A6.41 Goldeneye *Bucephala clangula* (non-breeding)

1. Status in UK

Biological status		Legal status		Conservation status	
Breeding	✔	Wildlife and Countryside Act 1981	**General Protection** **Schedule 1(2)** **Schedule 2(1)**	Species of European Conservation Concern	
Migratory	✔	Wildlife (Northern Ireland) Order 1985	**General Protection** **Schedule 1(2)** **Schedule 2(1)**	(UK) Species of Conservation Importance	**Table 4**
Wintering	✔	EC Birds Directive 1979	**Annex II/2** **Migratory**	All-Ireland Vertebrate Red Data Book	

2. Population data

	Population sizes (individuals)	Selection thresholds	Totals in species' SPA suite
GB	17,000	170	4,352 (26% of GB population)
Ireland	11,000	110	8,436 (77% of all-Ireland population)
Biogeographic population	300,000	3,000	12,788 (4% of biogeographic population)

GB population source: Kirby et al. *1993*
Ireland population source: Way et al. *1993*
Biogeographic population source: Rose & Scott 1997

3. Distribution

The Goldeneye has a wide breeding distribution across northern Eurasia and North America, mainly within the taiga zone (Scott & Rose 1996). The non-breeding range extends south to the Mediterranean, Black and Caspian Seas, China, Japan and the southern USA. Two subspecies have been identified: the nominate form occurs in Eurasia, whilst the form *B. c. americana* occurs in North America.

During the winter, this species favours coastal areas in the northern part of its range and large rivers, lakes, reservoirs and coastal lagoons further south (Scott & Rose 1996). In Europe, Goldeneyes migrate south and west from their northern breeding areas in continental Eurasia to winter on the southern coasts of Norway, the western Baltic, and the southern North Sea. They occur inland in central Europe as well as on many of the major European river systems.

Non-breeding Goldeneyes are widespread through Britain and Northern Ireland (Campbell 1986; Pollitt *et al.* 2000). At some coastal locations and along many rivers in the north of Britain, distribution is more local and wintering flocks are far smaller. Patterns of movements between sites during the winter are unclear although there is some indication that during periods of harsh weather birds move from frozen inland waters to the coast (Campbell 1986).

In Britain and Northern Ireland, Goldeneyes winter in both freshwater and coastal habitats where the species feeds predominantly on small invertebrates (including crabs and bivalves), small fish and some plant material (Campbell 1986; Owen *et al.* 1986). Limited ringing information suggests that the majority of non-breeding birds in Britain and Northern Ireland originate from breeding grounds in Scandinavia and western Russia (Campbell 1986). A small population also breeds in Scotland and may winter on nearby lochs and rivers (Campbell 1986), although movements of ringed birds to Northern Ireland have been shown (Buxton unpublished).

4. Population structure and trends

Five biogeographic populations of the nominate sub-species are recognised, of which four occur in Europe. Non-breeding Goldeneyes in Britain and Northern Ireland form part of the north-west and central European biogeographic population, the majority of which winter in the Baltic (Owen *et al.* 1986).

The number of Goldeneyes wintering in north-west Europe has increased by approximately 50% since the mid-1980s (Rose 1995; Delany *et al.* 1999). This is largely due to an increase in the breeding populations in Finland, Sweden, Denmark, Estonia and Poland (Dennis & Pöysä 1997). In contrast to the situation in north-west Europe, numbers wintering in central Europe have remained stable over the last 20 years (Delany *et al.* 1999).

The Goldeneye is a hole-nesting duck and many of the increases in north-west Europe have, in part, been attained through programmes of nest-box erection (del Hoyo *et al.* 1992), even in areas rich in natural breeding habitat (Dennis & Pöysä 1997).

Non-breeding numbers in Britain have remained relatively stable since the 1950s (Owen *et al.* 1986; Pollitt *et al.* 2000). Numbers have declined markedly in Northern Ireland however, at least since the 1980s, when co-ordinated monitoring began (Cranswick *et al.* 1999). In contrast, numbers wintering in the Republic of Ireland have remained relatively stable, during the 1990s at least (Colhoun 2000). The number of Goldeneyes crossing the North Sea to Britain and Northern Ireland each winter is dependent on weather conditions in north-west Europe; the majority of birds arriving in late winter (Owen *et al.* 1986). As Northern Ireland is at the western limit of their wintering range (Scott & Rose 1996), it is possible that the lower numbers of recent years reflect a series of mild winters. Alternatively, it is possible that birds have moved from key sites, *e.g.* Loughs Neagh and Beg, to other habitats such as rivers, which are poorly monitored at present (Cranswick *et al.* 1999). Reduced food availability at these important sites may have precipitated this switch in habitats or even countries.

The Goldeneye has been shown to be strongly attracted to sewage outfalls and discharges of waste from breweries and food processing plants, especially in Scotland (Pounder 1976). Birds appear to be attracted to grain and vegetable waste in particular (Campbell 1978). During the 1960s and 1970s it was not unusual for peak numbers in excess of 3,000 individuals to occur at outfalls on the south side of the Forth in Edinburgh (Owen *et al.*

1986). Improved sewage treatment procedures have led to major reductions in numbers of Goldeneye using these areas in recent decades (Campbell 1986). However, these localised reductions appear to have had little effect on the total number of Goldeneye in Britain.

5. Protection measures for population in the UK

SPA suite
In the non-breeding season, the UK's SPA suite for Goldeneye supports, on average, 12,788 individuals (calculated using WeBS February site totals for the period 1992/93 to 1996/97 – see section 4.4.1 and Appendix 2 for further explanation). This total amounts to about 26% of the British wintering population, and about 77% of the all-Ireland population. The suite holds about 4% of the international flyway population on 15 sites where Goldeneye has been listed as a qualifying species (Table 6.41.1).

6. Classification criteria

The single site (Lough Neagh and Lough Beg) in the UK supporting more than 1% of the international population was considered under Stage 1.2, and was selected after consideration of Stage 2 judgements. A further 14 sites were considered and selected under Stage 1.3 (see section 5.3), given that Goldeneye was identified as an important component of wider non-breeding waterbird assemblages at these localities.

The sites include the main terrestrial centres of the population in the UK, spread throughout Northern Ireland, Scotland and England. All sites are multi-species SPAs, of importance also for a range of other waterbirds. There is a very long recorded history of occupancy at most of these sites (Boyd in Atkinson-Willes 1963).

As the selection of sites under Stages 1.2 and 1.3 resulted in a terrestrial SPA suite which includes the main population centres of non-breeding Goldeneye in the UK, it was not considered necessary to select additional terrestrial sites using Stage 1.4.

Distribution map for non-breeding Goldeneye SPA suite

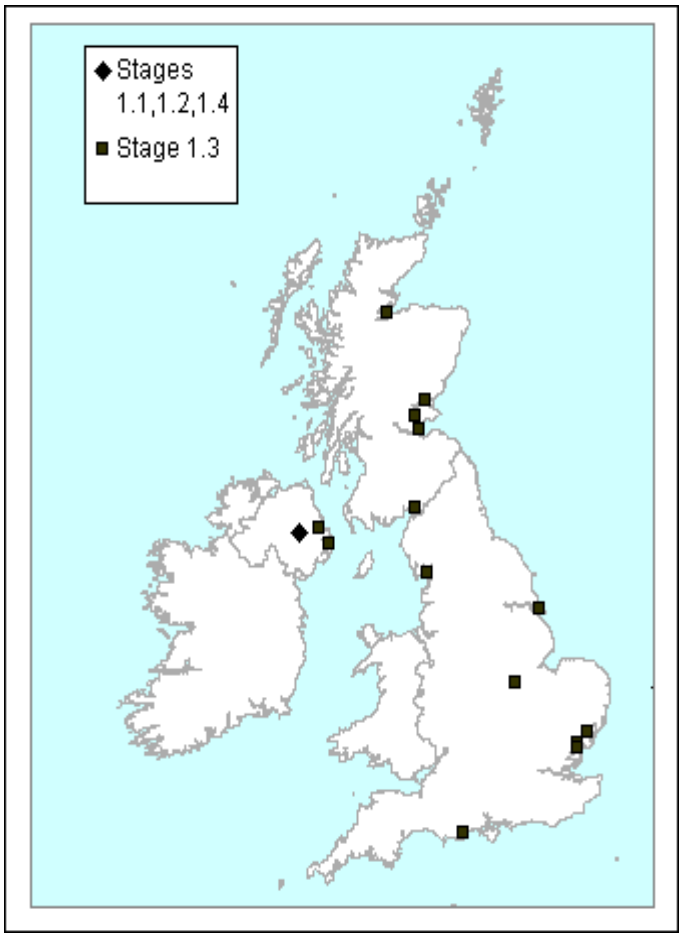

Table 6.41.1 – SPA suite

Site name	Site total	% of biogeo-graphical population	% of national population	Selection stage
Abberton Reservoir	463	0.2	2.7	1.3
Belfast Lough	540	0.2	4.9 (Ire)	1.3
Blackwater Estuary	391	0.1	2.3	1.3
Firth of Forth	2,267	0.8	13.3	1.3
Firth of Tay and Eden Estuary	255	<0.1	1.5	1.3
Humber Flats, Marshes and Coast (Phase 1)	272	<0.1	1.6	1.3
Inner Moray Firth	199	<0.1	1.2	1.3
Loch Leven	338	0.1	2.0	1.3
Lough Neagh and Lough Beg	10,776	3.6	98.0 (Ire)	1.2
Morecambe Bay	445	0.1	2.6	1.3
Poole Harbour	195	<0.1	1.2	1.3
Rutland Water	399	0.1	2.3	1.3

Site name	Site total	% of biogeo-graphical population	% of national population	Selection stage
Stour and Orwell Estuaries	215	<0.1	1.3	1.3
Strangford Lough	335	0.1	3.1 (Ire)	1.3
Upper Solway Flats and Marshes	190	<0.1	1.1	1.3

TOTALS	12,788 (in February)	4.3%	25.6% 76.7% (Ire)