European Community Directive
on the Conservation of Natural Habitats
and of Wild Fauna and Flora
(92/43/EEC)

Second Report by the United Kingdom under Article 17

on the implementation of the Directive from January 2001 to December 2006

Conservation status assessment for :

S1364: *Halichoerus grypus* - Grey seal

S1364 *Halichoerus grypus* Grey seal

Audit trail compiled and edited by JNCC and the UK Inter-Agency Marine Mammal Working Group

This document is an audit of the data and judgements on conservation status in the UK's report on the implementation of the Habitats Directive (January 2001 to December 2006) for this species. Superscript numbers accompanying the headings below, cross-reference to headings in the corresponding Annex B reporting form. This supporting information should be read in conjunction with the UK approach for species (see 'Assessing Conservation Status: UK Approach').

1. Range Information[2.3]

Halichoerus grypus are found across the north Atlantic and in the Baltic Sea. There are two main centres of population: one in Canada centred on Nova Scotia and the Gulf of St Lawrence and the other around the UK, especially in Scottish waters (Special Committee On Seals [SCOS], 2006).

In Britain, the grey seal breeding colonies are found predominantly in the Hebrides and Orkney. There are additional colonies in Shetland, on the north and east coasts of mainland Britain and in Devon, Cornwall and Wales (Map 1.1). Outside the breeding season, in August, *H. grypus* are more widespread with the largest haul-out aggregations at locations affording good access to offshore foraging areas.

1.1 Surface area of range[2.3.1]

Unknown

Although the spatial distribution of haul-out sites is well-known, and some modelled density maps derived from telemetry could be created showing where seals are most likely to spend their time at sea, it is not possible to know the range over which *H. grypus* might occur in UK waters, and hence calculate the surface area of range. This species tend to remain over the continental shelf, but occasionally some individuals cross the shelf edge. Pups travel very widely, a long way up the Norwegian coast and down to the Netherlands from the Isle of May. The existing information on at-sea distribution of this species in UK waters comes from a small proportion of the population.

Range is a difficult parameter to define for marine mammals since they are highly mobile and their distribution can vary considerably in time and space across Member States. While understanding the distribution of marine mammal species might be helpful in assessing their conservation status and while range can be subjected to qualitative assessment, the data do not enable a quantitative estimate of surface area at present.

1.2 Date of range determination[2.3.2]

Not applicable

1.3 Quality of range data[2.3.3]

Good

Annual surveys are conducted of the major breeding colonies in Orkney and the North Sea, and in the Inner and Outer Hebrides (Map 1.1). Countryside Council for Wales (CCW) also undertakes annual pup monitoring at some colonies in Wales (e.g. Skomer Marine Nature

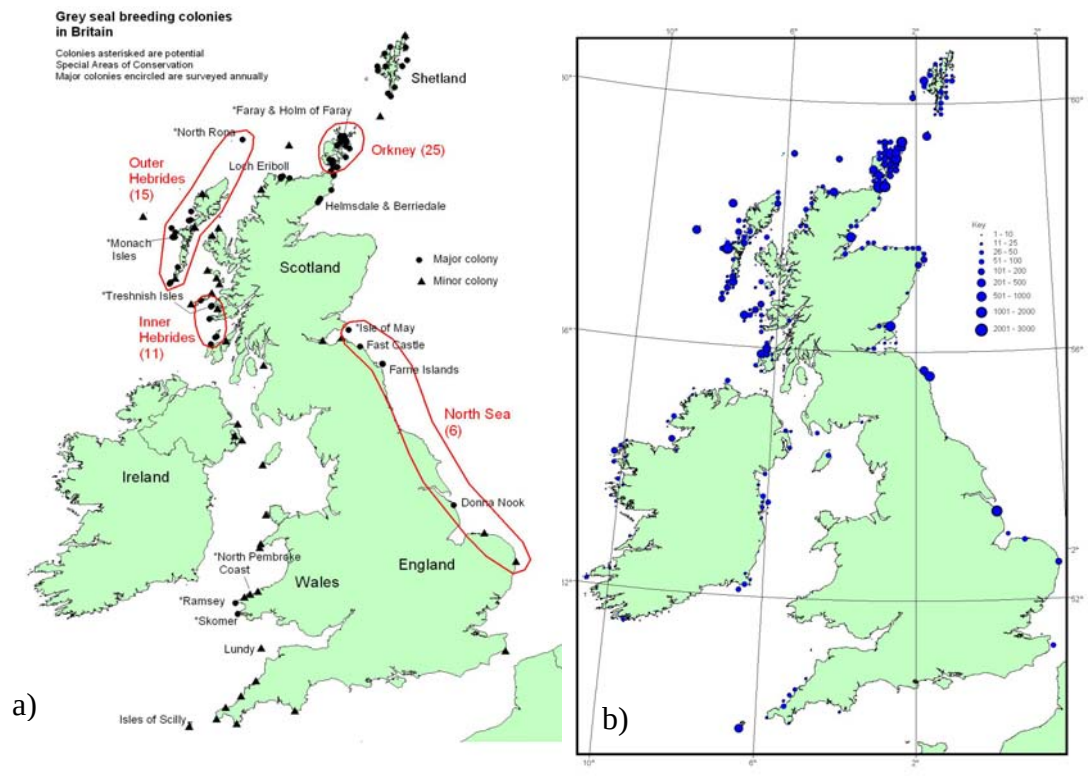
Reserve (MNR)); Scottish Natural Heritage (SNH) monitors pup production at South Ronaldsay (Orkney) and at colonies in Shetland (2004 to 2006); the National Trust counts pups born at the Farne Islands (Northumberland) and at Blakeney Point (North Norfolk) and Natural England (NE) counts pups born at Horsey/Winterton (East Norfolk). Knowledge of the distribution of the main breeding colonies is therefore good. Some satellite telemetry data has also indicated potential distribution at sea. Improvements to current knowledge of range would include more telemetry studies.

1.4 Range trend[2.3.4] & Range trend magnitude[2.3.5]

Stable

Sea Mammal Research Unit (SMRU) and others have been monitoring grey seal breeding colonies since the 1960s and no change in the range where breeding colonies are distributed has been observed during this time, although there are now considerably more breeding colonies within their range. Trends in this species' at-sea distribution are unknown. Marine mammals are wide-ranging, with large spatio-temporal variations in distribution and therefore it is very difficult to detect trends in range, or to know if apparent changes are long-term changes in range or in distribution within their range.

Map 1.1 (a & b). Grey seal breeding colonies in Britain (2000-2006): a) breeding colonies (From Duck & Mackey, 2006). The encircled colonies are those for which pup production is assessed annually; b) distribution by 10 km squares (Callan Duck, unpublished data).



1.5 Range trend period [2.3.6]

1960s – 2005

This is the period during which regular recording has been undertaken and incorporates the period when the Habitats Directive came into force.

1.6 Reasons for reported trend in range[2.3.7]

Not applicable

1.7 Favourable reference range[2.7.1]

Unknown

Although a quantitative area estimate cannot be provided, based on best expert judgement, current range has all significant ecological variations of the species included for a given biogeographical region, and is sufficiently large to be considered suitable for the survival of the species for the foreseeable future.

1.8 Range conclusion[2.8]

Favourable

There has been no evidence of decline in range of haul-out sites since recording began, and the current range (although not quantified in km^2) is considered equivalent the favourable reference range based on best available information and expert judgement. (Data refer to haul-out sites only; there is not enough data to inform seal at-sea range.) Therefore, the conclusion for this parameter is Favourable.

2. Population of the species[2.4]

2.1 Population estimate[2.4.1]

97,000 - 159,000 individuals

In 2005, an estimated 44,000 grey seal pups were born in Britain which is believed to equate to a population of between 97,000 and 159,000 *H. grypus* (SCOS, 2006). About 39% of the world population of *H. grypus* is found in Britain and 90% of these breed in Scotland, predominantly in Hebrides and Orkney.

The vast majority (85%) of European *H. grypus* breeding outside the Baltic, breed around Britain. Within Britain there is a clear genetic distinction between those seals that breed in the southwest (Devon, Cornwall and Wales) and those breeding around Scotland and in the North Sea (SMRU, unpublished data).

2.2 Date of population estimate[2.4.2]

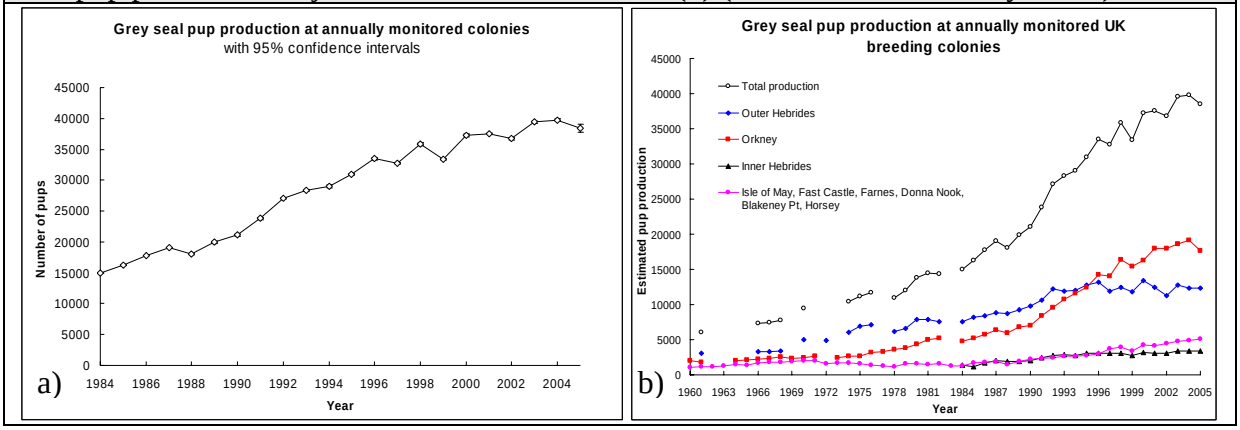
2005

2.3 Method of population estimate[2.4.3]

2 = extrapolation from surveys of part of the population, sampling

Population size estimates are derived from the number of pups born annually. Each year the SMRU conducts aerial surveys of the major breeding colonies in Scotland to determine pup production whilst other sites are surveyed less frequently. Pup production has been monitored almost annually at colonies in Orkney and the Outer Hebrides since 1960 and in the Inner Hebrides since 1984. Ground counts of pups are carried out annually by the National Trust at the Farne Islands (since the 1960s) and Blakeney Point, and by the Lincolnshire Wildlife Trust at Donna Nook. CCW also undertakes pup monitoring in Wales (e.g. annually at Skomer MNR). The major sites surveyed annually (Inner and Outer Hebrides, Orkney and the North Sea) account for approximately 85% of pups born throughout Britain. The population size is then estimated by applying a population model to the estimates of pup production.

Map 1.2 (a & b) Total estimated pup production, with 95% confidence limits, for all the major, annually monitored colonies in Scotland and England from 1984 to 2004 (a) and grey seal pup production trajectories from 1960 to 2004 (b) (From Duck & Mackey, 2005).



2.4 Quality of population data[2.4.4]

Good

The annual estimates of pup production are considered to be fairly accurate (Map 1.2a shows the 95% confidence intervals). There is, however, considerably greater uncertainty in the estimation of total population size. Pup production is no longer increasing exponentially, implying that the grey seal population is responding to some form of density dependent factors. If these factors are affecting survival and recruitment into the breeding population, then the estimate of total population size will be smaller. If they are affecting the fecundity of females, the estimate will be larger (Thomas & Harwood, 2006).

2.5 Population trend[2.4.5] & Population trend magnitude[2.4.6]

Increasing

In 1984, total pup production at annually monitored colonies was estimated to be 15,000. By 2001, this had risen to 37,500 and by 2005 to 38,500 (Duck & Mackey, 2006). Including colonies surveyed less frequently, pup production in the UK in 2005 was estimated at 43,900. However, the number of pups born at colonies in the Hebrides has remained relatively constant since 1992, whilst the numbers born in Orkney and the North Sea colonies continues to increase but at a slower rate than previously observed (Map 1.2b). Overall, pup production in *H. grypus* in the UK appears to be stabilising. Although some new colonies are being formed and populations in the central North Sea are still growing rapidly, these are not sufficient to maintain the high rates of increase observed through the late 1980s and early 1990s.

The recent levelling off in pup production could be a result of reductions in the reproductive rate or survival of pups or adults (Thomas and Harwood, 2006). There is a lack of independent data with which to quantify the relative contributions of these factors.

Even if these trends continue, the British grey seal population as a whole is likely to continue increasing for some years because there is a time lag in changes in pup production being translated into changes in population size (see Thomas & Harwood, 2003).

2.6 Population trend period[2.4.7]

1994 – 2005

Data suggests that population has been increasing since the 1980s.

2.7 Reasons for reported trend in population[2.4.8]

Unknown

The reasons for the variability in pup production are not known; assessment methods used by SMRU and the National Trust have remained the same since at least 1985. It is possible that, as the population grows, breeding females become more susceptible to subtle changes in environmental factors such as food availability and that this is reflected in the increased variation in pup production. Increases in pup production between 1960 and 1990 were, at least in part, due to the establishment of new breeding colonies

2.8 Justification of % thresholds for trends[2.4.9]

In 1984, total pup production at annually monitored colonies was estimated to be 15,000. By 2001, this had risen to 37,500 and by 2005 to 38,500 (Duck & Mackey, 2006).

2.9 Main pressures[2.4.10]

210 Professional fishing
244 other forms of taking fauna
313 Exploration and extraction of oil or gas
963 introduction of disease

In the UK, seals have long been regarded by fishermen as a threat to their livelihood. The Conservation of Seals Act 1970 was introduced to manage this conflict, providing protection for seals through a close season during moulting and pupping (1st September to 31st December for *H. grypus*). Within the close season a licence is required to shoot seals. Outside of this, the shooting of seals without licence is permitted. A licence for handling seals is required at all times under the Conservation of Seals Act. However, under this act, defences exist in relation to the taking of an injured seal in order to treat and release it and also the 'mercy-killing' defence would apply. With an appropriate licence, it is also lawful to take or kill any seal for scientific purposes or for the protection of flora and/or fauna.

However, as a response to the second outbreak of Phocine Distemper Virus (PDV), a Conservation Order was introduced in Scotland in 2002 creating a year-round close season for harbour seals. In the Moray Firth, this Order was extended to cover *H. grypus* to reduce the shooting of misidentified harbour seals. The Order ran out in 2004 and was replaced by a Conservation of Seals (Scotland) Order 2004 which continues the annual close season in the inner Moray Firth, with shooting only occurring under special licence. The east coast of England is also subject to a Conservation Order (1999) covering both species following the 1988 and 2002 PDV outbreaks. Elsewhere the situation has reverted to the Conservation of Seals Act.

The use made of the seas around the UK by marine mammals has been described (see SEA reports) and assessed against possible future hydrocarbon development opportunities.

As a consequence of the perceived threat of seals to fish stocks, considerable resources have been invested in diet analyses and assessments of the amount of fish consumed by seals, and also in assessing the distribution in seals away from the breeding grounds. Advice is provided annually to Defra and SEERAD on latest estimates of seal numbers, estimates of fish consumption, and possible management policy including the development of non-lethal population control methods. This Advice is generated primarily by the SMRU, vetted by the Natural Environment Research Council's (NERC) Special Committee on Seals (SCOS) and delivered by NERC

(http://www.smru.st-and.ac.uk/CurrentResearch.htm/scos.htm).

Other pressures include bycatch and coastal development. Monitoring has recently been introduced to assess bycatch levels which, based on experiences elsewhere, maybe substantial. In addition, the highest levels of pup mortality are seen in colonies where the seals themselves damage the habitat.

2.10 Threats[2.4.11]

210 Professional fishing
244 other forms of taking fauna
963 introduction of disease

2.11 Favourable reference population[2.7.2]

97,000 - 159,000 individuals (Equal to current)

Total pup production has increased since the 1980s. In the absence of intensive conservation care, this indicates that populations are viable. On this basis, the current estimate has been set as the baseline favourable reference value.

2.12 Population conclusion[2.8]

Favourable

Post-1994 trends are increasing, and the current range is equivalent to the favourable reference population. The conclusion is therefore Favourable.

3. Habitat for the species in the Biogeographic region or sea[2.5]

In Europe, *H. grypus* comes ashore on outlying islands and remote coastlines to pup in the autumn and to moult in the late winter and spring (SCOS, 2006). At other times of the year they may haul out and rest between foraging trips often choosing sites offering good access to the open sea. Satellite tracking of individual seals has shown that they can feed up to several hundred miles offshore during foraging trips lasting several days. The seals tend to be based at specific haul-out sites but will occasionally move to a new haul-out and begin foraging in a new region. *H. grypus* feeds benthically. Major changes have been observed in diet in relation to changes in fish stock abundance.

3.1 Surface area of habitat[2.5.2]

Unknown

Seven breeding sites or areas have been designated as Special Areas of Conservation (SACs) specifically for *H. grypus*. These were selected on the basis of pup production and geographic range. They are: Berwickshire and the north Northumberland coast (including the Farne Islands), the Isle of May (Firth of Forth), Faray and Holm of Faray (Orkney), the Monach Isles and North Rona (Scottish Western Isles), Treshnish Isles (Argyll and Bute) and Pembrokeshire Marine (south-west Wales).

However, *H. grypus* is not found exclusively within these SACs, and it cannot be said for certain that all habitat within the sites is used by this species. In addition, there is insufficient information to estimate the area of foraging habitat.

3.2 Date of estimation[2.5.3]

Not applicable

3.3 Quality of data on habitat area[2.5.4]

Poor

Quality of data is 'good' for SACs but 'poor' for areas outside SACs. Habitat within SACs has been relatively well surveyed and monitored. Habitat can be assessed for those SACs monitored using aerial photography (all except Farne Islands and Pembroke Marine) but this has not been examined in any detail yet. Outside SAC boundaries, habitat is not so well documented. In addition, since it is difficult to estimate an overall area of suitable habitat, the judgement on this must be moderate.

3.4 Habitat trend[2.5.5]

Unknown

3.5 Habitat trend period[2.5.6]

1994 – 2006

3.6 Reasons for reported trend in habitat[2.5.7]

Not applicable

3.7 Suitable habitat for the species (in km^2)[2.73]

Unknown

There are numerous small islands and remote coastlines which are, as yet, unused by *H. grypus* for breeding, moulting or as general resting sites. There appears to be more habitat available than is currently being used.

3.8 Habitat conclusion[2.8]

Favourable

In the UK, 40% of pups are born within the boundaries of SACs. In 2005 in Scotland, five of the six grey seal features were assessed as 'favourable (maintained)' and one, North Rona, was assessed as 'unfavourable (declined)'. Pup production within this SAC has declined and the reasons for this are not clear. However, the production trajectory for North Rona is virtually identical to that of all the remaining 'old' Outer Hebridean colonies. The Pembrokeshire Marine (south-west Wales) SAC will be assessed in 2007. There is no evidence to show that the conservation status of this species habitat in other sites is any different from favourable. However, it is difficult to assess the conservation status of their habitat at sea. Currently work is being undertaken to assess the feasibility of introducing offshore SACs for this species. When this possibility was last considered, there was insufficient information on offshore distribution.

4. Future Prospects[2.6]

Good prospects

"Species is expected to survive and prosper".

Since 1994, conservation measures have been undertaken in the UK and adjacent waters, to protect, survey and monitor marine mammal abundance, health and distribution (see below); stable population trends indicate the effectiveness of such measures. Further, potential threats identified in Section 2.10 are not expected to affect long term viability. On this basis, prospects over the next 12 years have been identified as good.

Legislation and Conservation Action

Under the Conservation of Seals Act 1970, the Natural Environment Research Council (NERC) has a duty to provide scientific advice to government on matters related to the management of seal populations. NERC has appointed a Special Committee on Seals (SCOS) which has been advising on seal conservation and management issues. Surveying and monitoring is carried out on haul-out sites and breeding colonies for harbour and grey seals respectively and the information obtained fed into SCOS. Area-specific seal Conservation Orders are used as management tools to address conservation status concerns. In Scotland, a possible review of the Conservation of Seals Act 1970 might take place in 2007 to increase protection of seals.

In Scotland, the Scottish Seals Forum brings together a wide range of key stakeholders to exchange information and develop a co-ordinated approach to the management of Scottish seal populations. A pilot management plan aimed to balance the conservation of Moray Firth's seal population with the interests of salmon fisheries has been successfully implemented in the Moray Firth. A reduction in the number of seals killed was the main result, with increased awareness and training of stakeholders taking place. Hopefully, this pilot plan can be extended to other stakeholders (fish farms and fisheries) and areas.

Scottish Natural Heritage recently produced the "Scottish Marine Wildlife Watching Code", designed to protect and promote enjoyment and to raise awareness about how best to watch marine wildlife with minimal disturbance.

4.1 Future prospects conclusion[2.8]

Favourable

5. Overall Assessment[2.8]

Favourable

All four parameters have been assessed as Favourable. Therefore, in accordance with Annex C, the overall conclusion is Favourable.

Table 5.1 Summary of conclusions

Parameter	Judgement	Grounds for Judgement (in accordance with Annex C)	Reliability*
Range	Favourable	Range is stable and not smaller than the favourable reference range	2
Population	Favourable	Population is stable and not less than the favourable reference population	3
Habitat	Favourable	Area of habitat is sufficiently large and habitat quality is suitable for the long-term survival of the species	2
Future Prospects	Favourable	Main pressures and threats to the species are not significant; species expected to remain viable over the next 12 years	2
Overall Assessment	Favourable	All Favourable	2

*1=High, 2=Moderate, 3=Low

High – Expert opinion is that the concluding judgement accurately reflects the current situation based on a professional understanding of the species. For range, population, and habitat, quality of data used to establish the current estimate has been identified as "good"; data used to inform trends is comprehensive and up to date.

Moderate – A greater understanding of the feature, or the factors affecting it, is required before a confident concluding judgement can be made by experts. For range, population, and habitat, the current estimate and/or trend are based on recent, but incomplete or limited survey data; or alternately, a comprehensive, but outdated (pre-1994) review.

Low – Judgements, and comprising estimates, are based predominately on expert opinion.

N/A – Assessment conclusion is "unknown", on the basis of insufficient reliable information.

6. Other relevant information

Range is a difficult parameter to define for marine mammals since they are highly mobile and their distribution can vary considerably in time and space across Member States. While understanding the distribution of marine mammal species might be helpful in assessing their conservation status and while range can be subjected to qualitative assessment, the data do not enable a quantitative estimate of surface area at present.

7. References

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