Scottish Wildlife Trust

Policy

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Conservation and Management of Seals

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Scope of this Policy

1. This policy covers the Scottish Wildlife Trust (The Trust) views on the conservation and management of seals in Scotland. The policy refers to both grey seals (*Halichoerus grypus*) and harbour seals[i] (*Phoca vitulina*).

> **Policy Headlines**
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> The Trust believes that Scotland has a unique role in the conservation of seals. It therefore has serious concerns over the severe decline in the population of harbour seals in the Firth of Tay and Eden Estuary and Orkney. Urgent priority should be given to identifying, and where possible addressing, the causes of these declines.
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> The Trust believes that the shooting of seals must be a last resort, and that the seal licencing system must work in tandem with, and provide impetus to, the development and use of non-lethal solutions to eliminate the need for lethal control of seals.
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> The Trust believes that it is imperative that research is continued into the impacts on seal populations from "corkscrew" injuries and offshore renewable energy developments, in order to and improve environmental assessment and develop adequate mitigation.

Context

2. Seals are an important and familiar component of Scotland's coastal wildlife and the internationally significant populations of grey and harbour seals present in Scottish waters mean that Scotland has a unique responsibility for their conservation.

3. A comprehensive and up to date account of the status of seals and their ecology is provided annually in the formal advice to UK governments from the Special Committee on Seals (SCOS). This is based on the latest scientific information provided by the Sea Mammal Research Unit (SMRU).[ii] The advice fulfils a duty on the Natural Environment Research Council (NERC) to provide scientific advice to government on matters related to the management of seal populations under the Conservation of Seals Act 1970 and the Marine (Scotland) Act 2010.

4. Approximately 33% of the world's grey seal population breed at colonies in Scotland with the main concentrations in the Outer Hebrides and in Orkney. While the number of grey seal pups had seen steady growth since systematic surveys began in the early 1960's, numbers born in the Hebrides have remained almost constant since 1992 and growth has been levelling off in Orkney since the late 1990s.

5. Around 24% of European harbour seals are found in Scotland. Although widespread around the west coast and throughout the Hebrides and Northern Isles, their distribution on the east coast is largely restricted to the Firth of Tay, the Firth of Forth and the Moray Firth.

6. Although the outbreak of phocine distemper virus that seriously affected the harbour seal population in Eastern England during 2002 had little effect on Scottish seals, many harbour seal populations around Scotland have declined dramatically since around 2000. Declines were first observed in Shetland (which has declined by 30% since 2000), Orkney (down 75%) and the Firth of Tay (down 85%). Analysis of the likely future trends of these populations suggest that the Firth of Tay population could go extinct by 2040, and probably much sooner unless the causes of decline are removed. However, populations on the west coast of Highland region and the Outer Hebrides have been largely stable, and the Moray Firth population now appears to be stable, following a sharp decline.

7. The causes of the decline in these harbour seal populations remain unclear. The four most likely hypotheses to have emerged are: (a) increased competition with grey seals and other top predators (b) natural variation (c) biotoxin exposure and (d) increased accidental mortality (see below).[iii]

Legal Protection

8. Under the Marine (Scotland) Act 2010 it is an offence to kill, injure or take seals at any time except in accordance with the terms of a seal licence. Licences can be granted allowing the shooting of seals for the protection of fisheries, aquaculture, or for scientific or welfare reasons.

9. Shetland, Orkney, the Moray Firth, the East Coast of Scotland and the Outer Hebrides have been scheduled as "seal conservation areas" under the Marine (Scotland) Act, in order to protect their vulnerable and declining populations of harbour seals. Marine Scotland may only grant a licence authorising the killing or taking of harbour seals in a seal conservation area if they are satisfied that there is no satisfactory alternative, and that the killing or taking authorised by the licence will not be detrimental to the maintenance of the population at a Favourable Conservation Status (FCS) in its natural range.

10. In addition, it is an offence to intentionally or recklessly harass seals at any of the 194 seal haul-out sites[iv] that have been designated around the Scottish coast. There are 62 sites that are used mainly by harbour seals, 20 used mainly by grey seals, 67 shared by both species and an additional 45 grey seal pupping sites, used specifically during the pupping season.[v]

11. Both grey and harbour seals are listed in Annex II of the Habitats Directive, which places a legal obligation on EU governments to introduce measures to ensure populations are maintained at, or restored to, FCS. Specifically, the government must designate and manage Special Areas of Conservation (SACs) to achieve FCS of seal populations. Article 6(2) of the Directive obliges governments to prevent disturbance of seal populations. There are currently six grey seal and eight harbour seal SACs in Scotland (see Appendix 1).

Policy Statement

12. The Trust believes that Scotland has a unique role in the conservation of seals. It therefore has serious concerns over the severe decline in the population of harbour seals in the Firth of Tay and Eden Estuary and Orkney. Urgent priority should be given to identifying, and where possible addressing, the causes of these declines.

Seal licencing

13. Seals are attracted to fish farms and coastal salmon netting stations, where they may remove or damage fish, or cause damage to nets leading to fish escapes. For example, three out of the nine reported escape incidents at Scottish fish farms in 2013 were attributed to predators causing a hole in the net.[vi] Where non-lethal measures of control such as Acoustic Deterrent Devices (ADDs) or net modifications have proved unsuccessful, licences may be obtained to allow those seals causing the damage to be shot by qualified marksmen.

14. The licensing system involves the calculation of a Permitted/Potential Biological Removal (PBR), which is the number of individual seals that can be removed each year without affecting the FCS of the regional population. It is calculated annually by SMRU using the latest seal population data.[vii] The PBR reflects the vulnerability of the population in each of ten Seal Management Areas in Scotland, identified by Marine Scotland on the basis of advice from SMRU. For example, the 2014 PBR for harbour seals in the East Coast Management Area is 2, whereas the West Coast Management Area has a PBR set at 446.

15. Licences issued in 2014 permit the killing of 765 grey and 240 harbour seals. Licence returns in previous years suggest that significantly fewer seals are shot than permitted (e.g. 36 harbour seals were reported shot out of a permitted 265 in 2013). Additionally, there has been a downward trend in both the number of seals permitted to be shot and actual numbers reported over the first three years that the licensing system has operated.[viii]

16. There has been extensive development of ADDs to protect fish farms and salmon netting against predation by seals as an alternative to lethal control. Such devices work by causing approaching marine mammals to experience pain or discomfort and to move away. There is, however, concern about the potential effect of ADDs on cetaceans, especially harbour porpoises. In addition, ADDs may cause permanent hearing damage to a number of different marine mammal species.[ix]

17. The Trust believes that the shooting of seals must be a last resort, and that the seal licencing system must work in tandem with, and provide impetus to, the development and use of non-lethal solutions to eliminate the need for lethal control of seals.

18. The Trust believes that proposals for marine aquaculture developments must demonstrate that any measures used to deter or prevent predation by seals do not cause any significant harm to other marine mammals. The Trust stresses that the Scottish Technical Standard for fish farm equipment[x] needs to be expanded at the earliest opportunity so that it includes recommendations on anti-predator measures.

19. The Trust supports Criterion 2.5 of the Aquaculture Stewardship Council (ASC) Salmon Standard[xi] which concerns “Interaction with wildlife, including predators” and notes the commitment made by salmon farming companies to adhere to the standard by 2020 under the Global Salmon Initiative[xii]. The Trust further notes that the Standard seeks to phase out the use of ADDs on fish farms (see Appendix 2).

20. Coastal salmon netting and river fisheries are responsible for over half of seals killed under seal licences annually.[xiii] Non-lethal control measures used at coastal salmon nets to limit seal predation include ADDs and net modifications such as increasing the thickness of the net material.[xiv] However, none of the measures employed appear to have entirely eliminated the risk of seal predation. Further, the wide variation of types of net used and local conditions mean that further work is required to develop effective measures.

21. The Trust believes that further development of non-lethal mitigation methods to reduce seal predation at coastal salmon nets and river fisheries is needed.

Accidental mortalities

22. Seals exhibiting spiral laceration or "corkscrew" injuries were first reported in in 2009 and 2010, when they were observed on animals stranded on the Fife and Tayside coasts.[xv] Although a number of hypotheses for the cause of these injuries were initially presented, recent research has indicated that collision with ducted propellers[xvi] (specifically the type known as Kort nozzles) is the most likely hypothesis.[xvii] Ducted propellers of this type are common to a wide range of ships that operate in inshore waters including tugs, self-propelled barges and rigs, offshore support vessels and research boats.

23. It is likely that this type of mortality is an underreported phenomenon, because not all carcasses will wash ashore. Even if they do wash ashore, they may either remain undiscovered or become badly decomposed before they are found. Misdiagnosis as a result of decomposition may be a factor in under estimating the scale of the problem. Further research is also required to determine if the decapitation wounds commonly found in stranded adult grey seals (which are not represented in the records of spiral laceration) are also caused by collisions with ducted propellers.[xviii]

24. As a result of these uncertainties the role of these injuries in the decline in Scottish harbour seal populations remains unclear. However, seal deaths caused by ducted propellers may have been responsible for several local, and potentially some regional, population declines.

25. The Trust supports continued research to determine the circumstances under which lethal interactions between seals and ducted propellers can occur, with a view to establishing mitigation measures to reduce the number of cases and protect seal populations.

26. The Trust would like to see the statutory nature conservation bodies'[xix] advice on the potential risk of seal corkscrew injuries revised to take account of the latest research and include strong recommendations for vessel management and monitoring.

27. The Trust would like to see the rollout of a strategy to provide a systematic and coordinated approach to surveillance of seal strandings to accurately understand the level and distribution of accidental mortalities.

Marine renewable energy

28. Marine renewables are set to play a key role in reducing Scotland's carbon emissions. However, there remains significant uncertainty over the level of risk to marine biodiversity from these developments.

29. Techniques used in the construction of offshore wind farms have the potential to impact on marine mammal populations. Noise generated from pile driving during construction is capable of causing hearing damage, and may displace seals and other marine mammals from the local area for several days. Additional concerns include indirect effects through loss of habitat or the creation of new habitat (e.g. artificial reefs), and displacement or changes in movements caused by disturbance or barrier effects from wind turbine operation.[xx]

30. It may be possible to mitigate some of these impacts by employing visual or acoustic monitoring to detect animals and delaying operations until they move away, and by staggering the piling noise through a soft start process. The use of ADDs to move animals away from pile driving is also being investigated. Disturbance effects may be reduced by using "bubble curtains" that mask piling noise.[xxi]

31. The risks to seals during the construction and operation of tidal stream energy devices include physical injury or mortality from collision, and displacement due to increased noise or turbidity.[xxii]

32. The first commercial scale development of tidal stream energy devices in Scotland was consented in 2014 in the Pentland Firth. The MeyGen tidal turbine array will consist of six tidal turbines in an initial demonstration phase that must fulfil a requirement for detailed monitoring to understand wildlife interactions with the turbines at the site prior to approval of further phases.[xxiii]

33. The only field study to date on interactions between seals and marine turbines is the Environmental Monitoring Programme for the SeaGen tidal turbine in Strangford Lough, Northern Ireland. This study showed that harbour seals continued to use Strangford Lough throughout periods when the turbine was operating, allowing the conclusion that the device is not a barrier to movement within the water body. However, there did appear to be some localised avoidance.[xxiv]

34. Under the conditions of a marine licence for renewable energy development the developer is required to seek approval from Scottish Ministers for a number of plans and strategies prior to commencing with the project. These include a Construction Method Statement to ensure the appropriate construction management of the development, taking into account mitigation measures to protect the environment. Where piling is to be used a Piling Strategy is required to demonstrate how the exposure to and/or the effects of underwater noise have been mitigated in respect of marine species.

35. The Trust believes that research to improve the assessment of the impact on seal populations from marine renewable energy construction and operation is urgently required to ensure that a) adequate environmental assessment is conducted, and b) effective monitoring and mitigation can be established for consented marine energy projects.

36. The Trust believes that an Adaptive Management, approach, in which monitoring programmes are designed to provide insight into potential environmental effects as well as ensuring regulatory compliance, should be applied to marine renewable energy developments in Scotland. It therefore urges the creation of a Scottish Strategic Marine Environment Group responsible for developing and overseeing coordinated monitoring and mitigation programmes for marine renewable energy developments on a National scale.

37. The Trust believes that the phased approach to development of the MeyGen tidal turbine array in the Pentland Firth presents an important opportunity for monitoring to establish collision risk, the behaviour of seals around arrays of tidal and possible mitigation.

Marine and Coastal Wildlife Tourism

38. Marine and coastal wildlife tourism in Scotland is a valuable and expanding industry. Seal watching is an important component of many of the wildlife watching experiences that are on offer, and encourages a greater appreciation and understanding of the marine environment. Over 50% of the total wildlife tourism expenditure in Scotland comes from visitors who make their trip primarily to view wildlife at the coast or in the marine environment. They generate net economic impacts of nearly £40 million, and support 1268 FTE jobs.[xxv]

39. However, the potential impact of this sector on seal populations must be considered carefully, because increased vessel activity or shore based seal watching could cause unnecessary disturbance, especially at vulnerable times such as the pupping season.

40. The Trust recognizes that seals play an important role in wildlife tourism, providing a draw to visitors and allowing the development of a greater appreciation and understanding of the marine environment.

41. The Trust will support sound management of the sector in accordance with the laws protecting seals from disturbance and other guidance such as the Scottish Marine Wildlife Watching Code[xxvi].

Seals and Scottish Wildlife Trust Reserves

42. The Trust owns, or manages by agreement, a number of coastal wildlife reserves used by seals. Linga Holm in Orkney was, at the time of its acquisition, the third largest grey seal breeding colony on a single island in the world. Grey seals have also bred in small numbers at Hill of White Hammars in the Orkneys and Largiebaan on the Kintyre peninsula.

43. Linga Holm[xxvii], Carn Iar[xxviii] (part of Ben Mor Coigach Reserve) and Loch Fleet, are designated seal haul-out sites under the Marine (Scotland) Act 2010 (see above).

44. The Trust will continue to deliver its management objective of maintaining Linga Holm as an undisturbed breeding ground for grey seals.

45. The Trust will ensure all individuals concerned with the management of wildlife reserves designated as seal haul-outs are made aware of the requirements of that designation, and will incorporate those requirements into reserve management plans where appropriate.

Appendix 1 - Special Areas of Conservation (SAC) for seals in Scotland

Grey seal	**Harbour seal**
Faray & Holm of Faray (Orkney)	Ascrib Island, Isay & Dunvegan (NW Skye)
Isle of May (Firth of Forth)	Dornoch Firth & Morrich More (E Highland)
Monach Isles (Western Isles)	Eileanan agus Sgeiran Lios mor (Argyll)
North Rona (Western Isles)	Firth of Tay & Eden Estuary (Fife and Tayside)
Treshnish Isles (Argyll)	Mousa (Shetland)
Berwickshire & North Northumberland Coast (Borders)	East Sanday (Orkney)
	South East Islay Skerries (Islay)
	Yell Sound Coast (Shetland)
	Sound of Barra* (Western Isles)

* Sound of Barra cSAC includes Harbour seal as an Annex II species present as a qualifying feature, but not a primary reason for site selection.

Appendix 2 - Extract from Aquaculture Stewardship Council Salmon Standard Version 1.0 June 2012. Available online at:
http://www.asc-aqua.org/upload/ASC%20Salmon%20Standard_v1.0.pdf

Criterion 2.5 Interaction with wildlife, including predators

Indicator		Requirement
2.5.1	Number of days in the production cycle when acoustic deterrent devices (ADDs) or acoustic harassment devices (AHDs) were used	0, within three years of the date of publication[1] of the ASC Salmon Standard
2.5.2	Prior to the achievement of 2.5.1, if ADDs or AHDs are used, maximum percentage of days[2] in the production cycle that the devices are operational	≤ 40%
2.5.3	Number of mortalities[3] of endangered or red-listed[4] marine mammals or birds on the farm	0
2.5.4	Evidence that the following steps were taken prior to lethal action[5] against a predator: 1. All other avenues were pursued prior to using lethal action 2. Approval was given from a senior manager above the farm manager 3. Explicit permission was granted to take lethal action against the specific animal from the relevant regulatory authority	Yes[6]
2.5.5	Evidence that information about any lethal incidents on the farm has been made easily publicly available[7]	Yes
2.5.6	Maximum number of lethal incidents[8] on the farm over the prior two years	9 lethal incidents,[9] with no more than two of the incidents being marine mammals
2.5.7	In the event of a lethal incident, evidence that an assessment of the risk of lethal incident(s) has been undertaken and demonstration of concrete steps taken by the farm to reduce the risk of future incidences.	Yes

1. Publication: Refers to the date when the final standards and accompanying guidelines are completed and made publicly available.
2. Day: 24-hour cycle.
3. Mortalities: Includes animals intentionally killed through lethal action as well as accidental deaths through entanglement or other means.
4. Species listed as endangered or critically endangered by the IUCN or on a national endangered species list.
5. Lethal action: Action taken to deliberately kill an animal, including marine mammals and birds.
6. Exception to these conditions may be made for a rare situation where human safety is endangered. Should this be required, post-incident approval from a senior manager should be made and relevant authorities must be informed.
7. Posting results on a public website is an example of "easily publicly available." Shall be made available within 30 days of the incident.
8. Lethal incident: Includes all lethal actions as well as entanglements or other accidental mortalities of non-salmonids.
9. Standard 2.5.6 applicable to incidents related to non-endangered and non-red-listed species. This standard complements, and does not contradict, 2.5.3.

[i] Also known as common seals
[ii] NERC Special Committee on Seals. Scientific Advice on Matters Related to the Management of Seal Populations: 2013 Available online at: http://www.smru.st-andrews.ac.uk/pageset.aspx?psr=411
[iii] Workshop report on decline in abundance of harbour seals around the coast of Scotland and discussion of mitigation and management measures. Sea Mammal Research Unit Report to the Scottish Government, November 2012.
[iv] A haul-out site is a location on land where seals come out of the water to rest, to moult, to breed and to have pups.
[v] http://www.scotland.gov.uk/Topics/marine/marine-environment/species/19887/20814/haulouts
[vi] http://www.scotland.gov.uk/Resource/0045/00455068.pdf
[vii] http://www.scotland.gov.uk/topics/marine/licensing/seallicensing
[viii] http://www.scotland.gov.uk/Topics/marine/Licensing/SealLicensing/appgraph
[ix] Lepper, P.A., Gordon, J., Booth, C., Theobald, P., Robinson, S. P., Northridge, S. & Wang, L. 2014. Establishing the sensitivity of cetaceans and seals to acoustic deterrent devices in Scotland. *Scottish Natural Heritage Commissioned Report No. 517.*
[x] A legal requirement to adhere to a Scottish Technical Standard for fish farm equipment (currently in development) can be introduced under the Aquaculture & Fisheries (Scotland) Act 2013. The first iteration is unlikely to include measures to deter depredation as it is subject to the recommendations of current research.
[xi] Aquaculture Stewardship Council Salmon Standard Version 1.0 June 2012 Available online at: http://www.asc-aqua.org/upload/ASC%20Salmon%20Standard_v1.0.pdf
[xii] Global Salmon Initiative (GSI) Statement on the Aquaculture Stewardship Council (ASC) Standard. Available online at: http://www.globalsalmoninitiative.org/wp-content/uploads/2013/08/ASC-Statement1.pdf
[xiii] Fisheries have accounted for 48% (2011), 52% (2012) and 62%(2013) of seals shot under licence.
[xiv] Harris N.I. (2012) Marine Mammals and Salmon Bag-Nets. Sea Mammal Research Unit. Available online at:
[xv] Current state of knowledge of the extent, causes and population effects of unusual mortality events in Scottish seals. SMRU Report to Scottish Government, April 2013.
[xvi] Ducted propellers are housed within a static casing, providing more efficient propulsion at low speeds.
[xvii] Testing the hypothetical link between shipping and unexplained seal deaths: Final report. SMRU report to Scottish Government, 2014 Available online at: http://www.smru.st-and.ac.uk/documents/1926.pdf
[xviii] *Ibid.*
[xix] Collectively - Scottish Natural Heritage, Countryside Council for Wales, Natural England, Joint Nature Conservation Committee
[xx] McConnell, B., Lonergan, M., Dietz, R. (2012) Interactions between seals and offshore wind farms. The Crown Estate
[xxi] Coram, A., Gordon, J., Thompson, D. and Northridge, S (2014). Evaluating and assessing the relative effectiveness of non-lethal measures, including Acoustic Deterrent Devices, on marine mammals. Scottish Government.
[xxii] Sparling, C. E., Coram, A. J., McConnell, B., Thompson, D., Hawkins K. R. & Northridge, S. P. (2013) NERC Wave and Tidal Consenting Position Papers Series: Marine Mammal Impacts Available online at: http://www.nerc.ac.uk/innovation/activities/infrastructure/offshore/marine-mammal-impacts.pdf
[xxiii] http://www.meygen.com/
[xxiv] SeaGen Environmental Monitoring Programme Final Report, Marine Current Turbines, 2011. Available online at: http://seageneration.co.uk/files/SeaGen-Environmental-Monitoring-Programme-Final-Report.pdf
[xxv] The Economic Impact of Wildlife Tourism in Scotland. Scottish Government Social Research 2010. Available online at: http://www.scotland.gov.uk/Resource/Doc/311951/0098489.pdf
[xxvi] http://www.marinecode.org/
[xxvii] A breeding colony haul-out
[xxviii] Sgeirean Glasa Summer Isles seal haul-out site, incorporating the entire islands of Sgeirean Glasa, Carn Iar, Carn Deas and associated rocky outcrops.