

A6.95 Puffin *Fratercula arctica* (breeding)

1. Status in UK

Biological status		Legal status		Conservation status	
Breeding	✓	Wildlife and Countryside Act 1981	General Protection	Species of European Conservation Concern	SPEC 2 Unfavourable conservation status (vulnerable) and concentrated in Europe
Migratory	✓	Wildlife (Northern Ireland) Order 1985	General Protection	(UK) Species of Conservation Importance	Table 4
Wintering	✓	EC Birds Directive 1979	Migratory	All-Ireland Vertebrate Red Data Book	

2. Population data

	Population sizes (pairs)	Selection thresholds	Totals in species' SPA suite
GB	449,000	4,490	467,886 (c. 100% of GB population)
Ireland	20,500	205	2,398 (12% of all-Ireland population)
Biogeographic population	901,000	9,010	470,284 (52% of biogeographic population)

GB population source: Lloyd et al. 1991

All-Ireland population source: Gibbons et al. 1993

Biogeographic population source: Lloyd et al. 1991

3. Distribution

The Puffin is endemic to the North Atlantic and associated seas (Harris 1984). Its range extends from the eastern seaboard of North America in Newfoundland, across the islands of the North Atlantic (Greenland, Iceland, Britain and Ireland, Svalbard) to the west coast of Novaya Zemlya (Cramp 1995). The species is polytypic, with three described sub-species, all of which occur in European waters. The nominate race *F. a. arctica* breeds at mid-latitudes, from eastern North America to southern Novaya Zemlya. *F. a. naumanni* breeds further north in high Arctic waters in north-west and eastern Greenland, Svalbard and northern Novaya Zemlya. *F. a. grabae* has the most southerly distribution and breeds in Britain, Ireland, the Faeroes, Channel Islands, France and southern Norway (Cramp 1985). In mainland Europe, breeding is confined to the coasts of Brittany, Norway and Russia (Kola peninsula).

The vast majority of the British and Irish population breed in Scotland with the St. Kilda archipelago holding the largest colony (Lloyd et al. 1991). Other principal breeding areas include Shetland (particularly Fair Isle and Foula), Orkney, Sule Skerry, the Isle of May and the Western Isles including the Shiant Islands. The main breeding area in England lies in the

north-east, with large colonies on the Farne Islands, Coquet Island and on the Bempton-Flamborough cliffs. Principal breeding areas in Wales include Skomer, Skokholm (both in Dyfed) and Ynys Gwylans (Gwynedd). Rathlin Island (Antrim) is the only major breeding location in Northern Ireland (Lloyd *et al.* 1991).

Puffins nest on exposed coasts and islands facing the ocean (Cramp 1985). At high latitudes, nests are located in crevices in steep and inaccessible cliffs of large islands, scree slopes or amongst rocks. The nest site preference at lower latitudes is for grass-covered, peaty turf on small islands or low coastal cliffs, or higher cliff terraces (Cramp 1985). It is the most marine of the British breeding auks, and, although there is a preference for continental shelf waters of 51–100 m depth, Puffins will use deeper waters than other auk species (Stone *et al.* 1995).

During the breeding season, Puffins feed in the waters around their breeding colonies. Outside the breeding season, they disperse more widely. In August and September there are particular concentrations off the east coast of Scotland, whilst by February and March, there has been a general movement southwards in the North Sea. In late winter, the main concentrations occur off the north-east coast of England (Stone *et al.* 1995).

4. Population structure and trends

The total population of *F. a. grabae* (which is used as the biogeographical population for this review) is estimated at 901,000 pairs (Cramp 1985; Lloyd *et al.* 1991). The combined British and Irish population of 469,500 pairs (1985–1987) makes up 52.1% of this biogeographical population (Stone *et al.* 1997).

Cramp *et al.* (1974) indicated dramatic declines at some British colonies, particularly on the west coast, during the early- and mid-20th century. For example, on Skomer the number of breeding pairs decreased from 50,000 in 1946 to 7,000 in 1969–1970. Lloyd *et al.* (1991) suggested that caution is needed with early records due to counting difficulties, together with normal variation in colony numbers. In addition, Harris (1984) concluded that the declines, although substantial as on St. Kilda, had been less marked than previously supposed. Differences in methodology make it difficult to assess how much Puffin numbers changed between the two national surveys of 1969–1970 and 1985–1987 (Lloyd *et al.* 1991).

Reliable population trend information is available for some colonies with long-term monitoring of burrow densities in sample plots (Harris 1984). These monitored colonies, located in St Kilda, the Shiant Islands, the Isle of May and in the Shetland archipelago, mostly showed stable numbers between the early 1970s and late 1980s, although numbers fluctuated at Dun, St. Kilda (Lloyd *et al.* 1991). An exception was the Isle of May where there was an annual increase of 22% in numbers between 1973 and 1981. This rate of increase would have been impossible without immigration from other colonies. After 1981, the rate of increase slowed abruptly with no increase during 1985–1991 (Harris & Wanless 1991). Census counts conducted at some colonies showed numbers increasing in north-east England with 6,800 pairs on the Farne Islands in 1969 and 20,700 pairs in 1984. Similarly, on nearby Coquet Island, numbers rose from 400 in 1969 to 3,300 in 1984 (Lloyd *et al.* 1991). The rate of increase in north-east England has now declined (Harris 1997). Census data for six colonies in south and south-west England showed that numbers fluctuated, with one Cornish colony being abandoned in 1980. In Antrim, Puffin numbers doubled between 1969 and 1985 (Lloyd *et al.* 1991).

Despite difficulties with assessing trends, declines in Puffin numbers have been noted since the 1960s in the Faeroes, France and the Channel Islands, but recently these trends have been halted (Harris 1997). The main French population on Sept Îles, off Brittany, declined from 10,000 pairs in 1912 to 250 pairs in 1982, and has since increased slightly or remained stable

(Harris 1997). Puffin populations in south-western Norway remained stable during the 1980s in contrast to northern populations where large declines have occurred (Anker-Nilssen & Barrett 1991).

Food availability appears to be a major factor influencing population change. The cessation of increase in the Isle of May colony coincided with a reduction in the numbers of Sprats *Sprattus sprattus* in the North Sea and a doubling of the annual mortality rate of breeding adults (Harris & Wanless 1991). The large decrease in the northern Norway population in the 1970s and 1980s was linked to a crash in Atlantic/Scandinavian Herring *Clupea harengus* stocks (Anker-Nilssen & Barrett 1991). Declines have often been exacerbated by local factors such as oiling or mammalian predation (Harris 1997). Conditions in the wintering areas also appear to be critical for Puffins (Harris 1993).

5. Protection measures for population in UK

SPA suite

During the breeding season, the UK's SPA suite for Puffin supports, on average, 470,284 pairs. This amounts to virtually the whole of the British breeding population, about 12% of the all-Ireland population and about 52% of the international population. The SPA suite contains 21 sites (Table 6.95.1) where Puffin has been listed as a qualifying species.

6. Classification criteria

The nine Puffin colonies in the UK that support more than 1% of the international breeding population (Coquet Island; Farne Islands; Firth of Forth Islands; Foula; Hermaness, Saxa Vord and Valla Field; Shiant Isles; Skomer and Skokholm; St Kilda; and Sule Skerry and Sule Stack) were considered under Stage 1.2, and all were selected after consideration of Stage 2 judgements. An additional 12 sites were selected under Stage 1.3 (see section 5.3), with Puffin identified as an important component of the breeding seabird assemblage at each of these localities.

All the sites selected are multi-species SPAs, important for a range of other seabirds. Many have a very long recorded history of occupancy, with written records from at least the latter part of the 19th century (Holloway 1996).

The suite encompasses sites in Northern Ireland, England, Wales and Scotland. As the selection of sites under Stages 1.2 and 1.3 resulted in adequate coverage of the range and numbers of this colonial species in the UK, it was not considered necessary to select additional sites using Stage 1.4.

Distribution map for breeding Puffin SPA suite

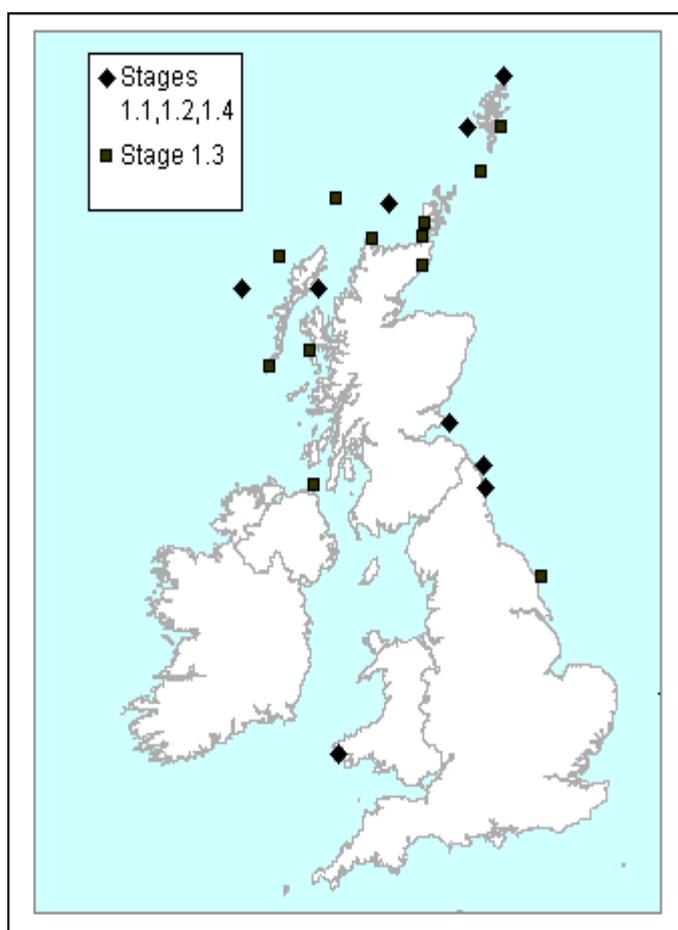


Table 6.95.1 – SPA suite

Site name	Site total	% of biogeographical population	% of national population	Selection stage
Canna and Sanday	1,225	0.1	0.3	1.3
Cape Wrath	5,900	0.7	1.3	1.3
Coquet Island	11,400	1.3	2.5	1.2
East Caithness Cliffs	1,750	0.2	0.4	1.3
Fair Isle	8,700	0.9	1.9	1.3
Farne Islands	34,710	3.9	7.7	1.2
Firth of Forth Islands	21,000	2.3	4.7	1.2
Flamborough Head and Bempton Cliffs	3,473	0.4	0.8	1.3
Flannan Isles	5,500	0.6	1.2	1.3
Foula	48,000	5.3	10.7	1.2
Hermaness, Saxa Vord and Valla Field	25,400	2.8	5.7	1.2
Hoy	3,500	0.4	0.8	1.3
Mingulay and Berneray	4,000	0.4	0.9	1.3

Site name	Site total	% of biogeographical population	% of national population	Selection stage
North Caithness Cliffs	1,750	0.2	0.4	1.3
North Rona and Sula Sgeir	5,250	0.6	1.2	1.3
Noss	2,348	0.3	0.5	1.3
Rathlin Island	2,398	0.3	11.7 (Ire)	1.3
Shiant Isles	76,100	8.5	17.0	1.2
Skomer and Skokholm	9,500	1.1	2.1	1.2
St Kilda	155,000	17.2	34.5	1.2
Sule Skerry and Sule Stack	43,380	4.8	9.7	1.2

TOTALS	470,284	52.2%	c. 100% 11.7% (Ire)
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