

# **CARLINGFORD LOUGH - SPECIAL PROTECTION AREA (SPA)**

**UK9020160**

## **CONSERVATION OBJECTIVES**

**Including conservation objectives for Carlingford Lough ASSI**

### Document Details

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### Revision History:

Version	Date	Summary of Changes	Initials	Changes Marked
V1	09/03/1998	Internal working document	IE	
V1.1	August 2013	Review	IE	
V2.0	February 2015	Draft	IE	Complete review
V2.1	April 2015	Draft	IE	Marine extension

### **Site relationship**

To fully understand the site conservation requirements for this site it may be necessary to also refer to other site Conservation Objectives

This SPA also includes the Carlingford Lough SPA marine extension defined for foraging Sandwich and Common Tern originating from the tern colony within the site.

The SPA also includes the Carlingford Lough Ramsar site.

See also Boundary Rationale

The SPA is also close to, or adjoins, European designations in the Republic of Ireland. These are Carlingford Lough SPA and Carlingford Lough SAC. Dundalk Bay SPA and Dundalk Bay SAC are also close to the SPA.

## **1. INTRODUCTION**

EU Member States have a clear responsibility under the Habitats and Birds Directives<sup>1</sup> to ensure that all habitats and species of Community Interest are maintained or restored to Favourable Conservation Status (FCS). Natura 2000 sites have a crucial role to play in achieving this overall objective since they are the most important core sites for these species and habitats. Each site must therefore be managed in a way that ensures it contributes as effectively as possible to helping the species and habitats for which it has been designated reach a favourable conservation status within the EU.

To ensure that each Natura 2000 site contributes fully to reaching this overall target of FCS, it is important to set clear conservation objectives for each individual site. These should define the desired state, within that particular site, of each of the species and habitat types for which the site was designated.

Once a site has been included in the Natura 2000 network, Member States are required to implement, on each site, the necessary conservation measures which correspond to the ecological requirements of the protected habitat types and species of Community Interest present, according to Article 6.1 of the Habitats Directive. They must also prevent any damaging activities that could significantly disturb those species and habitats (Article 6.2) and to protect the site from new potentially damaging plans and projects likely to have a significant effect on a Natura 2000 site (Article 6.3, 6.4).

Conservation measures can include both site-specific measures (i.e. management actions and/or management restrictions) and horizontal measures that apply to many Natura 2000 sites over a larger area (e.g. measures to reduce nitrate pollution or to regulate hunting or resource use).

In Northern Ireland, terrestrial/inter-tidal Natura 2000 sites are usually underpinned by the designation of an Area of Special Scientific Interest (ASSI) under the Environment (NI) Order 2002 (as amended).

## **2. ROLE OF CONSERVATION OBJECTIVES**

Conservation Objectives have a role in

- Conservation Planning and Management – guide management of sites, to maintain or restore the habitats and species in favourable condition
- Assessing Plans and Projects, as required under Article 6(3) of the Habitats Directive - Habitats Regulations Assessments (HRA) are required to assess proposed plans and projects in light of the site's conservation objectives.
- Monitoring and Reporting – Provide the basis for assessing the condition of a feature, the factors that affect it and the actions required.

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<sup>1</sup> 92/43/EEC and 2009/147/EC (codified version of Directive 79/409/EEC as amended)

### 3. DEFINITION OF FAVOURABLE CONSERVATION STATUS

Favourable Conservation Status is defined in Articles 1(e) and 1(i) of the Habitats Directive:

The conservation status of a natural habitat is the sum of the influences acting on it and its typical species that may affect its long-term natural distribution, structure and functions as well as the long term survival of its typical species. The conservation status of a natural habitat will be taken as favourable when:

- Its natural range and areas it covers within that range are stable or increasing, and
- The specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and
- The conservation status of its typical species is favourable as defined in Article 1(i).

For species, favourable conservation status is defined in Article 1(i) as when:

- population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and;
- the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and;
- there is, and will probably continue to be, a sufficiently large habitat to maintain its population on a long term basis.

#### 3.1 DEFINITION OF FAVOURABLE CONDITION

Favourable Condition is defined as “**the target condition for an interest feature in terms of the abundance, distribution and/or quality of that feature within the site**”.

The standards for favourable condition (Common Standards) have been developed by JNCC and are applied throughout the UK. Achieving Favourable Condition on individual sites will make an important contribution to achieving Favourable Conservation Status across the Natura 2000 network.

### 4 GENERAL INFORMATION

COUNTY: Down

**Area:** 114.05km<sup>2</sup>      **Geographic co-ordinates (land area):** 54 03 00 N  
06 07 00 W  
**Geographic co-ordinates (marine area):** 54 03 42N  
05 55 24W

### 5 SUMMARY SITE DESCRIPTION

Carlingford Lough ASSI extends from Cranfield Point to the limit of main inter-tidal mudflats upstream towards Newry. The SPA extends from Soldiers Point to Killowen Point. The offshore islands at Blockhouse, Green Island and off Greencastle Point fall within both designations. Habitat is almost exclusively inter-tidal with the exception of the islands mentioned and coastal saltmarsh and wet grasslands in Mill Bay. The site also

includes areas of open water within the lough itself (seaward of Killowen Point, limited to approximately the mid-lough line) and coastal waters northwards to the Bloody Bridge area on the Mourne Coast.

Within Carlingford Lough the seabed is dominated by muds and gravelly muddy sands in shallow waters, grading into cobbles and boulderfields towards the mouth of the Lough which is a topographically and hydrodynamically complex area.

Bedrock outcrops, boulders and cobbles characterise the seabed immediately offshore of the mouth of Carlingford Lough, with such reef extending up to 4km offshore of the Lough mouth. Extensive fringing bedrock and stony reef is found along much of the coastline adjacent to Kilkeel and Ardglass, with gravels, sands and mixed coarse sediments found further offshore, towards the offshore limit of the SPA. This region includes a notable area of gravels known as the “herring gravels”, which is an important site for herring (*Clupea harengus*) spawning. The seabed slopes to approximately 25m depth at the Irish Sea offshore boundary of the SPA.

## **5.1 BOUNDARY RATIONALE**

The ASSI includes the main inter-tidal habitats that support nationally significant wintering waterfowl populations together with other interest features. The SPA is limited to those areas regularly used by Light-bellied Brent Geese together with the tern nesting sites (those islands both currently used, used in the past, with the potential for use or in close proximity to any of these). Roost sites occurring outside the extent of natural or semi-natural habitat have not been included but their importance must not be underestimated.

The marine area has been defined on the basis of predictive modelling work undertaken by JNCC at a UK level. This uses a range of parameters to identify the extent of the marine area associated with tern colonies and used by those birds for foraging activity. The actual presence of terns actively foraging in the marine area was then validated by land- and boat-based observations.

The terrestrial section of the SPA includes all lands and intertidal areas as shown on the designation map. It also includes the offshore islands of Green Island and Blockhouse, together with their associated islets.

The marine section of the site includes areas of open water within the lough itself and in the area of the lough mouth seawards to the limits of territorial waters as well as coastal waters northwards to the Bloody Bridge area on the Mourne Coast. The landward boundary for this area is the **MEAN LOW WATER MARK**.

The Ramsar boundary is coincident with the terrestrial component of the SPA.

## **6 SPA SELECTION FEATURES**

Feature Type	Feature	Population (5 year mean 1995-2000) except where stated	Population at time of designation (ASSI)	Population at time of designation (SPA)	SPA Review population	Common Standards Monitoring baseline
Species	Sandwich Tern <sup>a</sup>	575 pairs 5 year mean (2010–2014)		575	575	270 (1994-1998)
Species	Common Tern <sup>b</sup>	339 pairs 5 year mean (2010–2014)	218	339	339	250 (1994-1998)
Species	Light-bellied Brent Goose <sup>a</sup>	435 5yr peak mean 2007/08 – 2011/12	225	319	319	89 (1993/94-1997/98)
Habitat <sup>1</sup>	Habitat extent					
Habitat <sup>1</sup>	Roost site locations					

Table 1. List of SPA selection features.

<sup>1</sup> Habitat is not a selection feature but is a factor and is more easily treated as if it were a feature. Habitat extent is also used for breeding birds reported as an area.

#### Notes on SPA features – may not be applicable to all SPAs

The above table lists all relevant qualifying species for this site. As the identification of SPA features has and continues to evolve, species may have different status but all should be considered in the context of any HRA process. Ultimately all SPAs will be renotified to formalise species features.

<sup>a</sup> – species cited in current SPA citation and listed on current N2K dataform

<sup>b</sup> – species selected post SPA designation through UK SPA Review 2001

<sup>c</sup> – species highlighted as additional qualifying features through the UK SPA Review 2015 or the UK marine SPA programmes.

## 6.1 ADDITIONAL ASSI SELECTION FEATURES

Feature Type (i.e. habitat, species or earth science)	Feature	Size/ extent / pop <sup>c</sup>	Population at time of designation (ASSI)	Common Standards Monitoring baseline
Habitat	Intertidal mudflats			
Habitat	Coastal saltmarsh			
Species	Great Crested Grebe		200	33 (1990/91-1995/96)
Species	Shelduck		233	165 (1990/91-1995/96)
Species	Scaup		342	197 (1990/91-1995/96)
Species	Red-breasted Merganser		36	9 (1990/91-1995/96)
Species	Oystercatcher		850	373 (1990/91-1995/96)
Species	Dunlin		1602	200 (1990/91-1995/96)
Species	Redshank		617	557 (1990/91-

				1995/96)
Species	Invertebrate assemblage			
Earth Science	Pleistocene			
Earth Science	Carboniferous Stratigraphy			

Table 2. List of ASSI features, additional to those that form all or part of SPA selection features. These will be referred to in ANNEX II.

## 7. CONSERVATION OBJECTIVES

The Conservation Objectives for this site are:

*To maintain each feature in favourable condition.*

For each feature there are a number of component objectives which are outlined in the tables below. Component objectives for Additional ASSI Selection Features are not yet complete. For each feature there are a series of attributes and measures which form the basis of *Condition Assessment*. The results of this will determine whether a feature is in favourable condition, or not. The feature attributes and measures are found in the attached annexes.

## 8 CARLINGFORD LOUGH SPA CONDITION ASSESSMENT 2014

Species	Year 1	Year 2	Year 3	Year 4	Year 5	CSM	5 yr mean	% CSM	Status
Light-bellied Brent Goose	538	508	542	483	626	189	539.40	<b>285.40</b>	Favourable
Common Tern (B)	0	10	?	84	130	250	56.00	<b>22.40</b>	Unfavourable
Sandwich Tern (B)	290	0	0	0	78	270	73.60	<b>27.26</b>	Unfavourable

## 9 SPA SELECTION FEATURE OBJECTIVES

To maintain or enhance the population of the qualifying species

Fledging success sufficient to maintain or enhance population

To maintain or enhance the range of habitats utilised by the qualifying species

To ensure that the integrity of the site is maintained;

To ensure there is no significant disturbance of the species and

To ensure that the following are maintained in the long term:

- Population of the species as a viable component of the site
- Distribution of the species within site
- Distribution and extent of habitats supporting the species
- Structure, function and supporting processes of habitats supporting the species

Feature	Component Objective
Sandwich Tern breeding population	As above
Sandwich Tern breeding population	Fledging success sufficient to maintain or enhance population
Common Tern breeding	As above

population	
Common Tern breeding population	Fledging success sufficient to maintain or enhance population
Light-bellied Brent Goose wintering population	As above
Habitat Extent	To maintain or enhance the area of natural and semi-natural habitats used or potentially usable by Feature bird species (780 ha intertidal area), (breeding areas 0.62 ha) subject to natural processes
Habitat Extent	Maintain the extent of main habitat components subject to natural processes
Roost sites	Maintain or enhance sites utilised as roosts

Table 3. SPA Component objectives

### Tern nesting localities current and historical (TO BE FINALISED)

Green Island
Greencastle Point

Table 4. Tern nesting locations within the SPA

## 9.1 ADDITIONAL ASSI SELECTION FEATURE OBJECTIVES

Feature	Component Objective
Intertidal mud/sand	
Coastal saltmarsh	
Great Crested Grebe	As for SPA selection feature objectives
Shelduck	As for SPA selection feature objectives
Scaup	As for SPA selection feature objectives
Red-breasted Merganser	As for SPA selection feature objectives
Oystercatcher	As for SPA selection feature objectives
Dunlin	As for SPA selection feature objectives
Redshank	As for SPA selection feature objectives
Pleistocene	
Carboniferous Stratigraphy	

Table 4. ASSI Component objectives

## 10. MANAGEMENT CONSIDERATIONS

### See also Views About Management for relevant ASSI

**Owner/Occupier's** – (to be used to identify any key management considerations arising from ownership e.g. owners/organisations having an obvious bearing on conservation matters or from management agreements).

Approximately 35 individuals/organisations own land within the SPA. Major landowners and leasees within the SPA, relevant to the site management, include Mourne Ltd, Crown Estate Commissioners, National Trust and Private Individuals. The National Trust own areas of offshore islands. The RSPB are responsible for management of the tern colony. The terns at time of writing solely use Green Island which has a well-documented history of erosion and is subject to over-washing by storm waves. Stabilisation works may be required in the future.

A more immediate management issue is the threat posed by large species of gull (particularly Greater Black-backed Gull) roosting and breeding on the island. This results in disturbance to the nesting terns and predation of eggs and young. This is being

addressed through selective destruction of gull nests and eggs and broadcasting gull alarm calls.

There may be conflicts of interest between the requirements of individual/organisations, both within and adjacent to the SPA, and the site management needs.

Responsibility for the marine area (sea bed) falls principally to Crown Estate Commissioners. A range of other bodies have a role for navigation, fishing, and health and safety issues.

Adjacent commercial operations which may impact upon the SPA include the ports at Warrenpoint and Greenore. Future expansion of port facilities and the proposed ferry from Greencastle, may lead to loss of the intertidal area within the SPA and result in disturbance to the qualifying bird populations.

The Carlingford Lough marine extension includes waters adjoining the commercial fishing ports at Kilkeel and Annalong. Current activities at these ports will not be affected by the enlarged site while any future development plans, as for any proposals with the potential to impact on the site interests, will be assessed against the site Conservation Objectives.

An assessment of the site boundary against commercial fisheries activity suggests that there is little activity within the site. Given that these sites are already important and of sufficient quality to support the birds, it may be reasonable to assume that current fishing in many of these areas is largely compatible with the birds' interest. However in cases where a type and level of fishing activity might impact upon the birds, a review may be needed so that authorities can establish the extent to which the fishing activities do influence the birds' interests. A fuller assessment of the distribution of fishing activities and the relationship between commercial stocks and site feature prey requirements will be undertaken.

There are no management agreements within the SPA.

## 11. MAIN THREATS, PRESSURES, ACTIVITIES WITH IMPACTS ON THE SITE OR SITE FEATURES

**Notifiable Operations** - Carrying out any of the Notifiable Operations listed in the schedule could affect the site. The list below is not exhaustive, but deals with the most likely factors that are either affecting Carlingford Lough SPA, or could affect it in the future. Although, features 1, 2, 3, 4 etc, are the qualifying SPA features, factors affecting ASSI features are also considered.

### **Generic site/feature issues**

<b>Issue</b>	<b>Threat/comments</b>	<b>Local considerations</b>	<b>Action</b>
Adjoining habitat	Particularly important for swans and geese as well as providing high tide roost locations. Significant changes in land management and disturbance are key considerations. Such areas may lie without the site making effective management of developments other than those for which planning permission is	Appears to be of minimal consequence other than for high tide roosts.	Assess planning applications. Identify key areas and promote site management schemes. Review use of Wildfowl Refuges. Consider the collective impact.



	required, difficult.		
Aquaculture	Disturbance is usually a minor consideration unless carried out deliberately to minimise losses to shell-feeding waterfowl. Alteration and loss of natural littoral and sub-littoral communities through seeding, tray/trestle cultivation, dredging/control of pest species. Naturalisation of introduced species – both the shellfish themselves and associated species e.g. algae and disease vectors.	Existing licences widespread both within and outside SPA.	Liaise with DARD Fisheries Division. Assess all license applications individually. Consider the collective impact.
Bait digging – commercial or ‘recreational’ and shellfish gathering.	Disturbance and impact on sediment and invertebrate fauna – may be positive through making deeper prey items available on surface. Shellfish gathering represents a net loss to the system in terms of biomass. Generally unregulated.	Degree unknown	Monitor scale of activity. Consider the collective impact.
Beach sand and gravel extraction.	Disturbance issue together with loss of biologically active upper sediments. Most beach systems are sedimentologically closed thus material removed may not be renewed making the activity unsustainable. May lead to changed sediment character of beach ultimately impacting on birds.	Degree unknown. Offshore gravel islands are subject to erosion and so no sand or gravel extraction should be permitted that could impact on these.	‘Permitted’ extraction of beach sand and gravel should be halted through management agreements. Ad hoc removal should be addressed in conjunction with local authorities and through marine regulations.
Boating activity – commercial	Disturbance and potential for impact from high-speed shipping.	Active ports at Greenore and Warrenpoint with proposed ferry operating from Greencastle. Disturbance and enhanced wash impact on islands especially are the main consideration.	Formal consultation likely relating to new schemes through planning and marine regulation. Consider the collective impact.
Boating activity – recreational	Disturbance and potential for impact especially from jet skis. Generally relevant to particularly sensitive areas within site.	Current level of activity is unknown – main concern is of disturbance at tern colonies.	Liaise with appropriate authority with codes of good practice, zoning and use of by-laws as necessary. Consider the collective impact.
Coastal protection schemes	Where there is no history of this, it impacts on natural beach systems with loss of habitat.	Mainly natural coastal transitions except around Greencastle. Proposed ferry development may bring need for additional works.	Liaise with planning and marine licensing authorities together with other parties with an involvement in coastal management.
Cull of fledglings/ young	Licensed selective culling of species impacting on ‘more desirable’ species. Licensed by NIEA.	No activity at present – may be required as part of the management of the tern colonies.	Consider the collective impact.
Dredging	Generally only an issue in relation to commercial shipping channels. Issues include disturbance,	Current position unknown. Main channel activity presumably is	Liaise with port authority and licensing bodies as required with regard to water quality issues and

	remobilisation of contaminated sediment and spoil dumping zones.	long-established. Dredging to accommodate the proposed ferry is close to the semi-stable tern islands and must be assessed very carefully.	pollution incidents.
Fishing – commercial or recreational	Minimal disturbance consideration but may represent ‘competition’ for piscivorous birds. Represents a net loss to the system in terms of biomass.	Most commercial activity related to aquaculture. Current position unclear but there is little or no overlap between commercial stock and tern prey species. Recreational fishing not deemed to be a problem.	Liaise with DARD and fishing authority as required. Liaise with angling clubs as required.
Habitat extent – inter-tidal	Loss of habitats through development, changes in coastal processes. Loss of inter-tidal habitat is a critical issue as this is the feeding zone for the majority (numbers and species) of birds.	Limited development pressure except from ferry proposal.	Assess planning and marine licensing applications. Monitor using aerial photography.
Habitat extent – open water	Loss likely to be limited but expansion of commercial port facilities can impact on key localities.	Limited development pressure except from ferry proposal.	Assess planning and marine licensing applications. Consider the collective impact.
Habitat quality – inter-tidal	Alteration of habitat quality through diminution of water quality, invasive species or changes in coastal processes.	Main concern relates to Spartina.	Assess planning and marine licensing applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
Habitat quality – open water	Alteration of habitat quality through diminution of water quality or invasive species.	Commercial activity is centred on Warrenpoint and Greenore. No obvious impacts on SPA.	Assess planning and marine licensing applications. Deal with invasive alien species by preventing their spread or reducing their impact. Liaise with Environmental Protection as required with regard to water quality issues and pollution incidents. Consider the collective impact.
Habitat extent and quality-breeding	Alteration of habitat area or quality through inappropriate use or absence of site management.	Historical tern colonies impacted by erosion. May require stabilisation and periodic ‘rebuilding’.	Assess needs of breeding species. Liaise with RSPB and other owners or appropriate authority to adjust or introduce site management if necessary.
Introduced species	Range of threats from loss of habitat, feeding competition, disease, hosting species presenting a threat outside of the site.	Issues relate to aquaculture and Spartina. Spartina is the main issue with spread resulting in loss of more significant inter-tidal and saltmarsh habitats.	Liaise with appropriate authority. Consider feasibility of elimination. Participate in national/international initiatives.
Marine renewable energy developments	Potential for disturbance and direct impact to terns in flight and actively feeding (diving)	No site related proposals at time of writing. Potential for impact from schemes elsewhere	Assess planning and marine licensing applications. To be addressed through HRA process.

Predation.	Mainly of concern on bird breeding sites.	Need to assess large gull impact on tern colony. See culling issue above.	Liaise with RSPB. Carry out appropriate site management.
Recreational activities.	Disturbance is the main consideration. Apart from disturbance of birds themselves, breeding birds, especially seabirds, are vulnerable to disturbance as absence of adults can often result in predation or chilling of eggs/young with a reduction/loss in productivity success.	Greencastle area is an important tourism/recreational destination but terns seem unaffected. Issue as it relates to Brent is unknown. Shoreline has been heavily used for recreational activities over long timescale. Cumulative disturbance impacts (e.g. boating, wildfowling, walkers, dogs etc) may be a significant factor for wintering bird populations impacting on both feeding (inter-tidal) and roosting birds	Liaise with local authorities and other managing parties.
Research activities.	Census and ringing activities especially have the potential to impact on bird populations, particularly at breeding sites.	Routine winter WEBS counts and summer breeding census of terns nests are undertaken.	Census and ringing activities to be undertaken by competent individuals, appropriately trained. In case of ringers, appropriate license must be held.
Seaweed harvesting	Either cutting living weed or gathering storm debris. The former, depending on scale and frequency, may fundamentally impact on shore communities and their ability to support waterfowl. The latter, represents a net loss to the system in terms of habitat and biomass.	Current position unclear	'Permitted' harvesting may be undertaken and should be reviewed with regard to location, scale and assessed for impacts.
Sand dredging - commercial	Not actively pursued in the NI marine environment but pressures to seek alternative sources to terrestrial/freshwater sites may make this potentially viable.	Potential to impact seabed habitat of importance to seabird prey species.	Liaise with commercial operators, planning and other regulatory authorities.
System dynamics	Cuts across many other issues. Dynamic systems, especially coastal, can be affected by many factors especially engineered structures and significant changes in dominant wind direction or storm frequency. Many systems may indeed still be undergoing responses to historical developments e.g. partial reclamation, seawall construction. Changes may include alteration in sediment grade, shifts in patterns of erosion and deposition etc. Consequences for habitat and species utilisation of the site can be profound.	Coastal engineering at Greencastle, Cranfield area and along the coastline northwards to the boundary limits. Expanding aquaculture represents an alteration to substrate.	Human induced change should be minimised. Assess planning applications and liaise with other relevant authorities. Ad hoc dumping and removal of natural materials should be managed. Major natural shifts in system behaviour may be identified through analysis of aerial photographs and site monitoring. Major and consistent changes to patterns of habitat distribution and bird utilisation of the site should be noted. Green Island, one of the Tern nesting sites, is subject to erosion. Action to stabilise may be necessary in the future.
Wildfowling	Has direct effect through bag	Extent of activity is	Liaise with relevant shooting bodies

	sizes/bag species and wider disturbance issue. Issue of regulated (through recognised shooting clubs) and ad hoc shooters. Lead shot on grazing lands.	unclear.	(BASC especially) to define areas for wildfowling, the development of Wildfowling Codes of Good Practice and encourage bag returns. Support pressure to stop use of lead shot. Review use of Wildfowl Refuges. Consider the collective impact.
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Table 5. List of site/feature management issues

## 12. MONITORING

Monitoring of our Special Protection Areas takes place at a number of levels, using a variety of methods. Methods for both Site Integrity Monitoring and Condition Assessment can be found in the Monitoring Handbook (To be written).

Maintain the integrity of the site. Undertake Site Integrity Monitoring (SIM) at least annually to ensure compliance with the SPA/ASSI schedule. The most likely processes of change (e.g. dumping, infilling, gross pollution) will either be picked up by Site Integrity Monitoring, or will be comparatively slow (e.g. change in habitat such as growth of mussel beds). More detailed monitoring of site features should therefore be carried out by Site Condition Assessment on a less frequent basis (every 6 years initially to pick up long-term or more subtle changes). A baseline survey will be necessary to establish the full extent of the communities present together with the current condition of the features, against which all further condition assessments will be compared.

In addition, detailed quality monitoring or verification monitoring may be carried out from time to time to check whether condition assessment is adequate to detect long-term changes that could affect the site. This type of quality monitoring may involve assessment of aerial photographs to determine site morphological changes. Methodology for this is being developed.

### 12.1 MONITORING SUMMARY

1. Monitor the integrity of the site (Site Integrity Monitoring or SIM) – Complete boundary survey to ensure integrity of site and that any fencing is still intact. Ensure that no sand extraction or dumping has been carried out within the SAC boundary. This SIM should be carried out once a year.
2. Monitor the condition of the site (Condition Assessment) - Monitor the key attributes for each selection feature (dune, saltmarsh, species). This will detect if the features are in favourable condition or not. See Annexes I and II for SAC and Additional ASSI Features respectively.

The favourable condition table provided in Annex 1 is intended to supplement the conservation objectives only in relation to management of established and ongoing activities and future reporting requirements on monitoring condition of the site and its features. It does not by itself provide a comprehensive basis on which to assess plans and projects, but it does provide a basis to inform the scope and nature of any appropriate assessment that may be needed. It should be noted that appropriate assessments are a separate activity to condition monitoring, requiring consideration of issues specific to individual plans or projects.

## **12.2. ADDITIONAL MONITORING ACTIONS UNDERTAKEN FOR SITES IN UNFAVOURABLE CONDITION**

Monitoring actions set out in section 6 and Annex 1 will use, amongst other attributes, bird population data to determine site condition. In the event of a significant population decline being detected, a series of subsequent actions will be initiated. The following list is not exhaustive, actions will be site dependant, but the order of these points IS hierarchical i.e. consider point 1, then 2, etc.

1. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, world. Refer to BTO ALERT limits etc. Liaise with other competent bodies to meaningfully assess wider pattern. No site action if site decline mirrors regional pattern the cause of which is not related to the site. Action may be required at regional or larger scale. If the cause of the regional population decline (e.g. eutrophication) is found at the site then action may be necessary, but this may need to form part of a network of strategic species action. Further research may be required.
2. Assess the site population in a wider geographical context – Northern Ireland, Ireland, UK, Europe, world. Determine if site losses are balanced by gains elsewhere e.g. breeding terns. Review site condition to determine if losses are due to site deterioration. Determine if possible whether population has relocated within SPA series (national, biogeographical, European). Note that the reasons for such locational changes may not be readily identifiable. Further research may be required.
3. For passage/wintering species assess breeding information. No site action if site decline is due to breeding ground failure, unless breeding ground failure is related to poor adult condition resulting from factors affecting wintering / passage birds.
4. Determine whether a major incident has affected the site e.g. toxic impact on prey items, predation event or geographical shift in available prey. Ability to respond to impacts may be limited.
5. Assess condition of principal site habitats e.g. vegetational composition and structure, change in habitat balance e.g. mudflats reduced by encroaching mussel beds.
6. Assess prey availability. Issues to consider are both within site e.g. water quality, broad site management, and without site e.g. climatically driven factors.
7. Assess whether there have been any changes in any other site features or management practices (see Table 3) that may have affected populations of site selection features.

8. Long-term site value must be considered even when it is found to be in unfavourable condition for a number of reporting cycles. This is particularly important for breeding seabird and wader sites where ongoing appropriate management may ultimately encourage re-establishment of a favourable population.

### 13. SELECTION FEATURE POPULATION TRENDS

Site trends are reported using running 5 year means of annual maximum count (WeBS data). Long term trends in index values have been used to assess changes in overall wintering populations for Northern Ireland and UK (WeBS data). Caution is always necessary in the interpretation and application of waterbird counts given the limitations of these data. The reduced number of both sites and birds in Northern Ireland, result in a greater degree of fluctuation. Trends for Ireland are based on five years of data 1994-1999 (I-WeBS data). Consequently short-term fluctuations apparent in the data series may reflect changes in between year productivity, or other short term phenomena, rather than being indicative of a real change in a population.

<b>SPECIES</b>	<b>SITE TREND</b>	<b>NI TREND</b>	<b>ROI TREND</b>	<b>UK TREND</b>	<b>COMMENTS</b>
Sandwich Tern	-	-	-	-	Not known, to be compiled.
Common Tern	-	-	-	-	Not known, to be compiled.
Light-bellied Brent Goose	Fluctuating	Fluctuating	Slight Fluctuation	-	

## ANNEX I

### Feature (SPA) – Breeding Seabirds

= primary attribute. One failure among primary attribute = unfavourable condition

# = optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
* Sandwich Tern breeding population	Apparently occupied nests	No significant decrease in Sandwich Tern breeding population against national trends	Requirement that annual data is collected, then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Sandwich Tern fledging success	Annual survey (as per Gilbert <i>et al.</i> 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined
* Common Tern breeding population	Apparently occupied nests	No significant decrease in Common Tern breeding population against national trends	Requirement that annual data is collected, then apply 5 year mean criteria. Ideally the population will be maintained above 1% of the national population. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
# Common Tern fledging success	Annual survey (as per Gilbert <i>et al.</i> 1998). Determine number of fledglings raised and add to total number of fledglings raised over previous four years and divide by five to obtain average. This should remove variation from season to season, e.g. in response to bad weather.	>1 fledgling per pair successfully raised per year over five year period	Appropriate level of fledgling survival to be determined



### Non-Avian Factors – habitat

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural and semi-natural habitat	Maintain the area of natural and semi-natural habitats used by notified species, within the SPA, subject to natural processes.	Monitor once every reporting cycle by aerial photography.
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures or breeding sites, where this would lead to different usage by notified species.

### Feature (SPA) – Wintering Waterfowl

Attribute	Measure	Targets	Comments
* Light-bellied Brent Goose wintering population	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

### Non-Avian Factors – habitat

Attribute	Measure	Targets	Comments
* Habitat extent	Area of natural	Maintain the area of natural and semi-natural	Monitor once every reporting cycle by aerial photography.

	and semi-natural habitat	habitats used by notified species, within the SPA, subject to natural processes.	
# Extent of different habitats	Extent of different habitats	Maintain the extent of main habitat components subject to natural processes	Evaluate habitat quality should bird populations decline due to on site factors. Map any changes in area. This may include mapping areas with different vegetation structures where this would lead to different usage by notified species.
# Roost sites	Location of roost sites	Maintain all locations of roost sites.	Map roost site locations. Visit once every reporting cycle to ensure sites are available

## ANNEX II

### Feature (ASSI)

\* = primary attribute. One failure among primary attribute = unfavourable condition

# = optional factors. These can be in unfavourable condition without the site being in unfavourable condition

Attribute	Measure	Targets	Comments
Intertidal mud/sand			
Coastal saltmarsh			
Great Crested Grebe	Bird numbers	No significant decrease in population against national trends, caused by on-site factors	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Shelduck	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Scaup	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.

Red-breasted Merganser	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Oystercatcher	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Dunlin	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Redshank	Bird numbers	No significant decrease in population against national trends	Five year running averages will be used to monitor population trends through WeBs data. Decline to a level below the Common Standards Monitoring baseline over a five year period may indicate unfavourable condition of the site.
Pleistocene			
Carboniferous Stratigraphy			