

**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 :
S1365: *Phoca vitulina* - Common seal**

Please note that this is a section of the report. For the complete report visit <http://www.jncc.gov.uk/article17>

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S1365 *Phoca vitulina* Common seal

Audit trail compiled and edited by JNCC, Sea Mammal Research Unit (SMRU) 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}

Phoca vitulina is found around the coasts of the north Atlantic and north Pacific from the subtropics to the arctic. Those in Europe belong to the sub-species *Phoca vitulina vitulina* which occurs as far west as Icelandic waters (Special Committee on Seals (SCOS), 2006).

In Britain, *P. vitulina* is widespread around the west coast of Scotland and throughout the Hebrides and Northern Isles. On the east coast, their distribution is more restricted with concentrations in The Wash, the Firth of Tay and the Moray Firth. In Northern Ireland, they are found mainly along the south and south-east coasts and in Strangford Lough (SCOS, 2005; Map 1.1a). Further information of the movements and distribution of *P. vitulina* is given in the habitat section.

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 full extent over which *P. vitulina* might occur in UK waters, and hence calculate the surface area of range. In addition, existing *P. vitulina* telemetry records are from 8 locations around the UK, representing a small proportion of the population.

1.2 Date of range determination^{2.3.2}

Not applicable

1.3 Quality of range data^{2.3.3}

Good

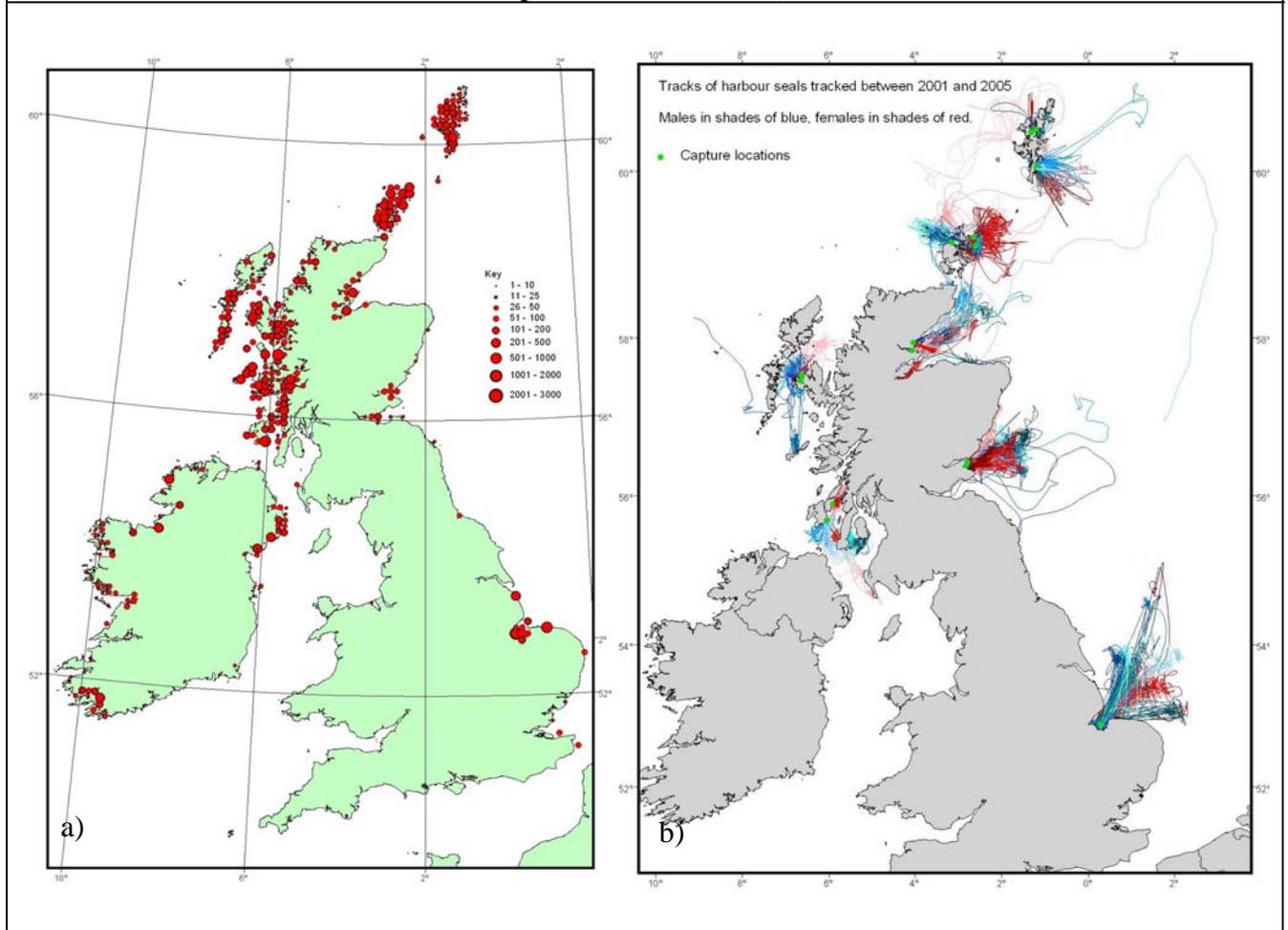
Knowledge on distribution is largely developed from surveys of their haul out sites, although increasing amounts of satellite telemetry data in recent years has indicated potential foraging areas (Map 1.1b). Monitoring surveys of haul-out sites are carried out annually in Lincolnshire and Norfolk and on an approximate 5-yearly cycle around Scotland (although more frequently in the Moray Firth and Firth of Tay). Improvements to current knowledge of their at-sea range would include more telemetry studies.

1.4 Range trend^{2.3.4} and range trend magnitude^{2.3.5}

Stable

No change in overall distribution of haul-out sites has been noted since regular recording began in the late 1980s and early 1990s. 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): (a) The August distribution (10 km²) of *P. vitulina* in Great Britain and Ireland between 2000 and 2006 (Callan Duck, unpublished data) and (b) tracks of individual *P. vitulina* captured on the Isle of Skye, Jura, Islay, Orkney, Shetland, the Moray Firth, St Andrews Bay and in The Wash between 2001 and 2005 (Sharples, R.J. *et al.*, 2005).



1.5 Range trend period^{2.3.6}

1985 – 2006

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 a decline in the range of haul-out sites since recording began, and, although an area estimate is unknown, the current range is thought to be a suitable baseline for considering favourable status and is equal to the favourable reference range. Data refer to haul-out sites only; there is not sufficient data to inform the UK-wide seal at-sea range.

2. Population of the species^{2.4}

2.1 Population estimate^{2.4.1}

28,300 individuals (minimum)

From the SCOS 2006 and most recently available surveys in 2006 (see Table 2.1).

Table 2.1. Minimum size of the UK population of *P. vitulina* from the most recently available surveys in 2006. Numbers are rounded to the nearest 100.

Region	Year	Number of seals counted
Outer Hebrides	2003	2,100
Scottish W coast	2000 & 2005	12,300
Scottish E coast	2005	1,800
Shetland	2006	3,100
Orkney	2006	4,300
Scotland		23,600
England	2001-2006	3,500
Northern Ireland	2002	1,200
UK	2000-2006	28,300

Britain holds approximately 40% of the world population of the European sub-species (SCOS, 2005, 2006).

Genetic analysis suggests that there are genetically distinct *P. vitulina* populations in European waters (Goodman 1998), indicating little or no movement of breeding animals between these populations. There is probably occasional movement of animals between populations in Ireland and Scotland but so far there is no evidence from satellite telemetry of any long-range movements (for example, between the east and west coasts of Scotland).

2.2 Date of population estimate^{2.4.2}

2000 – 2006

SCOS, 2006 and 2006 surveys

2.3 Method of population estimate^{2.4.3}

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

The Sea Mammal Research Unit (SMRU) monitors the UK *P. vitulina* population as part of the Natural Environment Research Council's statutory obligation under the Conservation of Seals Act 1970.

The total population cannot be estimated directly because it is not possible to count all individuals in the population at any one time. Counts are undertaken where they haul out (usually during the annual moult in August, when the greatest and most consistent numbers of seals are ashore). To further maximise the number of seals counted, surveys are restricted to within two hours either side of low tides occurring between 13:00 and 19:00 hrs on days without any rainfall. Thus the surveys result in an estimate of the minimum number of *P. vitulina* in the area surveyed (Table 2.1). Studies from elsewhere (e.g. Thompson *et al.* 1997, Reis *et al.*, 1998) suggest that the number of seals counted during the August moult represent between approximately 55% and 70% of the overall total population. Monitoring surveys are carried out annually in Lincolnshire and Norfolk on an approximate 5-yearly cycle around Scotland and almost annually in the Moray Firth and Firth of Tay.

2.4 Quality of population data^{2.4.4}

Good

The data are the best possible to date. The surveys are carried out by experienced teams using consistent methodologies (Lonergan *et al.* 2007). There is, however, a high level of uncertainty attached to estimates due mainly to the proportion of seals not counted during the survey because they are in the water and the lack of repeat counts from which confidence intervals can be derived (SCOS 2006; Lonergan *et al.* 2007).

2.5 Population trend^{2.4.5} and population trend magnitude^{2.4.6}

Decreasing

Table 2.2 provides the best available representative of UK population size in 1994; this has been calculated at 29,300 individuals (minimum). Since the current estimate is 28,300 individuals, counts suggest a decline of approximately 3 - 4% in the UK since the Habitats Directive came into force.

Table 2.2. Minimum size of the UK population of *P. vitulina* (SCOS previous to 2002) from the surveys up to and including 1994. Numbers are rounded to the nearest 100.

Region Population size ¹	Year of survey	Number of seals counted
Outer Hebrides	1992	2,300
Scottish W coast	1988-1993	8,200
Scottish E coast	1992-1994	2,000
Shetland	1993	6,200
Orkney	1993	7,900
Scotland		26,600
England (E & S coast)	1994	2,300
Northern Ireland	1977	400
UK		29,300

Trends within regions of the UK vary (see Tables 2.3 and 2.4). The west coast population in Scotland has remained relatively stable whilst those bordering the North Sea have declined. The population along the east coast of England (mainly in The Wash) declined by 52% following the 1988 phocine distemper virus (PDV) epidemic. A second epidemic in 2002 resulted in a decline of 22% in The Wash (Thompson *et al.* 2005), but had little impact

elsewhere in Britain. After a three year delay, numbers in The Wash recovered after the 1988 outbreak, but recent surveys show that the number of harbour seals in eastern England has not increased since the end of the 2002 phocine distemper epidemic (Lonergan *et al.* 2007).

There is evidence of a general decline in most of the large harbour seal colonies along the east coast of Britain. Surveys carried out in 2006 found an apparent decline in abundance in Orkney and Shetland of 42% (95% confidence intervals 10% - 62%) compared with 2001 (Lonergan *et al.* 2007). A partial survey of the Outer Hebrides did not show a similar decline, nor was there any evidence of a decline in seal numbers in north-west Scotland, informed by surveys carried out in 2005. Surveys of the east coast populations in 2006 also showed continuing apparent declines in both the Tay and The Wash populations and no apparent recovery in the Moray Firth. This is in contrast to the apparent rapid growth in populations in the nearest European population in the Wadden Sea (SCOS 2006). A Seal Conservation Order has been put in place since March 2007 by the Scottish Executive, for *P. vitulina* in the Northern Isles and the east coast of Scotland.

Table 2.3. Pre-1994 status of the UK population of *P. vitulina* (SCOS 2002)

Region	Time period	Possible trend
Outer Hebrides	1970 - 1992	Increase
Scottish W coast	1970 - 1993	Increase
Scottish E coast	1970 - 1994	Stable
Shetland	1970 - 1993	Increase
Orkney	1970 - 1993	Increase
Scotland	1970 - 1994	Increase
England (E and S coast)	1988 - 1994	>50% decline (due to pdv outbreak) followed by gradual recovery
Northern Ireland	1970 - 1994	Unknown
UK		

Table 2.4. Post-2001 status of the UK population of *P. vitulina* (SCOS 2006 and data from the most recently available surveys).

Region	Time period	Possible trend
Outer Hebrides	2001 – 2003	Slight decline since 2001
Scottish W coast	2000 – 2005	Increase or stable since 2000
Scottish E coast	2001 – 2005	Decline since 2001
Shetland	2001 – 2006	> 40% decline since 2001
Orkney	2001 – 2006	> 40% decline since 2001
Scotland	2001 – 2006	Slight decline since 2001
England	2001 – 2006	Decline since 2001
Northern Ireland		Unknown
UK	2000-2006	Declining

2.6 Population trend period^{2.4.7}

1988 – 2006

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

2.7 Reasons for reported trend in population^{2.4.8}

3. Direct human influence (restoration, deterioration, destruction);

5. Natural processes

The reported trend is attributed to outbreaks of the phocine distemper virus (PDV) in 1998 and 2002.

An exception is the Moray Firth where documented shooting accounted for a significant proportion of the decline (Thompson *et al.* 2007), until a Conservation Order was put in place to prevent *ad libitum* shooting following the second outbreak of PDV in 2002; this Order was replaced by a second one in 2004 which applies to the inner Moray Firth only. Following these Orders, the population seems to be showing initial signs of recovery.

With regards to the apparent decline in the east Scotland population, it is unlikely that any single factor is responsible for the reduction in numbers. There is no evidence it is a direct result of the phocine distemper virus outbreak amongst seals in 2002, since no large numbers of carcasses were reported at that time. It is unlikely to be a direct result of shooting alone for similar reasons. It is also unclear whether this reduction is a short term or longer term phenomenon. The availability of food resources and competition with grey seals cannot be excluded as potential causes.

2.8 Justification of % thresholds for trends^{2.4.9}

Not applicable

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

971 Competition

990 Other natural processes

Seals have long been regarded by fishermen and fish farmers as a threat to their livelihood. In the Moray Firth, between 1994 and 2002, approximately 100 *P. vitulina* were reported shot annually (Thompson *et al.* 2007). In response to another outbreak of PDV, a Conservation Order was introduced in 2002 creating a year-round close season (a licence is required to shoot seals) until September 2004. In 2004, this was replaced by a Conservation of Seals (Scotland) Order 2004 which continued the annual close season in the inner Moray Firth, with legal 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.

A Seal Conservation Order has been put in place in March 2007 for *P. vitulina* in the Northern Isles and part of the east coast of Scotland to address the apparent decline in numbers. Causes for this decline are unknown but the availability of food resources and competition with grey seals cannot be excluded as potential causes. Under the Order the shooting of *P. vitulina* will only be possible with a licence from the Scottish Executive or under the terms of the 'netmen's defence' - to protect fishing nets or catches. The Executive, Scottish Natural Heritage and SMRU will monitor the effectiveness of the new Order and consider research into the possible causes of the decline in common seal numbers.

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.

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 (e.g. SCOS 2005). Other pressures include bycatch and coastal development. Monitoring has recently been introduced to assess bycatch levels which, based on experiences elsewhere, may be substantial.

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}

29,300 individuals (at least equal to the 1994 estimate)

The decision tree in Note 1 has been used as a guide in determining the favourable reference population estimate (see 'Assessing Conservation Status: UK Approach').

In 1994, populations were persisting at relatively high abundance; the best available estimate is 29,300 individuals. Further, pre-1994 trends suggest that, prior to the most recent pvd outbreaks, populations in most regions were maintaining and perpetuating themselves (refer to Table 2.3). The 1994 estimate is therefore a suitable minimum baseline for the favourable reference population.

2.12 Population conclusion^{2.8}

Unfavourable - Inadequate

The current population estimate is below than the favourable reference population, but by less than 4%. Therefore, in accordance with Annex C, the population conclusion is Unfavourable – Inadequate.

3. Habitat for the Species in the Biogeographic Region or Sea^{2.5}

P. vitulina requires suitable haul-out sites where they can rest, moult and give birth to and raise their pups. They routinely haul out at low tide on intertidal sandbanks, skerries or beaches (Duck 2003). The number of seals at haul-out sites varies through the year. In the winter months, *P. vitulina* appears to spend more time at sea, presumably feeding (Thompson 1989). During the breeding season (from late May to early July), *P. vitulina* appear to be more dispersed and in smaller groups than during their moult. From late July to early September, during their annual moult, groups tend to be larger than at other times of the year and numbers at many haul-out sites appear to be at a maximum (Thompson 1989, Thompson *et al.* 2005).

P. vitulina regularly use the same haul-out sites (Corpe 1996; Mackey 2004). Their day-to-day choice of site is most notably affected by precipitation, wind strength and direction; *P. vitulina* prefers to use sheltered sites (Grellier *et al.* 1996). Studies have shown that seasonal changes in site use may be linked to a site's physical characteristics. Some may be suitable for breeding females during pupping, others may be more suitable for groups undergoing the annual moult, others because of seasonal proximity to food resources (Grellier *et al.* 1996, Leopold *et al.* 1997, Härkönen *et al.* 1999, Härkönen and Harding 2001).

Until recently, direct information on foraging movements and the distribution at sea of *P. vitulina* was limited to small-scale land-based VHF radio telemetry studies summarised by Thompson *et al.* 1989, Thompson and Miller 1990, Thompson *et al.* 1991, Thompson *et al.* 1996 and a few direct observations. More recently, satellite telemetry has indicated that *P. vitulina* can forage much further offshore than previously thought (Sharples *et al.* 2005). In Scotland, the seals tend to be site-faithful with relatively short foraging trips (2 – 5 km from Islay and Jura haul-out sites; 15 – 30 km from Isle of Skye haul-out sites; 15 km from Shetland haul out sites; and 30 – 40 km from Orkney sites). However occasional long trips were made by some individuals, e.g. one female tagged in Orkney repeatedly travelled between Orkney and Shetland a distance of over 220 km. Although site-faithful in The Wash, the seals tended to make relatively long journeys to foraging grounds repeatedly travelling 75 – 120 km and as far as 220 km.

3.1 Surface area of habitat^{2.5.2}

Unknown

There are nine SACs in UK waters designated specifically for *P. vitulina* chosen for their importance as general haul-out sites and for moulting and/or pupping. These are: Mousa and part of the Yell Sound coast (Shetland), east Sanday (Orkney), the Ascrib Islands with Isay and Loch Dunvegan (Skye), Lismore, the south-east Islay Skerries (west coast of Scotland), the Dornoch Firth and Morrich More, the Firth of Tay including the Eden Estuary (Scottish east coast), and The Wash and north Norfolk coast (England). Two additional SACs also list *P. vitulina* as a qualifying feature but not the primary reason for selection. These are Murlough and Strangford Lough, both in Northern Ireland.

P. vitulina is not found exclusively within these SACs and it can not 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}

Moderate

Quality of data is 'good' for SACs but 'poor' for the area of foraging habitat.

3.4 Habitat trend^{2.5.5}

Unknown

The availability or accessibility of land habitat has not changed since 1994. However, trends of at-sea distribution are 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 km²)^{2.73}

Unknown

3.8 Habitat conclusion^{2.8}

Unknown

In 2005, six common seal SACs in Scotland were assessed as ‘favourable (maintained)’ and two, Mousa (Shetland) and the Dornoch Firth and Morrich More (Moray Firth), as ‘unfavourable (declined)’. Visitor disturbance and shooting, respectively, are believed to have led to the declining abundance of *P. vitulina* within these two SACs. Appropriate management measures are now in place at both sites. These two issues were also noted as potential problems at other SACs and may require further consideration to determine whether any new site management measures are required to ensure their assessment as ‘favourable (maintained)’ in the future. The status of The Wash SAC for *P. vitulina* in England is being assessed in 2007.

Approximately 89% of Britain’s *P. vitulina* population breeds or hauls out on Scotland’s coasts and, of these, the majority of sites occur outside the two SACs with unfavourable (declined) status and the habitat conservation status for the land area used by this species could be considered to be favourable. However, it is impossible at present to assess the conservation status of their habitat at sea, and one possible cause of the apparent decline in the east coast of Scotland could be a change in food availability.

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. The conclusion is, therefore, Unknown

4. Future Prospects^{2.6}

Unknown

There is insufficient information to make a judgement on future prospects at this time.

Since 1994, conservation measures have been undertaken in the UK and adjacent waters, to protect, survey and monitor marine mammal abundance, health and distribution. These are discussed below. However, current population trends are possibly being influenced by several factors: PDV outbreak; shooting; the availability of food resources; and competition with grey seals. The observed rates of sustained decline in some areas indicate a serious threat to these populations (Lonergan *et al.* 2007). If populations continue to decline, the species may be expected to struggle over the next 12 to 15 years; if populations stabilise or increase, the outcome may be different. Since there is no means of predicting the likelihood of these alternate outcomes at present, future prospects have been reported as unknown for this reporting round.

Threats, Legislation and Conservation Action

It is important to stress that many human activities that have the potential to affect the assessed species are already regulated with the conservation of marine mammals and other wildlife in mind. Assuming that these measures are maintained and further measures will be taken should other pressures emerge, then the future prospects for these species in UK waters should be favourable. However the effects of less well understood impacts are hard to predict.

P. vitulina populations have in the past recovered from disease outbreaks. However we cannot assume that populations will always recover as they did post 1988 in The Wash.

Since 1994, several conservation measures have been undertaken in the UK and adjacent waters in order to protect, survey and monitor marine mammal abundance, health and distribution. The Habitats Directive is being implemented mainly through the identification and protection of appropriate sites and through monitoring bycatch.

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}

Unknown

Insufficient information to make a judgement at this time.

5. Overall Assessment^{2,8}

Unfavourable – Inadequate

There has been an apparent large decline in harbour seal numbers in the populations adjacent to the North Sea. The causes of this are unknown. Food availability, PDV and shooting all affect this species. Overall, the range conclusion is Favourable, population is Unfavourable – Inadequate, and habitat and future prospects are both Unknown.

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	Unfavourable – Inadequate	Current population is below the favourable reference population, but by less than 4%	2
Habitat	Unknown	Insufficient reliable information available	N/A
Future Prospects	Unknown	Insufficient reliable information available	N/A
Overall Assessment	Unfavourable – Inadequate	One or more Unfavourable – Inadequate; not Unfavourable – Bad	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 ^{2.7.4}

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.

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