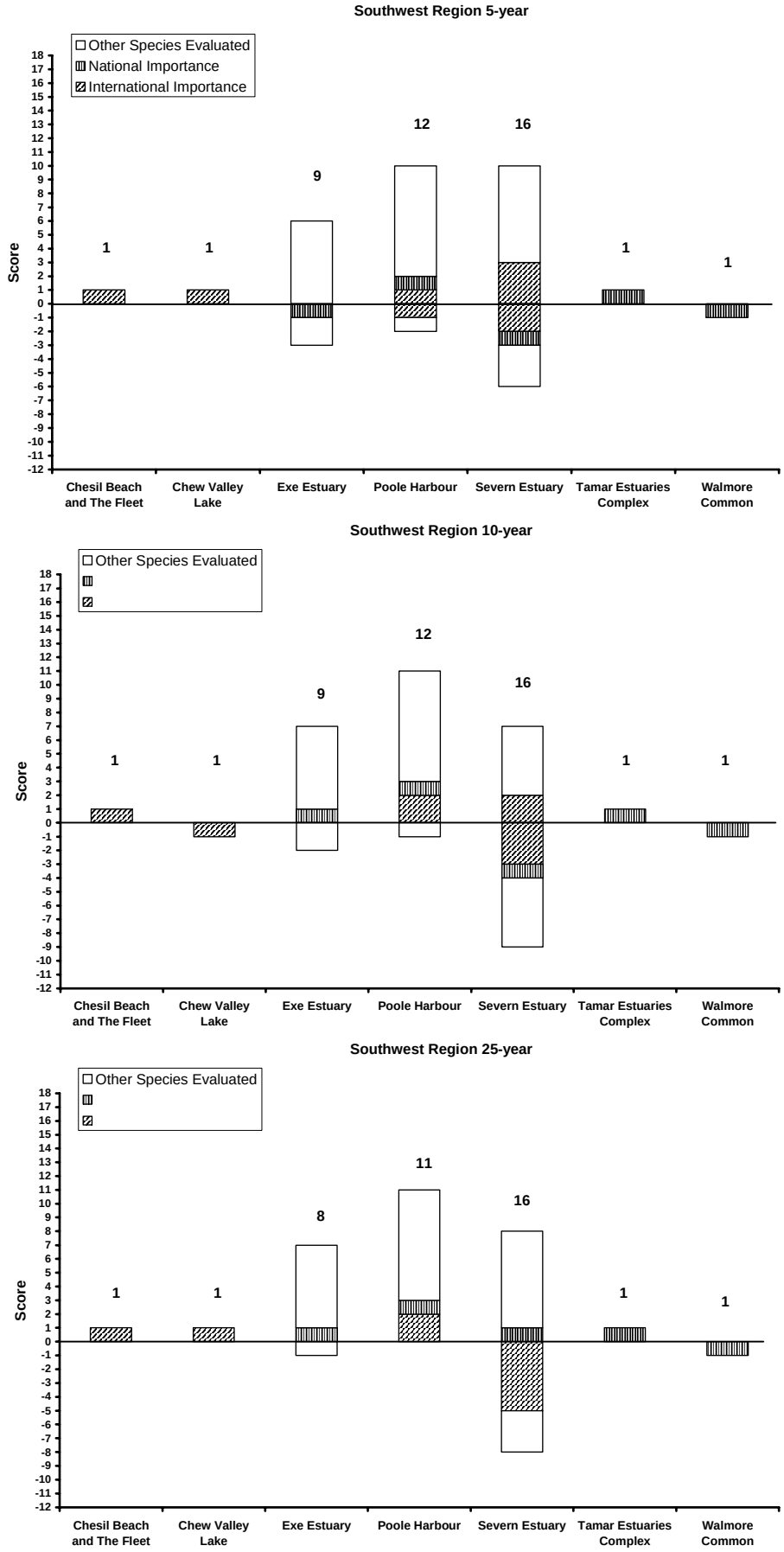


Figure 4.2 Summed species trends at SPAs within the "Southwest" and "Midlands" regions (including the Severn Estuary Southwest/Wales SPA) over the 5-year, 10-year and 25-year periods. Positive scores indicate the numbers of species with stable or increasing populations and negative scores indicate the numbers of species with decreasing populations (i.e. those with a High or Medium Alert).

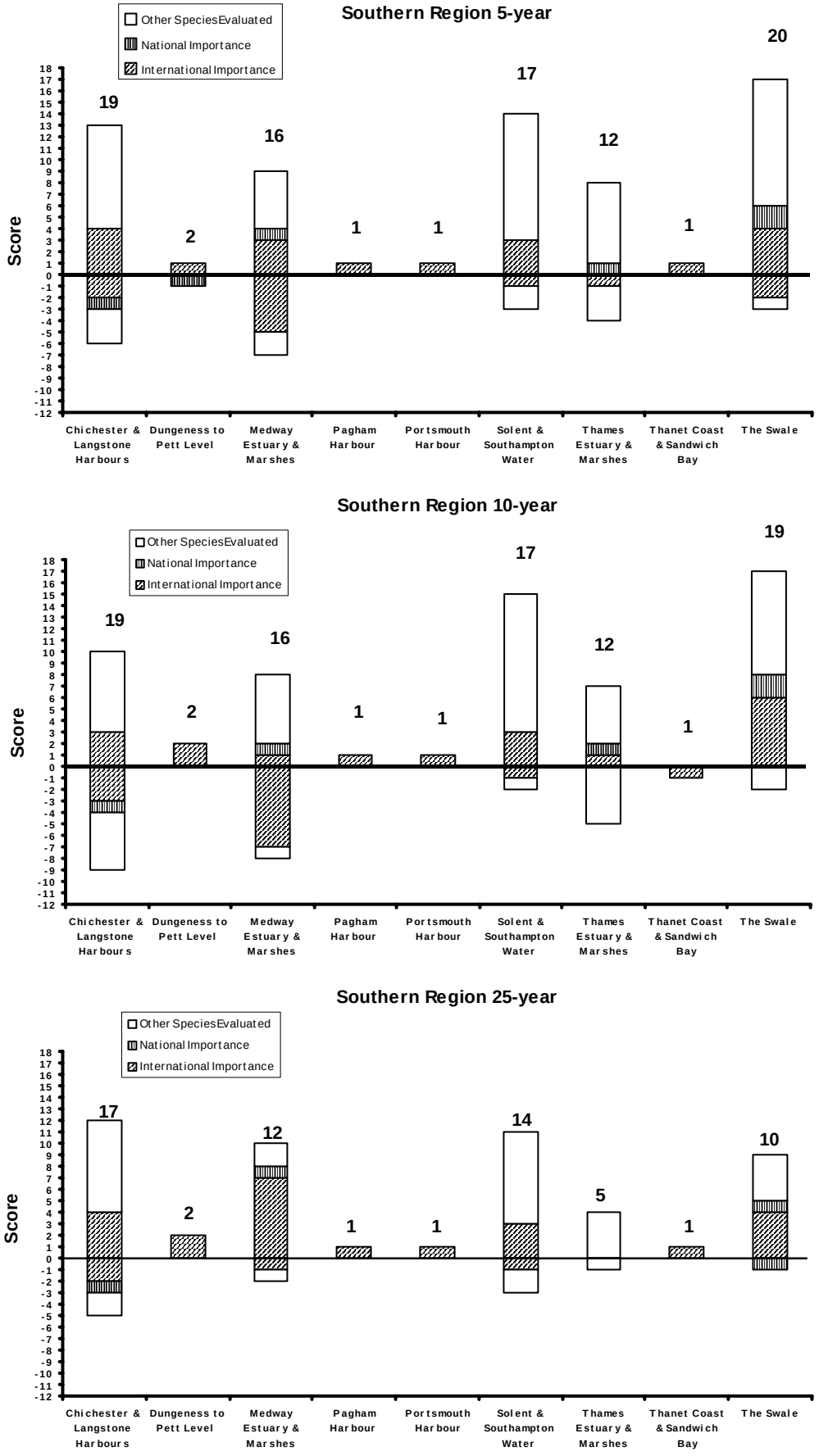


Figure 4.3 Summed species trends at SPAs within the "Southern" region over the 5-year, 10-year and 25-year periods. Positive scores indicate the numbers of species with stable or increasing populations and negative scores indicate the numbers of species with decreasing populations (i.e. those with a High or Medium Alert).

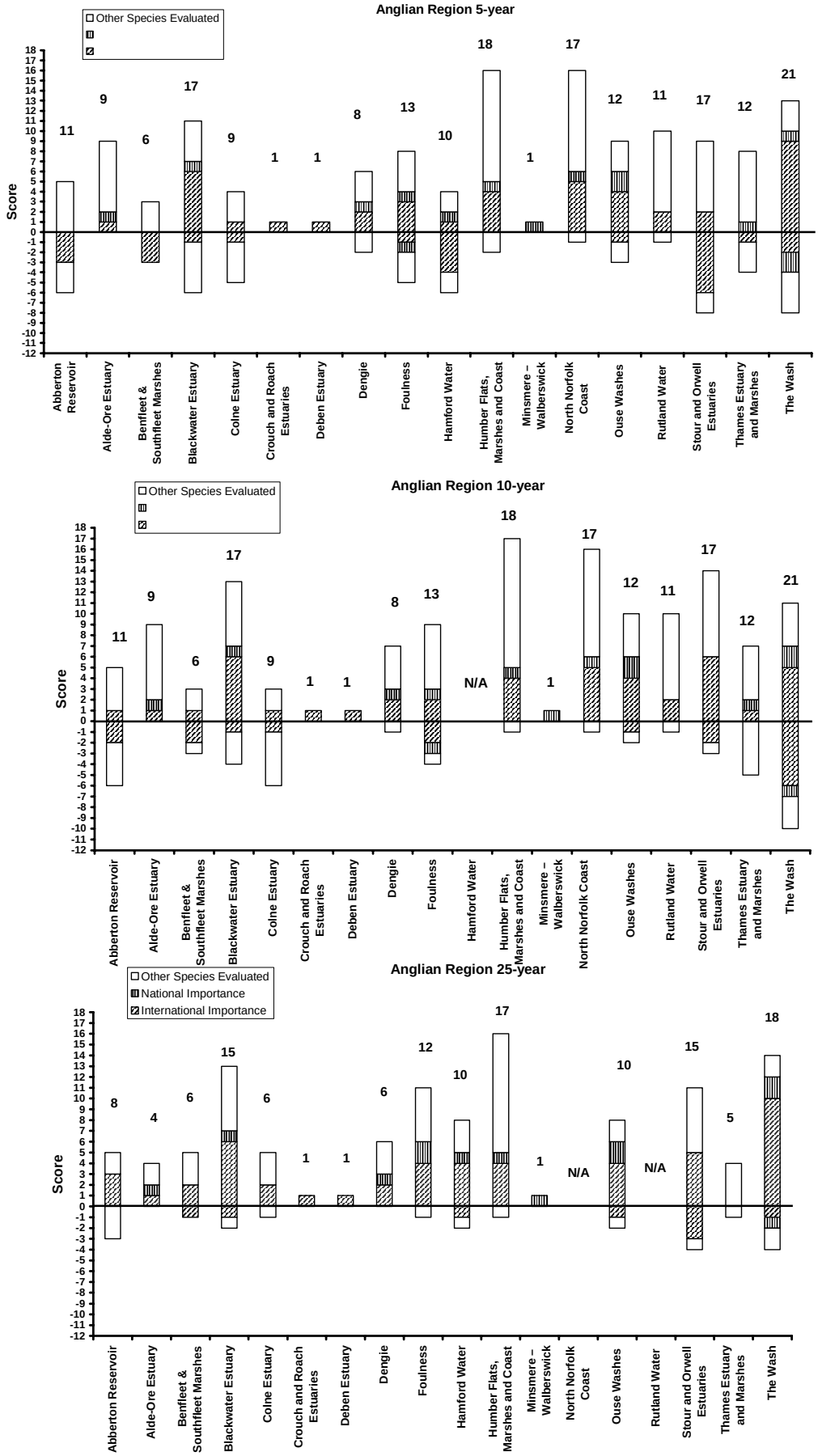


Figure 4.4 Summed species trends at SPAs within the "Anglian" region over the 5-year, 10-year and 25-year periods. Positive scores indicate the numbers of species with stable or increasing populations and negative scores indicate the numbers of species with decreasing populations (i.e. those with a High or Medium Alert).

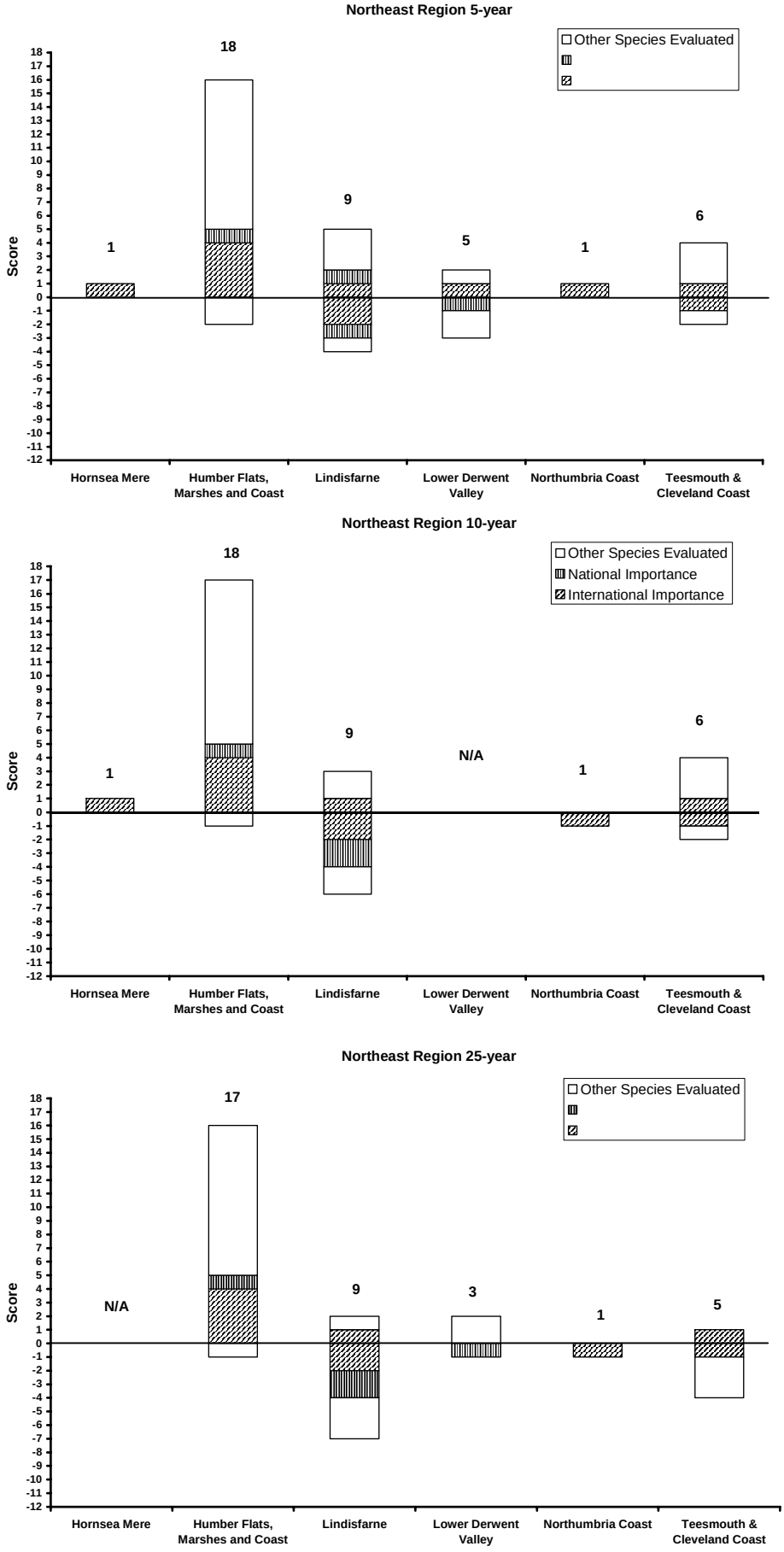


Figure 4.5 Summed species trends at SPAs within the "Northeast" region over the 5-year, 10-year and 25-year periods. Positive scores indicate the numbers of species with stable or increasing populations and negative scores indicate the numbers of species with decreasing populations (i.e. those with a High or Medium Alert).

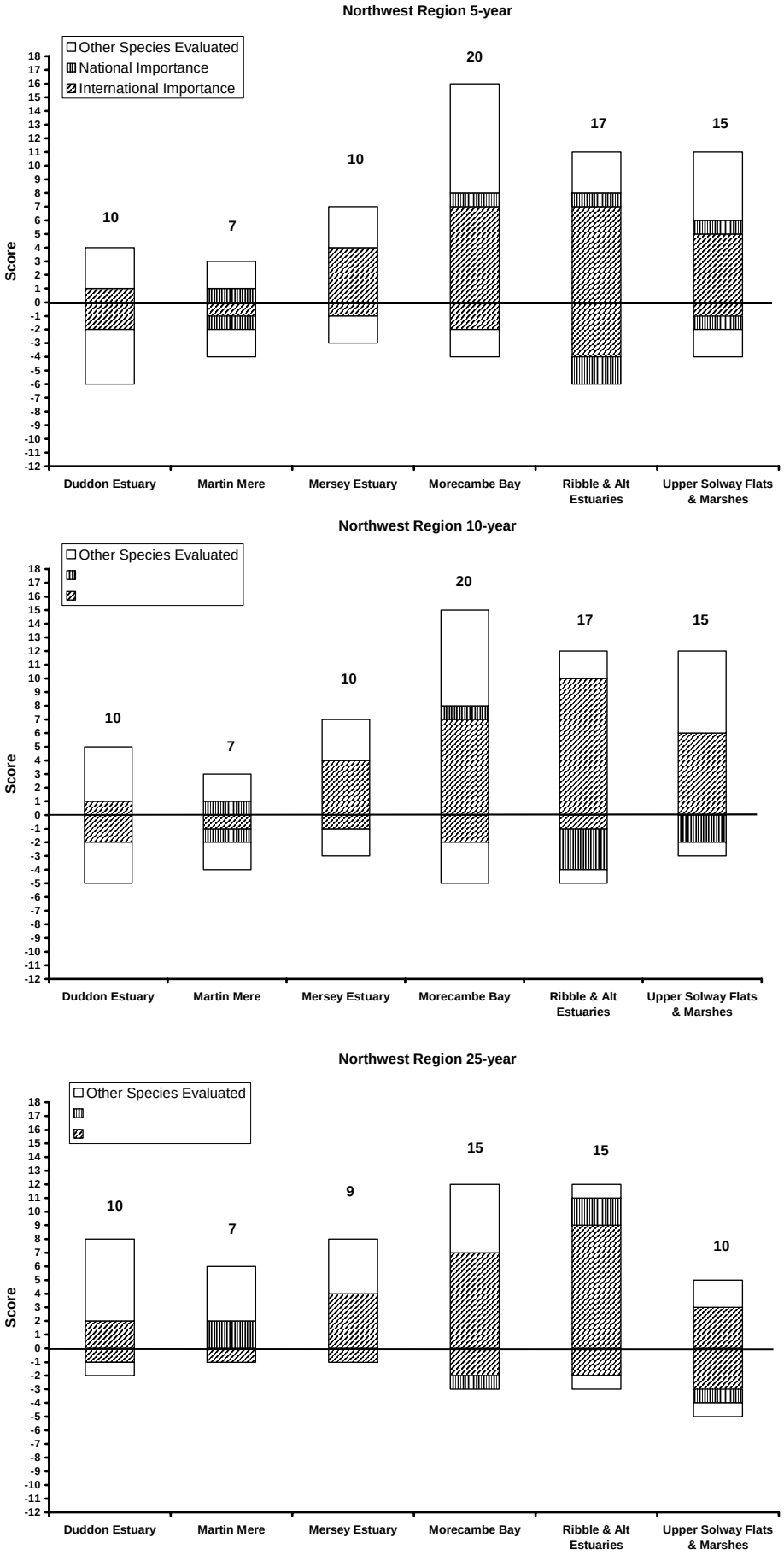


Figure 4.6 Summed species trends at SPAs within the "Northwest" region over the 5-year, 10-year and 25-year periods. Positive scores indicate the numbers of species with stable or increasing populations and negative scores indicate the numbers of species with decreasing populations (i.e. those with a High or Medium Alert).

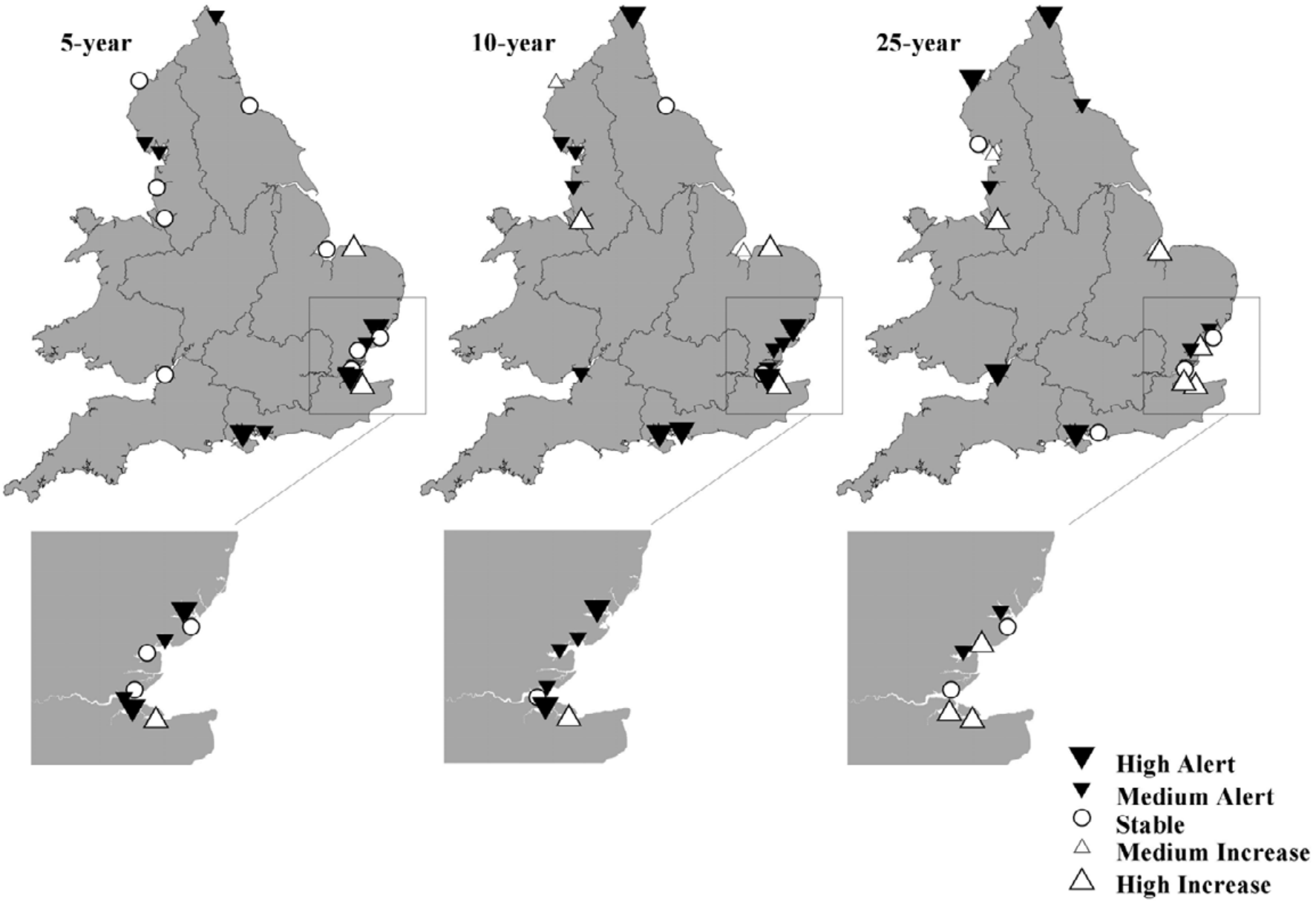


Figure 4.7 Ringed Plover Alerts on all SPAs for which the species is evaluated, over the 5-year, 10-year and 25-year periods.

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