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The Conservation of British Cetaceans: A Review of the Threats and Protection Afforded to Whales, Dolphins, and Porpoises in UK Waters, Part 2

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EXECUTIVE SUMMARY

This the second part of a review on cetacean conservation in the UK covering legal aspects of conservation. The first part covered the established and emerging threats affecting cetaceans.[3] This review makes a series of recommendations that should be urgently implemented if the policymakers in the UK truly plan to meet their conservation commitments and save the British whales and dolphins for generations to come.

2. CURRENT LEGAL FRAMEWORK

2.1 International

2.1.1. United Nations Convention on the Law of the Sea (UNCLOS)

The United Nations Convention on the Law of the Sea (UNCLOS) came into force on 16 November 1994. UNCLOS, to which the UK is a party, was the result of a long process beginning with the 1958 United Nations Conference on the Law of the Sea, which primarily began in response to new technologies that allowed the exploitation of submarine mineral resources,

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and particularly, a UN General Assembly resolution in 1973 that called for codification of rules of custom relating to the sea.

UNCLOS defines marine territorial boundaries and the legal rights of coastal states to adjacent waters. Marine waters are divided into several zones, and each zone is allocated differing degrees of legal control. The innermost of these zones are internal waters, which include those landward of the low water mark, as well as the mouths of rivers and bays.[4] Under UNCLOS, a country has sovereignty over these waters and the resources contained therein. The next zone extends 12 nautical miles from the low water mark and the boundaries of internal waters. Within this zone, or territorial sea, the country also has sovereignty, although foreign shippers enjoy the right of "innocent passage" through this zone.[5]

Beyond this zone is the Exclusive Economic Zone (EEZ), which encompasses waters within 200 miles from the coastline. A country has no legal sovereignty over its EEZ, but it does have exclusive rights to exploit the resources contained within it.[6] Beyond the EEZ are the "high seas," which may be exploited by anyone.[7] The UK has not actually designated an EEZ, but it has claimed an Exclusive Fishing Zone (EFZ) and, recently, a Renewable Energy Zone,[8] which for many practical purposes are equivalent to an EEZ.

Cetaceans can be considered a "marine living resource" under UNCLOS.[9] UNCLOS requires that harvesting fishes and other marine living resources both in EEZs and on the high seas be carried out at a sustainable level.[10] Moreover, UNCLOS explicitly mentions migratory marine mammal conservation, stating that member states must co-operate to conserve, manage, and study such marine mammals (and other migratory species) in the EEZ and the high seas.[11] Furthermore, member states should "co-operate with a view to the conservation of marine mammals and in the case of cetaceans shall in particular work through the appropriate international organisations for their conservation, management and study."[12]

Although member states are obliged to ultimately ensure the conservation of cetaceans in the EEZ and the high seas, they may still commercially exploit marine mammals unless the sovereign country has voluntarily signed a statement stating otherwise. For at least baleen and sperm whales—and

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[4] United Nations Convention on the Law of the Sea, Dec. 10, 1982, art. 8, 21 I.L.M. 1261 [hereinafter UNCLOS].

[5] *Id. at* arts. 2, 3 and 17–19.

[6] *Id.* at arts. 56, 58.

[7] *Id.* at art. 87.

[8] *See* The Renewable Energy Zone (Designation of Area) Order 2004, 2004 No. 2668 (Eng.), *available at* http://www.legislation.hmso.gov.uk/si/si2004/20042668.htm

[9] G. Rose, *International Law and the Status of Cetaceans*, *in* THE CONSERVATION OF WHALES AND DOLPHINS: SCIENCE AND PRACTICE 23 (M.P. Simmonds & J.D Hutchinson eds., 1996).

[10] UNCLOS, *supra* note 4, at arts. 61, 119.

[11] *Id.* at arts. 64, 65, 120.

[12] *Id.* at arts. 65, 120.

it can be argued for the other cetaceans as well—one primary appropriate international organisation and competent authority for the conservation and management of these species is the International Whaling Commission (see Section 2.1.7).

2.1.2 United Nations Convention on Biological Diversity (CBD)

In 1992, 159 nations, including the UK, met in Rio de Janeiro, Brazil, at the widely publicized Rio Summit to discuss conserving biodiversity and natural resources. The result of this meeting included the Rio Declaration on Environment and Development and the United Nations Convention on Biological Diversity (CBD).[13] Several articles in the Rio Declaration are of particular relevance to cetaceans; in particular, Article 6, which calls on contracting parties to "[d]evelop national strategies, plans or programmes for the conservation and sustainable use of biological diversity."[14] This became translated in the UK as Biodiversity Action Plans (see Section 2.3.6). Article 6 also called on contracting parties to integrate these plans into governmental policies wherever relevant.[15] Thus, technically, when government departments conduct activities that affect biodiversity, including military activities or development, biodiversity conservation should be considered in the policy making process. The extent that this is being done in the UK is debatable.

As an initial step, parties were requested to identify important components of biodiversity[16] in terms of habitats[17] and species[18] and evaluate and monitor them[19] and the threats that they face.[20] UK Biodiversity Action Plans have been produced for cetaceans (see Section 2.3.6), but their success at stimulating conservation action or research is questionable. The CBD goes on to specifically mention the need and obligation for contracting parties to establish systems of protected areas (or areas where special conservation measures are taken) and also notes the need for the protection and restoration of ecosystems. SACs are currently the main system of protected area in the UK's marine environment, but they are generally of a small size, and the system

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[13] Which was implemented on 29 December 1993.

[14] Convention on Biological Diversity, June 5, 1992, art. 6(a), 31 I.L.M. 818 [hereinafter CBD].

[15] Signatories are requested to integrate "the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies." *Id.* at art. 6(b).

[16] *Id.* at art. 7(a).

[17] Key habitats included habitats "containing high diversity" and "large numbers of endemic or threatened species," but also habitats that were "required by migratory species" and of "scientific importance." *Id.* at annex I(1).

[18] Priority species included ones which were: "threatened" or of "social, scientific or cultural importance" or "importance for research into the conservation and sustainable use of biological diversity, such as indicator species" under which categories most cetacean species could be placed—as a top predator in the marine environment cetaceans are certainly considered to be a major indicator species for the health of the marine environment. *Id.* at annex I(2). For example, see R.S. Wells *et al*., *Bottlenose Dolphins as Marine Ecosystem Sentinels: Developing a Health Monitoring System*, 1 ECOHEALTH 246 (2004).

[19] CBD, *supra* note 14, art. 7(b).

[20] *Id.* at art. 7(c).

is very under-developed and away from the coast, so it is unlikely that they contribute significantly to the protection and restoration of ecosystems.

With respect to species conservation, the declaration calls for parties to aid the recovery of threatened species through the development and implementation of plans or management strategies.[21] The BAP process attempts to fulfil this, but its lack of statutory backing has resulted in few resources allocated, no powers to make effective changes, and little political will to drive the process forward (see Section 2.3.6).

The CBD requires the regulation and management of processes and activities with negative impacts on biodiversity,[22] along with a process of environmental impact assessment "with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures."[23] SEA, which occurs at a plan level, is currently only being undertaken by the energy sector (see Section 2.2.5). In the UK, EIAs are completed by many sectors for individual projects, with fisheries being the notable, worrisome exception. Public participation is possible to a degree within these processes. Although there have been EIAs available for public consultation for the Royal Navy's new low frequency active sonar system,[24] impact assessments for military exercises and other activities are generally not subject to public view or consultation.

One principle that comes through strongly from CBD is the need for application of the precautionary principle—a lack of full scientific knowledge should not be used as a reason to postpone conservation action. Despite the UK government stating that "the precautionary principle will be applied over both the level of exploitation and methods used. Activities which could cause major damage to species, populations[,] and ecosystems will be strictly controlled."[25] It is arguable that this has not been followed adequately in practice. High levels of cetacean bycatch and noise pollution from seismic surveys and military activities are two examples.

NOISE POLLUTION AND THE PRECAUTIONARY PRINCIPLE

The many sources of noise pollution and their effects in the marine environment were discussed in detail in Part 1. Although our knowledge and understanding of these effects are in their infancy, particularly when looking at cumulative effects, enough is known for there to be great concern

[21] The declaration calls for parties to "[r]ehabilitate and restore degraded ecosystems." *Id.* at art. 8(f).

[22] *Id.* at art. 8(i).

[23] *Id.* at art. 14(a).

[24] QinetiQ, *Environmental Impact assessment in support of the Procurement of Sonar 2087*, Version 1.0. QinetiQ, Dorchester (2002).

[25] Her Majesty's Stationary Office [HMSO], *Safer Ships, Cleaner Seas* (report of Lord Donaldson's Inquiry into the Prevention of Pollution from Merchant Shipping 1994).

amongst cetacean scientists and conservationists. The precautionary principle states that "where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimise such a threat."[26] Its application in the management of noise producing marine activities is of the utmost importance for cetacean conservation. It is our view that the UK has not been precautionary enough in this regard, at least in relation to the licensing of oil and gas exploration and the development of a new military sonar system.

Oil and Gas

For the past few years, Strategic Environmental Assessments (see Section 2.2.5) for oil and gas activities have taken place for different areas of UK seas. It is at this level that decisions can be made to set aside particular areas for further licensing because they are/may be too sensitive to damage. Year after year noise impacts on cetaceans, particularly from seismic surveying, have been raised as a concern.[27] "The range of potential behavioural effects and the consequently large potential for cumulative effects, indicate that all marine mammal populations in the area are likely to be exposed to biologically significant sound levels."[28]

It is also acknowledged that "environmental assessment of the noise effects of UK [continental shelf] offshore operations (in particular, seismic surveys) has been limited by a lack of relevant, reliable data."[29] But, such information is "important for overall consideration of management and minimization of adverse effects."[30]

[26] CBD, *supra* note 14, at pmbl.

[27] *E.g.*, UK Dep't of Trade and Industry [DTI], *Strategic Environmental Assessment to the East of the Scottish mainland, Orkney and Shetland* (SEA5) (2004), *available at* http://www.offshore-sea.org.uk/site/scripts/downloads.php?categoryID=41 [hereinafter DTI (2004)]; DTI, *Strategic Environmental Assessment Area North and West of Orkney and Shetland* (Sept. 2003), *available at* http://www.offshore-sea.org.uk/consultations/SEA_4/SEA4_assessment.pdf [hereinafter DTI (Sept. 2003)]; DTI, *Strategic Environmental Assessment of Parts of the Central and Southern North Sea SEA*, at 3 (Aug. 2002), *available at* http://www.offshoresea.org.uk/consultations/SEA_3/SEA3_Assessment_Document_Rev1_W.pdf

[28] *E.g.*, DTI (2004), *supra* note 27; DTI (Sept. 2003), *supra* note 27.

[29] DTI, *Strategic Environmental Assessment of the Mature Areas of the Offshore North Sea SEA 2* (Sept. 2001), *available at* http://www.offshore-sea.org.uk/consultations/SEA_2/SEA2_Assessment_Document.pdf

[30] DTI (Sept. 2003), *supra* note 27.

Despite this, no areas have been declared a "no go" for cetacean protection because: "Clear cut conclusions on the significance of potential effects of seismic exploration . . . on marine mammals cannot be reached on the basis of available scientific data."[31] Even areas such as the Atlantic Frontier, which is recognised as being of international importance for cetaceans, including several endangered or vulnerable species,[32] have not been set aside.

When the lack of a precautionary approach in oil and gas exploration evaluations was pointed out to the government, it was justified on the grounds that a high abundance of cetaceans in areas to be seismically surveyed had been noted in the assessment, and that government guidelines for seismic surveys adequately mitigated any possible impacts.[33] However, these guidelines have major flaws,[34] and the government itself noted that "current mitigation is largely based on 'common sense' measures and it is difficult to establish whether they work and/or could be made more effective."[35]

The emphasis appears to be on ensuring that oil and gas exploration goes ahead with minimal hindrance rather than acting in a precautionary manner on concerns about known and likely impacts on cetaceans. The flawed guidelines,[36] the only mitigation measure currently in place, may mitigate against some of the acute impacts of sound, but do not mitigate against the effects of habitat degradation caused by repeated use of far-travelling and high-intensity noise. Nor do they mitigate against the impacts of seismic surveys on cetacean prey species, such as fish and squid, which are known to be vulnerable to seismic survey noise. Studies show injury or death of these animals from exposure to seismic noise.[37] At worst, this raises questions about whether the UK is complying with the Habitats Directive.

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[31] DTI (2004), *supra* note 27.

[32] For example, fin whale, sei whale, and blue whale.

[33] DTI, *SEA 5, Post Public Consultation Report, January 2005, Strategic Environmental Assessment, Oil and Gas Licensing* (Jan. 2005), *available at* http://www.offshore-sea.org.uk/consultations/SEA_5/SEA_5_Post_Consultation_Report.pdf

[34] For a detailed critique of the seismic survey guidelines see E.C.M Parsons *et al*., *A critique of the UK's JNCC Seismic Survey Guidelines for minimizing acoustic disturbance to marine mammals: Best practice?* 58 MARINE POLLUT. BULL., 643–651 (2009).

[35] DTI (2002), *supra* note 27, at 156.

[36] Parsons *et al.* (2009) *supra* note 34.

[37] Robert D. McCauley *et al.*, *High Intensity Anthropogenic Sound Damages Fish Ears*, 113 J. OF ACOUSTICAL SOC'Y OF AM. 638, 638–642 (2003), *available at* http://www.awionline.org/ht/a/GetDocumentAction/i/10166; C. McKenzie *et al*., *Concentrations and Patterns of Organic Contaminants in Atlantic White-Sided Dolphins* (Lagenorhynchus acutus) *From Irish and Scottish Coastal Waters*, 98 ENVTL. POLLUTION 15, 15–27 (1997).

The disturbance caused may have been ruled to not be "deliberate,"[38] but given that some areas have been exposed to a significant amount of seismic activity[39] and the effects on cetaceans are likely over a large area, it could be shown to be causing the "deterioration and destruction of breeding sites or resting places."

Military Sonar

To summarise our current understanding of the mid-frequency sonar and cetacean issue, an excerpt from the report of a 2004 international workshop of the International Whaling Commission on [cetacean] Habitat Degradation neatly encapsulates our current understanding of the situation:

> Using comparative correlations in the case of beaked whale mass strandings related to the use of mid-frequency military sonar, it was evident that some kind of causal relationship existed. This was initially suspected to be mediated by physical damage to the auditory system, but more recent studies have suggested that the mechanism may be a result of a behavioural response to noise altering dive behaviour, and potentially causing lethal bubble formation in tissues via a 'decompression sickness' type mechanism. Thus, the mechanism in this instance would have a significant impact on mitigation since the received noise level initiating a behavioural response is predicted to be lower (possibly much lower) than that which would cause direct physical damage to tissues.[40]

Neither the number of cetacean stranding incidents coincident with military activities, nor the documented bends-like lesions, prove definitively that naval sonars are causing these stranding events. Nonetheless, the amount of circumstantial evidence has become quite substantial. Or, to use a term often associated with the situation, a naval sonar is a "smoking gun." Indeed, so much so that in 2004, after the Scientific Committee of the International Whaling Commission had discussed the cetacean and noise issue, over 200 of the world's leading whale biologists approved the

[38] European Union Council Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora art. 12(1)(b) 1992 O.J. (L 206/7)—deliberate disturbance of cetaceans is prohibited. R.v. The Secretary of State for Trade and Industry *ex parte* Greenpeace (1999) ruled that an oil company conducting an activity in the knowledge that disturbance would result, is not disturbing cetaceans.

[39] *E.g.*, DTI (2004), *supra* note 27 (showing map coverage of seismic survey in SEA areas); DTI (Sept. 2003), *supra* note 27.

[40] INT'L WHALING COMM'N, REPORT OF THE IWC HABITAT DEGRADATION WORKSHOP, 12–15 NOVEMBER 2004, SIENA, ITALY 9 (2005).

statement: "In conclusion, the Committee agrees that there is now compelling evidence implicating military sonar as a direct impact on beaked whales in particular."[41]

Several international bodies besides the International Whaling Commission have recognized that the evidence amassed indicates that underwater noise, in particular naval sonar, represents a clear and present danger to cetaceans. In November 2004, at the third Congress of the World Conservation Union (IUCN), a resolution was passed that recognised this issue and called on member governments to consider how to limit high intensity sound sources until their effects on marine wildlife (both short and long-term) are better understood.[42] They also requested underwater noise to be considered in, for example, the designation of marine protected areas and the construction of the IUCN's red data lists.[43] Importantly, the resolution evoked the precautionary principle and asked members to recognise that conservation measures, with respect to underwater noise, should not be postponed due to a lack of full scientific certainty.[44]

On 28 October 2004 European Parliament passed a resolution that is probably one of the strongest statements by an international body yet on the issue of navy sonar and its impact on cetaceans. This resolution called on the European Commission and the Member States to: "adopt a moratorium on the deployment of high-intensity active naval sonar's until a global assessment of their cumulative environmental impact on marine mammals, fish and other marine life has been completed;"[45] and "immediately restrict the use of high-intensity active naval sonars in waters falling under their jurisdiction;"[46] as well as to: "set up a Multinational Task Force to develop international agreements regulating noise levels in the world's oceans, with a view to regulating and limiting the adverse impact of anthropogenic sonars on marine mammals and fish."[47] This resolution from the European Union represents a strong statement of concern about the underwater noise issue, in particular, the call for a moratorium on new military sonar systems

[41] INT'L WHALING COMM'N, ANNEX K, REPORT OF THE STANDING WORKING GROUP ON ENVIRONMENTAL CONCERNS 44 (2005).

[42] Int'l Union for the Conservation of Nature [IUCN], *Undersea Noise Pollution*, CGR3, RES053-REV1, 3d IUCN Congress, 17–25 November 2004, Bangkok, Thailand (2004).

[43] *Id.*

[44] *Id.*

[45] European Parliament resolution on the environmental effects of high-intensity active naval sonars, PARL. EUR. Doc B6–0089 (2004).

[46] *Id.*

[47] *Id.*

primarily produced in response to their observed and potential impacts on cetaceans.

What has been the response to this concern in the UK? The Royal Navy conducted a more in-depth assessment of the environmental effects of their new SONAR 2087 sonar system[48] when it was realized that sonar might be an issue for cetaceans. This assessment was produced before the issue of gas bubble lesions became widely known, and some of this review's assumptions and conclusions are already out of date or have been proven to be incorrect. The commissioning of this new sonar system has continued nonetheless.

The International Whaling Commission noted at its 2004 International Workshop on Habitat Degradation: "The Workshop **agreed** that it is usually difficult to characterise mechanisms conclusively, and although establishing cause–effect relationships is an ideal, a weight of evidence approach should be sufficient to elicit precautionary management action."[49]

The precautionary management noted above should be introduced as soon as possible. Currently, environmental impact assessment methods largely rely on assessment of physical damage to cetaceans in order to predict and assess the potential impact of noise producing activities, such as military sonar on cetaceans. At the very least, these methods should be scrapped in the face of the mounting data that these assumptions are erroneous, and behavioural responses at much lower sound levels considered as resulting in cetacean injury or death (see Part 1 of this review).

The introduction of new types of military sonar, such as lower frequency systems,[50] should proceed with caution. The low frequency sounds produced by these systems will travel much farther than the mid-frequency sonars that are the current focus of concern. Although there is not a definitive link between these systems and mass strandings,[51] at the very least, the

[48] ENVIRONMENTAL IMPACT ASSESSMENT IN SUPPORT OF THE PROCUREMENT OF SONAR 2087. VERSION 1.0. (QinetiQ, Dorchester 2002) [hereinafter SONAR 2087 EIA].

[49] *Id.* at 9.

[50] For example, SONAR 2087 in the United Kingdom.

[51] Such a result is unlikely to be seen yet either, as these systems are in the process of being tested and are not in widespread use. Moreover, there is no monitoring of any impacts on cetaceans apart from a very small (one kilometre in the case of the U.S. system) radius around vessels, a tiny fraction of area that is esonified by these systems, or even cause auditory damage. The Royal Navy's environmental impact assessment for the SONAR 2087 sonar system predicts that permanent cetacean auditory damage could occur up to seven kilometres from the source with behavioural impacts occurring at, presumably, a greater range. Thus, arguably the UK system should have a cetacean exclusion range of, at the very least, seven kilometres. SONAR 2087 EIA, *supra* note 48.

Royal Navy should work with scientists and conservationists to conduct a thorough and open assessment of the potential impacts of these sonar systems, both on paper and in the field, and not introduce the widespread deployment of such systems until such an assessment is done to the satisfaction of the marine science community at large.

In addition, all critical cetacean habitats should be made off limits, not only to naval vessels using both mid- and low-frequency sonar systems, but also to esonification—sonar-produced sound, which could travel substantial distances from the vessels—at least until the until the effects can be properly assessed and it can be proven, or at least shown that it is highly likely, that sonar will not impact cetaceans in these critical areas.

2.1.3. Convention on Trade in Endangered Species of Wild Fauna and Flora (CITES)

The Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES), to which the UK is a party, came into effect in 1975. The purpose of CITES is to prevent the exploitation of vulnerable and threatened species by controlling international trade in endangered species of flora and fauna and their products. Species listed in CITES Appendix I are threatened with extinction or may become threatened by trade. Therefore, international trade of these species (or their parts) for commercial purposes is banned. Any trade of Appendix I species for non-commercial purposes must be documented with both an export and import permit. Appendix II listed species are deemed to be vulnerable, and limited and controlled trade is allowed.

All species of cetaceans in UK waters are listed in either CITES Appendix I or II (Table 1). Primarily, the whale species covered under the IWC are listed under Appendix I, which is, in part, due to a resolution that unequivocally recommended that commercial trade should be banned for all species covered under the IWC (see Section 2.1.7).[52] At the last few meetings of the Conference of Parties to CITES (its decision-making body), the pro-whaling nations have proposed down-listing of Northern minke whale populations in the north Atlantic.[53]

However, in the UK, CITES is implemented via the EC Regulation of Trade in Endangered Species.[54] All cetaceans are noted under list C1 of the

[52] CITES Res. 2.9, 11th Meeting, (April 10–20, 2000).

[53] Tenth Meeting of the Conference of Parties, June 1997, *Proposals for Amendments of Appendices I and II*, Harare, Zimb. Eleventh Meeting of the Conference of Parties, April 2000, *Proposals Resulting from the Periodic Review by the Plants Committee*, Nairobi, Kenya. Twelfth Meeting of the Conference of Parties, November 2002, *Proposals for Amendments of Appendices I and II*, Santiago, Chile.

[54] 1997 J.O. (L 61) 40.

TABLE 1. CITES listing of all cetaceans that have been reported in the UK

Common name	CITES LISTING
ODONTOCETES	
Harbour porpoise	II*
Atlantic white-sided dolphin	II*
Common bottlenose dolphin	II*
Fraser's dolphin	II*
Risso's dolphin	II*
Short-beaked common dolphin	II*
Striped dolphin	II*
White-beaked dolphin	II*
False killer whale	II*
Killer whale	II*
Long-finned pilot whale	II*
Melon-headed whale	II*
Narwhal	II*
Beluga whale	II*
Northern bottlenose whale	I
Blainvilles's beaked whale	II*
Cuvier's beaked whale	II*
Gervais's beaked whale	II*
Sowerby's beaked whale	II*
True's beaked whale	II*
Sperm whale	I
Pygmy sperm whale	II*
MYSTICETES	
Northern minke whale	I
Fin whale	I
Sei whale	I
Humpback whale	I
Northern right whale	I
Blue whale	I

*In the UK, these species are treated as if in Appendix I—see text for details.

regulation, which means that regardless of which Appendix cetaceans are actually listed under, all cetaceans in the UK are treated as if they are in Appendix I, e.g., commercial trade is prohibited between the UK and other nations.

2.1.4 Convention on the Conservation of Migratory Species of Wild Animals (CMS)

The UK is also a party to the 1979 Convention on the Conservation of Migratory Species of Wild Animals (CMS), sometimes referred to as the Bonn Convention, which came into force in the UK in 1985. The CMS encourages signatories to develop multilateral agreements for species that cross national

TABLE 2. CMS listing of all cetaceans that have been reported in the UK

Common name	CMS Appendix
ODONTOCETES	
Harbour porpoise	II (North Sea population only)
Atlantic white-sided dolphin	II (North Sea population only)
Common bottlenose dolphin	II (North Sea population only)
Fraser's dolphin	—
Risso's dolphin	II (North Sea population only)
Short-beaked common dolphin	II (North Sea population only)
Striped dolphin	—
White-beaked dolphin	II (North Sea population only)
False killer whale	—
Killer whale	II
Long-finned pilot whale	II (North Sea population only)
Melon-headed whale	—
Narwhal	—
Beluga whale	—
Northern bottlenose whales	II
(Blainvilles's) densebeaked whale	—
Cuvier's beaked whale	—
Gervais's beaked whale	—
Sowerby's beaked whale	—
True's beaked whale	—
Sperm whale	I & II
Pygmy sperm whale	—
MYSTICETES	
Northern minke whale	—
Fin whale	I & II
Sei whale	I & II
Humpback whale	I
Northern right whale	I
Blue whale	I

jurisdictional boundaries.[55] Most UK cetaceans are highlighted as priority species under the CMS, being listed under Appendix I (migratory species threatened with extinction) or Appendix II (migratory species that would significantly benefit from international co-operation) (Table 2).

With respect to cetaceans in Europe, the CMS has helped progress regional conservation agreements for cetaceans in the Mediterranean and Black Seas (ACCOBAMS)[56] and the Baltic and North Seas (ASCOBANS). This latter agreement, which obliges parties to co-operate in order to achieve and maintain a favourable conservation status for small cetaceans in the agreement

[55] Convention on the Conservation of Migratory Species of Wild Animals art. 4(4), June 23, 1979, 19 I.L.M. 11, 1651 U.N.T.S. 28395.

[56] Agreement on the Conservation of Cetaceans of the Black Seas, Mediterranean Sea, and Contiguous Atlantic Area, November 24, 1996.

area, is particularly relevant to the UK and is discussed below (see Section 2.1.5). Further, the CMS produces resolutions and recommendations that parties are obliged by, including several recent actions[57] on bycatch-related issues, which also affect cetacean conservation.

2.1.5 Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas (ASCOBANS)

On 17 March 1992, the Agreement on the Conservation of Small Cetaceans[58] of the Baltic and North Seas (ASCOBANS) was signed. ASCOBANS was the result of negotiations facilitated through the auspices of the aforementioned CMS. ASCOBANS was built upon an intergovernmental memorandum of understanding endorsed two years previously,[59] and another 1979 convention: the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention). The Bern Convention has listed all small cetaceans regularly present in the Baltic and North Seas on Appendix II, i.e., "strictly protected species." ASCOBANS calls on parties to "undertake to cooperate closely in order to achieve and maintain a favourable conservation status for small cetaceans."[60]

ASCOBANS further requires the parties to, as in so much as they are able to, apply certain "conservation, research and management measures."[61] These measures include working towards:[62]

> (a) the prevention of the release of substances which are a potential threat to the health of the animals,
>
> (b) the development . . . of modifications of fishing gear and fishing practices in order to reduce bycatches and to prevent fishing gear from getting adrift or being discarded at sea,
>
> (c) the effective regulation . . . of activities which seriously affect their food resources, and
>
> (d) the prevention of other significant disturbance, especially of an acoustic nature.

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[57] *E.g.*, COP Res. 6.2; COP Rec. 7.2.

[58] The term "small cetaceans" refers to all odontocete cetaceans (toothed whales, dolphins, and porpoises), except the sperm whale.

[59] The Ministerial Declaration of the Third International Conference on the Protection of the North Sea, The Hague, Netherlands, March 7–8, 1990, *Memorandum of Understanding on Small Cetaceans in the North Sea* [hereinafter Hague MOU].

[60] The Convention on the Conservation of European Wildlife and Natural Habitats art. 2.1, September 19, 1979, Europ. T.S. No. 104 [hereinafter The Bern Convention].

[61] *Id.* at art. 2.2.

[62] *Id.* at Annex 1, art. 1.

ASCOBANS also calls for coordinated research on small cetacean distribution and abundance,[63] including trying to "locate areas of special importance to their survival"[64] and "identify present and potential threats" to small cetacean species.[65,66]

With respect to specific protection of small cetaceans, ASCOBANS requests parties to introduce national legislation to prohibit "intentional taking and killing of small cetaceans" and "the obligation to release immediately any animals caught alive and in good health."[67] Although both the intentional capture[68] and killing of small cetaceans in the UK has been prohibited since enacting the 1981 Wildlife and Countryside Act (see Section 2.3.1), no legislation has been introduced to enforce the immediate release of animals entangled in fishing gear (or captured by any other method), nor has any method been introduced by which such releases could be enforced.[69] In another article, ASCOBANS requires parties to ensure information is provided "to fishermen in order to facilitate and promote the reporting of [bycatches]" and so that they can appropriately deliver the carcasses of any animals that have accidentally been by caught to the appropriate authorities for analysis.[70]

On paper, ASCOBANS is a major step forward in the conservation of cetaceans, but over a decade after signing this agreement, how much progress has been made in the conservation of small cetaceans in the North and Baltic Seas? One major survey was conducted in the Agreement area under the auspices of ASCOBANS in 1994,[71] and another in 2005, but there has only been limited funding for other research.[72] Have modifications been made to fishing

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[63] *Id.* at Annex 1, art. 2.

[64] *Id.* at Annex 1, art 2(b).

[65] *Id.* at Annex 1, art 2(c).

[66] It is interesting to note that the agreement states that these studies "should exclude the killing of animals and include the release in good health of animals captured for research." *Id.* at Annex 1, art. 2.

[67] Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas Annex 1, art. 4, March 17, 1992, 1772 U.N.T.S. 217 [hereinafter ASCOBANS].

[68] The Wildlife and Countryside Act and ASCOBANS refer to the "taking" of cetaceans. Wildlife and Countryside Act, 1991, ch. 69, sched. 7, United Kingdom, *available at* http://www.jncc.gov.uk/page-3614; ASCOBANS, *supra* note 476, at Annex 1, art. 4. This implies the deliberate capture of animals rather than the definition of "take" used by the U.S. Marine Mammal Protection Act which can mean the disturbance, injury or death of an animal.

[69] ASCOBANS, *supra* note 67, at Annex 1, art. 4.

[70] *Id.* at Annex 1, art 5.

[71] P. S. Hammond *et al*., *Distribution and Abundance of the Harbour Porpoise and Other Small Cetaceans in the North Sea and Adjacent Waters*, delivered to the European Commission, LIFE 92–2/UK/27, (1995).

[72] Whilst these large scale surveys are welcome, it is important to realise that they only provide a broad-scale snapshot of some areas. This results in some population density data and population estimates but may contribute little to local conservation management, and may even be misleading if population structure is unknown. For example, an estimate of a certain species covers a vast area of sea but does not reveal that they exist in discrete "biological populations," which require particular conservation measures.

gear in the region? Has legislation been introduced to reduce impacts on small cetacean food sources? It could be argued that the 2004 European regulation on bycatch (see Section 2.2.3) has, perhaps, led to the modification of some fishing gear in the ASCOBANS area (e.g., the requirement for Acoustic Deterrent Devices—or "pingers"—to be added to fishing nets for larger vessels in the North Sea, English Channel, and Celtic Sea), but there has been no net modification regulations for vessels in the Baltic Sea where a reduction of bycatch is urgently needed (Section 2.2.3). Also, the issue of impacts on cetacean prey species has not been addressed.

Some areas of UK waters that contain, arguably, some of the most important cetacean habitats, were not technically covered by ASCOBANS: in particular, the western and northern waters of Scotland.[73] However, when it ratified ASCOBANS, the UK government stated that it would include these waters with respect to national conservation activities related to the agreement. More recently, the member countries have agreed to extend the ASCOBANS boundaries to include the waters west of the UK and also extending the area southwards to the Bay of Biscay. This would greatly increase the conservation potential of the agreement.

2.1.6 International Union for the Conservation of Nature (IUCN)

The International Union for the Conservation of Nature (IUCN) is a unique hybrid of environmental NGOs and governmental bodies consisting of (as of 2009) 80 sovereign states, 112 government agencies, and 742 non-governmental organisations (NGOs). While not providing legal protection, the IUCN's "red list" provides criteria for the evaluation of how threatened a species is and whether it is vulnerable or endangered. A full listing of the IUCN classifications for cetaceans recorded in UK is presented in Table 3.

Being classified as "endangered" means that the species:

1. Has significantly decreased (50 percent decrease) in numbers in recent years (ten years or three generations);
2. Numbers less than 2,500 animals in total;
3. Occurs only in a very small area or fragmented habitat; and/or
4. Faces a high risk of extinction in the wild in the near future (20 percent in the next 20 years or five generations).

Endangered species occurring in UK waters include fin, blue, sei, and North Atlantic right whales (Table 3). A "vulnerable" species:

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[73] Parsons *et al.*, *Cetacean Conservation in Northwest Scotland: Perceived Threats to Cetaceans,* 13 EUR. RES. ON CETACEANS, 128–133 (1999).

TABLE 3. IUCN listing of all cetaceans that have been reported in the UK

Common name	IUCN LISTING
ODONTOCETES	
Harbour porpoise	LEAST CONCERN
Atlantic white-sided dolphin	LEAST CONCERN
Common bottlenose dolphin	LEAST CONCERN
Fraser's dolphin	LEAST CONCERN
Risso's dolphin	LEAST CONCERN
Short-beaked common dolphin	LEAST CONCERN
Striped dolphin	LEAST CONCERN
White-beaked dolphin	LEAST CONCERN
False killer whale	DATA DEFICIENT
Killer whale	DATA DEFICIENT
Long-finned pilot whale	DATA DEFICIENT
Melon-headed whale	LEAST CONCERN
Narwhal	NEAR THREATENED
Beluga whale	NEAR THREATENED
Northern bottlenose whales	DATA DEFICIENT
(Blainvilles's) densebeaked whale	DATA DEFICIENT
Cuvier's beaked whale	LEAST CONCERN
Gervais's beaked whale	DATA DEFICIENT
Sowerby's beaked whale	DATA DEFICIENT
True's beaked whale	DATA DEFICIENT
Sperm whale	VULNERABLE
Pygmy sperm whale	DATA DEFICIENT
MYSTICETES	
Northern minke whale	LEAST CONCERN
Fin whale	ENDANGERED
Sei whale	ENDANGERED
Humpback whale	LEAST CONCERN
Northern right whale	ENDANGERED
Blue whale	ENDANGERED

1. Has decreased in numbers in recent years (20 percent decrease in the last ten years or three generations);
2. Exists in low numbers globally (but in larger numbers than endangered species, e.g., between 2,500 and 10,000 animals); and/or
3. Faces a high risk of extinction in the wild in the medium term (i.e., ten percent chance of extinction in the next 100 years).

Vulnerable species in UK waters include the sperm whale.

Put simply, "conservation dependent" means that a species is currently subject to a conservation programme, the cessation of which would cause the species to become vulnerable or endangered within five years. "Near threatened" species are species which are not conservation dependent, but are close to qualifying for vulnerable status (e.g., narwhal). Species which

are categorized as "Least concern" have been assessed but do not qualify for any of the previous categories and are generally "widespread and abundant" species (e.g., various dolphin species).

Species for which there is not enough information to make an assessment as to their conservation status are denoted as "data deficient." However, this categorization recognises that research in the future may result in the species qualifying for one of the above categories.

In addition to keeping and assessing the Red Lists, the IUCN has a Cetacean Specialist Group (CSG) which, to date, has produced three action plans detailing research and conservation priorities for threatened cetacean species or populations.[74] The CSG also holds an international congress. Although there were no specific projects that might influence UK cetacean conservation in the most recent CSG Action Plan, Project 44 in the 1988–1992 Action Plan[75] outlines the need to investigate the effects of development on coastal cetaceans—an issue which also affects UK cetaceans. Project 26, in the 1994–1998 Action Plan,[76] discusses the need for a status assessment of bottlenose dolphins—a species that has been highlighted by the IUCN as a population at risk by virtue of its proximity to human activities—and identifies problem areas. This reinforces a priority for conservation action for bottlenose dolphins in the UK, especially with regard to the impacts of coastal development and anthropogenic activity.

One IUCN resolution that could have the most immediate effect on cetacean conservation in UK waters was on undersea noise pollution.[77] This resolution calls for member bodies to monitor for, and investigate, the impacts undersea noise has on marine species, and to consider how to limit the use of powerful noise sources until their short-term and long-term effects are better understood. The resolution particularly emphasizes for member bodies to "act with particular urgency to reduce impacts on beaked whales" by military sonar systems; for example, by restricting training to low risk areas and working towards international regulations. The resolution also requests that the impacts of noise should be considered when developing Red List criteria, with consideration given to the development of alternate technologies, and that the precautionary principle should be employed, not waiting for definitive scientific proof before engaging conservation action.

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[74] W. F. PERRIN, DOLPHINS, PORPOISES, AND WHALES: AN ACTION PLAN FOR THE CONSERVATION OF BIOLOGICAL DIVERSITY: 1988–1992 (1989); RANDALL R. REEVES *ET AL.*, DOLPHINS, PORPOISES, AND WHALES: 1994–1998 ACTION PLAN FOR THE CONSERVATION OF CETACEANS (1994); RANDALL R. REEVES *ET AL.*, DOLPHINS, WHALES, AND PORPOISES: 2001–2010 CONSERVATION ACTION PLAN FOR THE WORLD'S CETACEANS (2003).

[75] PERRIN, *supra* note 74.

[76] REEVES & LEATHERWOOD, *supra* note 74, at 31–32.

[77] IUCN Res. 53, Third IUCN Congress, (November 17–25 2004), *available at* http://www.awionline.org/ht/a/GetDocumentAction/i/10132

The issue that marine protected areas should also protect against submarine sound was also raised. The resolution emphatically recognizes that submarine noise causes disturbance, and thus, species listed under the EU Habitats Directive, especially cetaceans, should be protected from such disturbance. Finally, the resolution calls for the UNEP Regional Seas program to include control of anthropogenic noise in their deliberations and activities.

The third IUCN World Conservation Congress was held in Bangkok, Thailand (17–25 November 2004). At this Congress, a number of resolutions were passed with implications for cetacean conservation in UK governed waters, albeit not UK EFZ waters. In a resolution on overseas dependant territories of European countries, member parties were requested to fully consider biodiversity conservation in any overseas territories they might possess, and to develop Action Plans for the conservation of biodiversity in these territories.[78] This is particularly pertinent to the UK, which has several overseas territories and dependencies that have cetacean populations, and which presumably would be encompassed in such plans, including Caribbean territories (e.g., Turks and Caicos and British Virgin Islands), Bermuda, the Falkland Islands, and South Georgia.

2.1.7 International Convention for the Regulation of Whaling

The UK has a long history of whaling activity dating from coastal hunts of Atlantic grey whales by Anglo-Saxons.[79] Commercial whaling by British interests began in earnest in the 1600s and continued until the UK formally ceased whaling activities in 1963. The use of any ship for whaling[80] is prohibited within the UK EFZ.[81]

At present, the International Whaling Commission (IWC) is widely recognized as the primary international competent authority for the regulation and management of whales and whaling.[82] The IWC was originally established in 1948 by nations engaged in whaling activities and currently comprises 60

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[78] *Id*.

[79] Mark Gardiner, *The Exploitation of Sea-Mammals in Medieval England: Bones and Their Social Context*, 154 THE ARCHAEOLOGICAL J. 173 (1997).

[80] The "whaling" of any cetacean is prohibited, whether a toothed (odontocete) or baleen (mysticete) cetacean. *Id*.

[81] Whaling Industry (Regulations) Act 1934, 1934, ch. 49, United Kingdom, *available at* http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1934/cukpga_19340049_en_1 (amended by the Fishing Limits Act 1981).

[82] It should be noted that there are other international bodies that are recognized by some countries as a competent authority, but not others. For example, ACCOBAMS and NAMMCO (the North Atlantic Marine Mammal Commission). The latter is somewhat controversial as an international organization since membership is 'by invitation' rather than freely open to all North Atlantic nations, and thus does not represent all North Atlantic maritime nations. ACCOBAMS Res. 2.16, Second Meeting of the ACCOBAMS Contracting Parties (November 9–12 2004), *available at* http://www.accobams.org/index.php?option=com_content&view=article&id=76:second-meeting-of-the-accobams-contracting-parties&catid=51:meetings-of-the-parties&Itemid=6

nations, only a few of which are currently actively involved in whaling.[83] Its activities are based upon the International Convention for the Regulation of Whaling, which was signed in 1946.

There is, however, some confusion over exactly which species the IWC has authority over. The 1946 Convention does not actually define a "whale" as such. In an annex to the final act of the Convention, there are a number of whale species listed in a variety of languages. Some IWC members consider that the IWC has legal competence only to regulate and manage the species mentioned in the annex (all baleen whales, except the pygmy right whale and the sperm whale). Other countries (including the UK), however, consider that the IWC may have competence over all cetacean species.

In 1972, the United Nations Conference on Human Environment adopted a resolution that called for ten-year moratorium on commercial whaling. A decade later, in 1982, a majority vote by the IWC echoed this resolution and adopted a moratorium on commercial whaling, which came into effect in 1986. Although there is theoretically a global ban on commercial whaling, Norway tabled a reservation to the moratorium, and so is legally outside of the moratorium and allowed to hunt whales on a commercial basis.[84] At present, Norway takes approximately 700 minke whales per annum[85] from waters adjacent to the UK.

Elsewhere in the North Atlantic, Iceland hunted a number of minke whales for scientific purposes between 2003 and 2005, and has been conducting commercial whaling since 2006.[86,87] Iceland also currently has a reservation to the moratorium, although this reservation is somewhat controversial: Iceland initially accepted the moratorium as an IWC member, but subsequently

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[83] Norway and Iceland currently conduct commercial whaling. Japan conducts so-called scientific whaling, which is effectively a commercial hunt under another name. Bequia (St. Vincent and the Grenadines), the Russian Federation, Greenland (a protectorate of Denmark), and the U.S. currently conduct aboriginal subsistence whaling.

[84] Nations such as Japan and Peru originally tabled reservations to the moratorium when it was agreed, but these were subsequently withdrawn.

[85] In 1993, when Norway restarted whaling, 157 minke whales were taken. This quota of whales has steadily increased: in 2004 the quota was 670 minke whales, and the proposed quota for 2005 is 796 animals.

[86.] In 2003, 37 whales were taken, with 25 in 2004 and 39 in 2005. In 2006, 60 more minke whales were taken under commercial whaling, and 39 in 2007. The whaling briefly stopped in 2007, primarily due to lack of demand for whale meat that had already been harvested, but resumed in 2008, taking a total of 82 minke whales. In 2009, Icelandic whalers caught 79 more minke whales but also 125 "endangered" fin whales.

[87] Japan and Iceland (between 2003 and 2005) both conducted a whaling program that is allowed by a loophole in the Convention that allows a lethal take of whales for scientific purposes. This "scientific whaling" is highly controversial and has been heavily criticized by many scientists belonging to the IWC Scientific Committee. For example, P.J. Clapham *et al*., *Whaling as science*, 53 BIOSCIENCE 210, 210–212 (2003) states, "Many [IWC Scientific Committee] members have contended that Japan's scientific whaling program is so poor that it would not survive review by any independent funding agency."

left the Commission in 1992. Iceland then rejoined the IWC in October 2002, after several rejected attempts, but rejoined with the proviso that it could join the IWC with a reservation against the moratorium. The reacceptance of Iceland into the IWC was, therefore, highly controversial.[88,89]

A related issue is the fact that the surveys conducted by Norway to generate the population estimates that it uses in its calculation of whaling quotas, are in part, conducted in UK waters. For a few years, the UK refused to allow these surveys to enter within UK national jurisdictions (presumably in response to the fact that Norway uses a system to calculate quotas that has not been approved by the IWC). This ban was rescinded in 2004, but it is not clear why this decision was made.

Concern has been raised that Norwegian vessels may actually enter UK waters during whaling operations themselves.[90] Moreover, it is possible that the range of the minke whales being hunted could well include UK waters. Minke whales encountered within the UK EFZ appear to be primarily feeding.[91] However, there is, at present, no information on where these whales go outside of the summer feeding period, the routes that they take, or, indeed, their population structure in general.

At present the UK government has a strong pro-conservation/anti-whaling stance at the IWC. This stance is very much in line with British public opinion: surveys have noted that more than 96 per cent of surveyed members of the public in some parts of the UK were opposed to commercial whaling.[92]

2.2 Regional

2.2.1 OSPAR

The OSPAR Convention came about as a consolidation of two earlier conventions—the Oslo Convention and the Paris Convention. It is the means by which the countries of the North East Atlantic co-operate in protecting their seas. The Convention came into force on 25 March 1998. Initially, the

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[88] Iceland's admittance to IWC passed by one vote. However, Iceland itself was allowed to vote on its admittance, despite not actually being a current party to the IWC, i.e., Iceland effectively voted itself into the IWC, despite not actually being a member.

[89] The legal ramifications of a nation becoming signatory of a treaty but being exempted from a central tenet/component of the treaty (i.e., the moratorium) have caused concern. Moreover, the concept of a nation agreeing to a central tenet/component of a treaty (i.e., the moratorium in this case) and then, after waiting some time, rejoining the treaty with a reservation to the central tenet raises many questions about undermining the effectiveness of international treaties, and the legality of Iceland's actions.

[90] Parsons *et al.*, *supra* note 73, at 128–133.

[91] *See* K. MacLeod *et al.*, *Seasonal Distribution of Minke Whales* (Balaenoptera acutorostrata) *in Relation to Physiography and Prey Off the Isle of Mull, Scotland*, 277 MARINE ECOLOGY PROGRESS SERIES 263, 263–274 (2004) (providing information on minke whale behaviour and ecology during the summer season).

[92] N. J. Scott & E. C. M. Parsons, *A Survey of Public Opinions in Southwest Scotland on Cetacean Conservation Issues*, 15 AQUATIC CONSERVATION 299, 299–312 (2005).

Convention focused on the elimination and prevention of pollution, but it later adopted a new Annex, which extended the competence of OSPAR:

1. To adopt programmes and measures to protect and conserve the ecosystems and biological diversity of the maritime area;
2. To restore, where practicable, marine areas which have been adversely affected; and
3. To control relevant human activities.[93]

One area that the Convention explicitly does not get involved with is the management of fisheries, where action can be taken under the CFP,[94] non-EU Member States fisheries legislation, NEAFC,[95] or the North Atlantic Salmon Commission. Unfortunately, in the context of OSPAR, the management of fisheries also includes the management of marine mammals.[96] Not only does this set a dangerous precedent, but it also fails to include in its list any of the relevant management bodies to which questions would be referred through conventions or instruments (e.g., IWC or ASCOBANS). To date, this does not seem to have excluded cetaceans from any conservation measures developed through OSPAR.

One strand of work OSPAR has undertaken has been the development of a list of threatened and/or declining species and habitats for the region. The list has not been finalised and is based upon nominations by contracting parties and observers. The cetacean species included on the list are the bowhead whale, blue whale, northern right whale, and harbour porpoise.[97] There would seem to be many more cetacean species that could be included on this list, and it is unclear why they are not; for example, fin and sei whales classified by IUCN as Endangered, and many beaked whale species classified by the IUCN as Data Deficient. The purpose of the list is to guide the OSPAR Commission in setting priorities for its further work on the conservation and protection of marine biodiversity. Some cetacean species may miss out on positive measures if they are currently not included on the list.

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[93] OSPAR Comm'n, *Biological Diversity and Ecosystems Strategy*, http://www.ospar.org/content/content.asp?menu=00180302000000_000000_000000 (last visited September 30, 2009).

[94] Common Fisheries Policy.

[95] North East Atlantic Fisheries Commission.

[96] OSPAR Agreement on the Meaning of Certain Concepts in Annex V to the 1992 OSPAR Convention on the Protection and Conservation of the Ecosystems and Biological Diversity of the Maritime Area (1998–15.2) July 22–23, 1998, http://www.ospar.org/v_measures/browse.asp?menu=00750302090125_000002_000000 (last visited September 8, 2009).

[97] OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic, *2004 Initial OSPAR List of Threatened and/or Declining Species and Habitats* (2004–2006), *available at* http://www.ma.ieo.es/deeper/DOCS/Lista%20de%20especies%20OSPAR%2001.pdf (last visited September 30, 2009).

OSPAR Recommendation 2003/3 tasks Contracting Parties with establishing an ecologically coherent network of well-managed Marine Protected Areas (MPAs), which will:

1. Protect, conserve, and restore species, habitats, and ecological processes which have been adversely affected by human activities;
2. Prevent degradation of, and damage to, species, habitats, and ecological processes, following the precautionary principle;
3. Protect and conserve areas that best represent the range of species, habitats, and ecological processes in the maritime area.[98]

To meet this commitment, the UK will need to introduce new legislation in order to identify, designate, and manage OSPAR MPAs.

A further strand to OSPAR's biodiversity work has been the development of ecological quality objectives (EcoQOs)[99] as a means to evaluate the environmental quality of the OSPAR regions. One EcoQO relates to the bycatch of harbour porpoises in the North Sea. Its objective is: "Annual bycatch levels should be reduced to levels below 1.7 percent of the best population estimate." The UK has agreed to act as the lead country for this EcoQO. In order to determine its status, monitoring schemes for harbour porpoise bycatch will need to be established. Despite a similar obligation under the Habitats Directive (see Section 1.2.2)—which would apply to all OSPAR contracting parties with the exception of Norway—the UK and other EU countries have been slow to put this in place. As a result, knowledge of harbour porpoise bycatch is incomplete.

In order to establish bycatch rates, an abundance estimate for the population is also needed. This was last made after broad scale surveys were completed in 1994[100] and 2005. While these go some way to providing the data required, they are not fine-scale enough to highlight local population variation in abundance. Neither do we know the structure of the North Sea harbour porpoise population, so assessment on the impact of bycatch on different parts of the population will not be possible.

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[98] OSPAR Comn'n, *OSPAR Recommendation 2003/3 on a Network of Marine Protected Areas, available at* http://www.ospar.org/content/content.asp?menu=00700302210000_000000_000000 (last visited September 30, 2009).

[99] "Ecological quality" is an expression of the structure and function of the ecological system taking into account natural physiographic, geographic, and climatic factors as well as biological, physical, and chemical conditions including those from human activities.

[100] Hammond *et al*., *supra* note 71.

2.2.2 Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora (Habitats Directive)

The Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora[101] (the so-called Habitats Directive) has its roots in the 1979 Berne Convention. The Directive was adopted by the European Union in May 1992 and came into effect in the UK in 1994.[102] The Directive has two parts that are pertinent to UK cetacean conservation, the first through species protection (see Section 1.2.2.1) and the second through the designation of protected areas (see Section 1.2.2.2).

2.2.2.1 Species Protection

Under the EU Habitats Directive,[103] Member States are required to establish a system of strict protection for the animal species listed in Annex IV, which includes all cetaceans. Member States are required to prohibit:

1. All forms of deliberate capture or killing;
2. Deliberate disturbance of cetaceans, particularly during the period of breeding, rearing, hibernation, and migration; and
3. Deterioration and destruction of "breeding sites" or "resting places."[104]

The term "deliberate" has the same problems associated with it as the term "intentional" in the Wildlife and Countryside Act (see Section 2.3.1). That is, proving that damaging acts were done deliberately can be difficult. The Habitats Directive does, however, have the added advantage that its powers extend 200 nautical miles, as confirmed by a court case in 1999.[105] Whereas, the Wildlife and Countryside Act is only competent within UK territorial waters, which are 12 nautical miles from the coastline (see Section 2.1.1 and 2.3.1. for the distinctions between these areas).[106]

The prohibition on the destruction and deterioration of "breeding sites" and "resting places" sites is difficult to apply to cetaceans because defining such areas for highly mobile species is problematic. For instance, mating behaviour of most species is likely to occur over a very wide area of water. To extrapolate the spirit of the Habitats Directive to cetaceans and other

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[101] Council Directive 92/43/EEC on the Conservation of Natural Habitats of Wild Fauna and Flora, May 21, 1992, O.J. L 206, 22.7.1992 [hereinafter Habitats Directive].

[102] The Habitats Directive was transposed into UK law via The Conservation (Natural Habitats, etc.) Regulations 1994 (CNHRS).

[103] Habitats Directive, *supra* note 101, art. 12.

[104] *Id*. at para 1.

[105] R. v. Sec'y of State for Trade and Industry *ex parte* Greenpeace Ltd., 2 CMLR 94 (2000).

[106] Wildlife and Countryside Act, 1981, c. 69, § 27(5) (UK).

mobile marine species, amending the regulations to prevent the deterioration and destruction of "critical habitat" would be more useful. What exactly "critical habitat" entails and how to measure its degradation might be a point of argument. However, several bodies, such as the International Whaling Commission,[107] are working on definitions of "critical habitat" and indices of habitat degradation that can be used effectively for management purposes.

Indiscriminate disturbance of cetaceans is also prohibited by the Habitats Directive.[108] There are strong arguments that activities that cause wide-ranging disturbance—such as seismic surveys and low and mid-frequency sonar—could be prohibited or restricted under this article. Locally disturbing activities such as anti-predator devices used at fish farm sites might be prohibited or restricted as well.[109]

Furthermore, activities can be exempt if:

1. There is no satisfactory alternative;
2. It is in the interests of public health or safety; or
3. There are overriding socioeconomic matters.[110]

The implications of the Habitats Directive and other legislation with respect to disturbance caused by seismic surveys are discussed in more detail below (see Section 2.3.5).

2.2.2.2 Protected Areas

Under the Habitats Directive, the UK government also has an obligation to designate protected areas for species listed on Annex II as part of a Europe wide ecologically coherent network of sites. For cetaceans, this means that the UK has an obligation to designate Special Areas of Conservation (SACs) for harbour porpoises (*Phocoena phocoena*) and common bottlenose dolphins (*Tursiops truncatus*).

Selection should be based on certain criteria[111] and relevant scientific information. The Directive stipulates for aquatic species which range over wide areas that such sites should only be proposed where there is a clearly identifiable area representing the physical and biological factors essential to

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[107] *See, e.g.*, INT'L WHALING COMM'N, CHAIR'S REPORT OF THE 57TH ANNUAL MEETING, JUNE 20–24, 2005, ULSAN, REPUBLIC OF KOREA (2005), *available at* http://www.iwcoffice.org/_documents/meetings/ulsan/CRREP57.pdf

[108] Habitats Directive, *supra* note 101, art. 15.

[109] Parsons *et al.*, *supra* note 73; J. H. SHRIMPTON & E.C.M. PARSONS, CETACEAN CONSERVATION IN WEST SCOTLAND 85 (2000); Juliet H. Shrimpton, *The impacts of fish-farming on the harbour porpoise* (Phocoena phocoena) (2001) (contract report to the Hebridean Whale and Dolphin Trust).; J. Gordon & S.P. Northridge, *Potential impacts of acoustic deterrent devices on Scottish marine wildlife* (2003) (contract report to Scottish Natural Heritage).

[110] Habitats Directive, *supra* note 101, art. 16.

[111] *Id.* at Annex III (Stage 1).

their life and reproduction.[112] It is not clear what the rationale was for making the achievement of marine SACs more onerous than for terrestrial ones, and given that there is often a paucity of data for marine species, this would not seem to be in the best interests of conservation.

The UK government is obliged to establish the necessary conservation measures (including appropriate management plans if need be) to avoid the deterioration of designated habitat and disturbance of species for which areas have been designated[113] as far as this is relevant to maintaining the species or habitat at a favourable conservation status.[114]

In relation to the management of human activities, if an activity is likely to have a negative effect on the feature for which the site was designated, it can only continue if it is imperative for reasons of overriding public interest, including those of a social or economic nature. If the activity is allowed to proceed and the site is damaged, compensatory measures must be taken, i.e., designating further areas so that overall the coherency of the network is not compromised.[115]

The problem comes with deciding whether an individual activity will have a negative effect on the favourable conservation status of the species or habitat concerned. As far as cetacean SACs are concerned, it is questionable whether prior management decisions have been precautionary enough (see textbox on SACs below).

A further potential problem with SACs for cetaceans is that, to date, those designated have been of a relatively small size. This gives little "buffer" if conditions become less favourable within the SAC due to anthropogenic, oceanographic, or biological factors, such as a change in prey availability. If this occurs, the animals' range could either shift or expand to cover a wider area. Either way, the SAC would afford less protection than intended. This appears to be happening with the Moray Firth bottlenose dolphins, many of which have increased their range and so are spending far less time within the protected area.[116] The reasons for this are unknown at present, but are hypothesised to be due to changes in prey availability.[117] This problem is particularly concerning given the changes in range and distribution likely to occur as a result of climate change.

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[112] *Id.* at art. 4.

[113] *Id.* at art. 6.

[114] Favourable conservation status is when population dynamics data on the species concerned indicate it is maintaining itself on a long-term basis as a viable component of its natural habitats, the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

[115] Habitats Directive, *supra* note 101, art. 6(4).

[116] B. Wilson *et al.*, *Considering the temporal when managing the spatial: A population range expansion impacts protected areas-based management for bottlenose dolphins*. 7 Animal Conservation 1, (2004).

[117] *Id.*

Initially, the UK government took the view that the Habitats Directive only applied to 12 nautical miles, so sites were only proposed for inshore areas. But a 1999 court judgment[118] ruled that this was an incorrect interpretation and that the Directive should be applied out to 200 nautical miles. The Offshore Marine Conservation Regulations duly came into force in August 2007. The offshore environment is not represented well at present by the species and habitats listed under the Habitats Directive as applicable for SAC designation. A review of the Annexes would therefore be useful, and there are further cetacean species whose addition should be seriously considered.

As a result of the predominantly inshore species list, and the lack of data available for the offshore environment, the SAC network remains very underdeveloped beyond a few miles from the coast. No cetacean SACs are currently proposed and we may be missing important areas due to a lack of directed research input. The same could also well be true of inshore areas. The two most well-known bottlenose dolphin populations (in the Moray Firth and Cardigan Bay—see SACs textbox below) have been relatively well studied over a long period of time, but some areas are very understudied. Currently, the UK authorities seem to rely heavily on the "Atlas of Cetacean Distribution in North-West European Waters"[119] to determine the presence and absence of cetaceans in making decisions on the designation of protected areas. This tends to distract from the need to conduct more dedicated research, despite the broad scale and patchy nature of the data upon which the atlas is based. The UK government should, therefore, make funding available for research upon these aforementioned populations—and in the interim should put into effect a precautionary approach—and be positive in making designations that are warranted by the "best available information."

SACS

Bottlenose dolphin

To date, two such areas have been identified as SACs where bottlenose dolphins are the primary features: Cardigan Bay (Wales) and the Moray Firth (Scotland). In addition, bottlenose dolphins were recently added as a secondary feature to the Pen Llŷn a'r Sarnu SAC in the Menai Straits of North Wales. In addition to these areas, there are others within the UK that could warrant designation as SACs for bottlenose dolphins. There are several coastal areas in western Scotland that are inhabited by bottlenose

[118] R.v. The Trade Secretary of State for Trade and Industry *ex parte* Greenpeace Ltd. (1999)
[119] J.B. REID *ET AL.*, ATLAS OF CETACEAN DISTRIBUTION IN NORTH-WEST EUROPEAN WATERS (2003).

dolphins, including the coastal waters of the Isles of Coll, Tiree, Islay, Barra, and the Kintyre peninsula.[120] In England, coastal waters of the southwestern peninsular might also qualify.[121] However, few large scale surveys have been conducted in areas where bottlenose dolphins are known to be present, and previous government funded survey routes have missed the shallow nearshore waters where bottlenose dolphins are commonly sighted.[122] There has been no dedicated program, or government funding, to specifically identify areas around the UK that have populations of bottlenose dolphins (or harbour porpoises).

The stated aims of the Moray Firth SAC are to "avoid deterioration of the habitats of qualifying species (Bottlenose dolphins, *Tursiops truncatus*), or significant disturbance to the qualifying species, thus ensuring that the integrity of the site is maintained and the site makes appropriate contribution to achieving FCS [Favourable Conservation Status] for each of the qualifying features."[123]

That is to say, the objectives of the area are primarily to prevent further habitat degradation, as required under the Habitats Directive,[124] but not to restore the habitat or promote an increase of the species, or remove threats to the health and welfare of the species (other than those causing significant disturbance). With respect to the disturbance objective, theoretically, bottlenose dolphins in the Moray Firth should already be protected from disturbance (assuming this is the result of deliberate or reckless actions), whether significant or not, under the Habitats Directive (see Section 2.2.2.1) and WCA/Nature Conservation (Scotland) Act (see Sections 2.3.1 and 2.3.3).

The stated objectives of the Cardigan Bay SAC are even more vague. These objectives are "to maintain the Cardigan Bay Bottlenose Dolphin

[120] SHRIMPTON & PARSONS, *supra* note 109; K. Grellier & B. Wilson, *Bottlenose dolphins using the Sound of Barra, Scotland*. 29 AQUATIC MAMMALS 378 (2003).

[121] C.J. Wood, *Movement of bottlenose dolphins around the south-west coast of Britain*. 246 J. OF ZOOLOGY 155, (1998).

[122] For example, the majority of survey routes outlined by Hammond *et al.*, *supra* note 471, would miss the habitat of estuarine or coast-hugging bottlenose dolphin groups. The JNCC cetacean distribution atlas (*see* REID *ET AL.*, *supra* note 119) does not even record bottlenose dolphins in the majority of west Scottish waters, despite a local abundance. S*ee* SHRIMPTON & PARSONS, *supra* note 109, for bottlenose dolphin distribution maps of this area.

[123] Moray Firth cSAC Management Group, *The Moray Firth Candidate Special Area of Conservation Management Scheme, Revision 1*, 16 (2003), *available at* http://www.morayfirth-partnership.org/ext/SAC(MSD)/MorayFirthcSAC_MS_Rev1.pdf

[124] Habitats Directive, *supra* note 101, art. 6, ¶ 2.

population at Favourable Conservation Status, as defined in the Habitats Directive,"[125] and "to maintain, within their natural variation, the distribution and abundance of the cSAC's bottlenose dolphins."[126]

It could be argued that we do not know what the natural distribution and abundance of this population is as research has primarily been limited to the past decade during which the animals' numbers and distribution may already have been diminished as the result of harmful anthropogenic activities.

Progress on implementing management measures for both SACs has been very slow, with less than a quarter of management aims completed in the Moray Firth in 2002[127] and less than a fifth in Cardigan Bay by 2003.[128] However, approximately three-quarters had been attempted or initiated.[129]

If anything, activities are being approved that are causing the additional degradation of the SACs. For example, it has been noted that the same authorities responsible for the management of the Cardigan Bay are planning to increase recreational boat use in the SAC.[130] Furthermore, dumping of waste from a shell processing plant has been licensed in the SAC,[131] an action that has been linked to a decrease of dolphin use of that part of the SAC.[132] This situation has led to one researcher to protest: "to permit the large-scale dumping of shell waste in the small area defined to preserve the dolphins risks making the area unfavourable for dolphins, thereby making a mockery of the SAC concept."[133] The research also warns: "if changes in the local environment continue and habitat degradation is permitted, the conservation scheme could be undermined from the outset."[134]

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[125] Favourable conservation status as a goal of the Habitats Directive is outlined in *id.* at art. 2.2.

[126] L. Bates, *A critical evaluation of the management measures for protected areas, for coastal cetaceans in the UK* (2003) (unpublished masters thesis, Bangor University) (on file with Whale and Dolphin Conservation Society, Brookfield House, 38 St. Paul Street, Chippenham, Wiltshire SN15 1LJ, UK).

[127] The Moray Firth Partnership notes that 25% of management aims have been completed. *See* MORAY FIRTH P'SHIP, MORAY FIRTH CANDIDATE SPECIAL AREA OF CONSERVATION (cSAC), ANNUAL PROGRESS REPORT, (2002). Bates notes, "The 2003 Moray Firth review delayed due to a lack of staff, and there are no plans to employ more staff in this sector." Bates, *supra* note 126, at 88.

[128] Cardigan Bay SAC Relevant Authorities Group, *Cardigan Bay Candidate Special Area for Conservation, Action Plan Review 1* (2003), *available at* http://www.cardiganbaysac.org.uk/pdf%20files/RAGactionplanrevision2003.pdf

[129] *Id.*; MORAY FIRTH P'SHIP, *supra* note 127.

[130] T. Bristow, *Changes in coastal site usage by bottlenose dolphins* (Tursiops truncatus) *in Cardigan Bay, Wales,* 30 AQUATIC MAMMALS 398, 398–404 (2004).

[131] *Id.*; T. Bristow *et al.*, *Shore-base monitoring of bottlenose dolphins* (Tursiops truncatus) *by trained volunteers in Cardigan Bay, Wales*, 27 AQUATIC MAMMALS 115, 115–120 (2001).

[132] Bristow, *supra* note 130, at 398–404.

[133] *Id.* at. 403.

[134] *Id.*

The combination of insufficient knowledge of long-term life history, status and trends, vague overarching objectives that we are unable to properly assess success or failure against, and a seeming lack of precautionary decision-making with respect to permitting potentially damaging activities leaves these populations in a precarious position. To quote a recent study on the management of SACs within Britain, "*it appears unlikely that any significant management actions will be proposed or completed until the population has suffered a severe decline upon which, direct action will take priority, potentially repeating the cycle of old conservation strategies, where managers take action too late.*"[135] Such a "closing the barn door after the horse has bolted" approach to management is made even more likely as detection of a decrease in dolphin abundance (as the result of anthropogenic activities) could take a decade to be confirmed by researchers,[136] although concerns that bottlenose dolphins in Cardigan Bay may be in decline, and habitat use diminished, within the SAC area have already been highlighted.[137]

Harbour porpoise

Despite being listed on the Habitats Directive as being a conservation priority species in Europe, and also being considered to be a "vulnerable" species by the IUCN (see Section 2.1.6), and despite support from WDCS and other expert bodies for their designation, the government has not proposed any SACs for porpoises in the UK. Indeed, little movement has been made to postulate potential areas for conservation with the exception of contributions from CCW.[138] The government's claim is that there is insufficient scientific evidence to designate porpoise SACs.[139] Such a stance is in complete opposition to the precautionary principle—which the UK government is obliged to apply in all areas of nature conservation (see Section 2.1.2).

Designation of harbour porpoise SACs is admittedly more problematic than bottlenose dolphins, partially because of less dedicated study, and also because porpoises are more likely to be overlooked. For example, the case for bottlenose dolphins in the Moray Firth rests on the longest-term and most intense cetacean research in the UK, providing a wealth of scientific reports and publications over a period of more than

[135] Bates, *supra* note 126, at 89.
[136] B. Wilson *et al.*, *Estimating size and assessing trends in a coastal bottlenose dolphin population*, 9 ECOLOGICAL APPLICATIONS 288, 288–300 (1999).
[137] Bristow, *supra* note 130, at 398–404.
[138] The Countryside Commission for Wales: http://www.ccw.gov.uk/default.aspx
[139] J.H. SHRIMPTON & E.C.M. PARSONS, CETACEAN CONSERVATION IN WEST SCOTLAND 85 (2000).

a decade.[140] Similarly, the designation for this species in Cardigan Bay was supported by an intense, long-term study.[141] One previous review of cetacean conservation[142] observed that Annex III of the Directive[143] notes that the number of Annex I and II species in a site should be an important consideration when designating protected areas, i.e., the development of SACs for multi-species and multi-habitat protection. In the UK, the concept of such multi-species/habitat designation has been largely ignored.[144]

One potential area for a multi-species/habitat SAC would be the Firth of Lorn, an area already a candidate SAC for reefs and tidal rapids, but also possessing harbour porpoises.[145] Harbour porpoises are known to have been killed by fisheries entanglement in the area, so there is also a conservation need for porpoise protection at that site. Occupancy of the area by porpoises has probably been long-term as well.[146] Encompassing harbour porpoises into the management plan for this SAC would be relatively easy, but this has not been done by the relevant authority (Scottish Natural Heritage): "Harbour porpoise have also been listed under the designation but have been given a global score: category 'D' and are therefore deemed

[140] P.S. Hammond & P.M. Thompson, *Minimum estimate of the number of bottlenose dolphins* (Tursiops truncatus) *in the Moray Firth*, 56 BIOLOGICAL CONSERVATION 79, 79–87 (1991); B. Wilson *et al*., *Habitat use by bottlenose dolphins: Seasonal distribution and stratified movement patterns in the Moray Firth, Scotland*, 34 J. OF APPLIED ECOLOGY 1365, 1365–1374 (1997); B. Wilson *et al*., *supra* note 136, at 288–300; P.M. Thompson *et al*., *Combining power analysis and population viability analysis to compare traditional and precautionary approaches to the conservation of coastal cetaceans*, 14 CONSERVATION BIOLOGY 1253, 1253–1263 (2000); S. Mendes *et al*., *The influence of the tidal cycle and a tidal intrusion front on the spatio-temporal distribution of coastal bottlenose dolphin*, 239 MARINE ECOLOGY PROGRESS SERIES 221, 221–229 (2002); G.D. Hastie *et al*., *Bottlenose dolphins increase breathing synchrony in response to boat traffic*, 19 MARINE MAMMAL SCIENCE 74, 74–84 (2003); G.D. Hastie *et al*., *Distribution of small cetaceans within a candidate Special Area of Conservation; implications for management*, 5 J. OF CETACEAN RES. & MGMT. 261, 261–266 (2003); G.D. Hastie *et al*., *Functional mechanisms underlying cetacean distribution patterns: Hotspots for bottlenose dolphins are linked to foraging*, 144 MARINE BIOLOGY 397, 397–403 (2004).

[141] Bristow *et al.*, *supra* note 131, at 115–120; Bristow, *supra* note 130, at 398–404; T. Bristow & E.I.S. Rees, *Site fidelity and behaviour of bottlenose dolphins* (Tursiops truncatus) *in Cardigan Bay, Wales*, 27 AQUATIC MAMMALS 1, 1–10 (2001); P.R. Gregory & A.A. Rowden, *Behaviour patterns of bottlenose dolphins* (Tursiops truncatus) *relative to tidal state, time of day, and boat traffic, in Cardigan Bay, West Wales*, 27 AQUATIC MAMMALS 105, 105–113 (2001).

[142] SHRIMPTON & PARSONS, *supra* note 139.

[143] Habitats Directive, *supra* note 101, at Annex III (Stages 2, 2(d)).

[144] K. Hughes, *The status of the harbour porpoise* (Phocoena phocoena) *in UK waters* (1998) (unpublished MSc Thesis, University of Greenwich, London).

[145] SHRIMPTON & PARSONS, *supra* note 139, at 85.

[146] This is evidenced by a coastal area in the north of Jura, in the SAC area, called "*Beigh Gleann nam Muc,*" meaning the "Bay of the porpoises."

not worthy for protection due to their purported occurrence not being 'significant.'"[147]

Due to the perceived failure by the government to fulfil its duties under the Habitats Directive, and perceived failure in proposed management of the Firth of Lorn SAC, local environmental groups have submitted official complaints to the European Union.[148]

Another candidate SAC which could potentially encompass harbour porpoises is the Moray Firth bottlenose dolphin SAC.[149] Including management measures in this SAC that protect porpoises would be even easier than for the Firth of Lorn, as there is already cetacean expertise on the management group, and many factors affecting bottlenose dolphins would also affect harbour porpoises. Surveys have shown even higher densities of harbour porpoises than bottlenose dolphins in the Moray Firth.[150]

As mentioned above, the Moray Firth's SAC designation benefits from the long history of research on the resident dolphin population. Elsewhere in the UK, bottlenose dolphins and harbour porpoises have been subject to less direct research, and in some areas, none. Therefore, areas which may be in dire need of protection for these species are currently unable to fulfil the designation criteria of the Habitat Directive due to the lack of directed research input.

2.2.3 European Council Regulation on Bycatch

On 26 April 2004, the EU adopted a new council regulation aimed to reduce levels of cetacean bycatch.[151] The provisions themselves came into effect on 1 July 2004, although some provisions do not require action until 2005 and others have action delayed until 2008. The key actions of this regulation include:

1. Acoustic Deterrent Devices (ADDs or "pingers")—devices used to frighten away cetaceans from fishing nets—are to be attached on fixed fishing gear used by vessels over 12 metres in length in the English Channel, Celtic Sea, and the North Sea;[152]

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[147] Letter from Hebridean Marine Nat'l Park P'ship, to Margot Wallström, EU Comm'r for the Env't (Nov. 3, 2004).

[148] *Id.*

[149] A.R. Whaley & K.P. Robinson, *The southern outer Moray Firth in NE Scotland as a potential safe area candidate for the harbour porpoise* (Phocoena phocoena L.), 18 EUR. RES. ON CETACEANS, *available at* http://www.marineconnection.org/docs/whaley_robinson_2004.pdf

[150] For example, 0.45 schools of bottlenose dolphins per 100 kilometre of survey versus 1.69 schools of harbour porpoises. G.D. Hastie *et al.*, *supra* note 140, at 261–266.

[151] Council Regulation 812/2004, Laying Down Measures Concerning Incidental Catches of Cetaceans in Fisheries and Amending Regulation (EC) No 88/98, 2004 O.J. (L 185) (EC) [hereinafter Measures].

[152] *Id.* at art. 2.

2. Installation of observers on some fishing vessels (>15 metres) to accurately monitor level and distribution of cetacean bycatch;[153]
3. The setting up of pilot projects to monitor;
4. The impact of ADDs and their effectiveness in the fisheries in which they are utilized;[154] and
5. Levels of cetacean bycatch in smaller vessels (<15 metres), with data on bycatch levels in such fisheries to be assessed in 2008 and consideration given to regulations for these fisheries.[155]

However, the regulations have several flaws, including exempting all fishing boats under 12 metres long from having to use ADDs. There are an estimated 6,000 fishing boats less than 12 metres in the UK alone, some of which will be using fishing gear likely to bycatch cetaceans. Installation of these pingers was not required until 2007. The onboard observer also applies only to vessels over 15 metres long, again removing many vessels from monitoring.

The regulation also enacts a gradual phase out of drift net use in the Baltic Sea, an area which has been exempt from the driftnet ban enacted in all other European waters (see Section 2.2.4). The regulation originally called for a driftnet phase-out to be complete by 1 January 2007, mostly due to concerns over severely depleted harbour porpoise populations in the Baltic.[156] However, after amendment, the phase-out was delayed by one year, until 1 January 2008, with the phase-out beginning in 2005.[157]

The UK government is currently transposing these regulations into domestic law. There is, however, nothing preventing the UK government from producing stricter regulations than asked for by the EU. In transcribing these regulations into UK law, the government could remove many of the loopholes and exempted fisheries noted above.

If the UK is serious about significantly lowering the number of dolphin and porpoise deaths in UK waters it should:

1. Introduce mandatory pinger deployment as soon as possible in all UK gillnet and tangle net fisheries, with detailed plans for their introduction and enforcement, and monitoring of their efficacy and impacts;

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[153] *Id.* at art. 4.1.
[154] *Id.* at art. 2.4.
[155] *Id.* at art. 4.2.
[156] P. Berggren *et al.*, *Potential Limits to Anthropogenic Mortality of Harbour Porpoises in the Baltic Region*, 103 BIOLOGICAL CONSERVATION 313 (2002).
[157] Measures, *supra* note 151, art. 9.

2. Address bycatch in inshore fisheries by monitoring gillnet, tangle net use, and bycatch levels in all vessels—even those shorter than 12 metres. After such a monitoring scheme, high bycatch areas and fisheries can be identified, and conservation actions introduced, including mandatory use of pingers and restrictions or temporal/spatial moratoria on fishing activity;
3. Increase research and development of alternative bycatch mitigation measures and more selective fishing gear;
4. Temporarily close any fisheries found to have unsustainable levels of bycatch that cannot be reduced with existing methods until the risk of bycatch can be eliminated; and
5. Actively lobby the EU to adopt similar measures to reduce bycatch in EU waters.

2.2.4 Other Bycatch Regulation

In addition to the above regulation, the UK has other legal obligations and legislation that address the reduction of cetacean bycatch. This includes the European Council Regulation[158] of 7 January 1992 that bans the carriage and use of driftnets greater than 2.5 kilometres on the high seas and in most European waters. There were, however, some important caveats, which include an exemption of the ban for the Baltic Sea and a delay of the ban for albacore tuna fisheries in the NE Atlantic until 1993; although, these were repealed by a second regulation on 29 April 1997.[159]

The driftnet ban was further strengthened by another regulation on 8 June 1998[160] that enacted a complete driftnet ban in European waters (except the Baltic Sea) and the high seas regardless of size to commence on 1 January 2002. The previously mentioned 2004 regulation (see Section 2.2.3)[161] adds the Baltic Sea to the European waters within which driftnets will be banned, although this ban will be phased in and not become a total ban on usage until 2008. Although great in theory, the driftnet ban has been seriously undermined by the re-flagging of vessels and also the deliberate non-compliance—sometimes state sanctioned—of fishing vessels.[162]

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[158] Council Regulation 345/92, Amending, for the 11th Time, Regulation (EEC) No. 3094/86 Laying Down Certain Technical Measures for the Conservation of Fishery Resources, 1992 O.J. (L 42) (EEC).

[159] Council Regulation 894/97, Laying Down Certain Technical Measures for the Conservation of Fishery Resources, 1997 O.J. (L 132) (EC).

[160] Council Regulation 1239/98, Amending Regulation (EC) No 894/97 Laying Down Certain Technical Measures for the Conservation of Fishery Resources, 1998 O.J. (L 171) (EC).

[161] Measures, *supra* note 151.

[162] R. Caddell, *By-Catch Mitigation and the Protection of Cetaceans: Recent Developments in EC Law*, 8 J. INT'L WILDLIFE L. & POL'Y 241 (2005).

Seemingly, in an attempt to address concerns about bycatch in the southwest waters of the UK, in September 2004 the UK government also enacted a ban on pair trawls for sea bass within 12 nautical miles of the UK coastline.

2.2.5 SEA (Strategic Environmental Assessment)

SEA is a process that assesses the impacts of activities on an area-wide, regional, or national scale. It is conducted at this large-scale "strategic level" to provide context and overview. Environmental Impact Assessment (EIA) is then used to examine the environmental impacts associated with an individual project. Both the SEA and EIA need to be used together to provide a comprehensive system of assessment. SEA potentially allows for the analysis of cumulative, in-combination, and transboundary effects which EIA generally does not. However, thinking on how cumulative and in-combination effects are assessed is not very well developed at this time.

The Strategic Environmental Assessment Directive applies to certain "plans and programmes."[163] It requires an "environmental assessment" be carried out for all plans and programmes that are likely to have significant environmental effects, and which are prepared for certain industries, such as fisheries, energy, and transport. They must also be prepared if in view of the likely effect on SACs, they have been determined to require an assessment under the Habitats Directive.[164] Plans and programmes not subject to SEA are those whose sole purpose is for national defence or civil emergency and finance or budget.

It is up to Member States to put in place a screening process to determine whether a plan or programme is likely to have significant environmental effects, but certain criteria (detailed in Annex II of the Directive) must be followed in making this determination. Member States are required to consult authorities which are likely to be concerned by the environmental effects of implementing plans and programmes, as well as the public.[165] The Directive states that the environmental report and opinions expressed during consultation must be taken into account during the preparation of the plan or programme.[166]

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[163] Defined as those prepared and/or adopted by an authority at a national, regional, or local level or which are prepared by an authority for adoption, through a legislative procedure by Parliament or Government, and; those which are required by legislative, regulatory, or administrative provisions. Council Directive 2001/42, The Strategic Environmental Assessment Directive, art. 2, 2001 O.J. (L 197) (EC).

[164] *Id.* at art. 3.

[165] *Id.* at art. 6.

[166] *Id.* at art. 8.

Member States are required to monitor the significant environmental effects of the implementation of plans and programmes in order to identify at an early stage unforeseen adverse effects and to take appropriate remedial action.[167]

To date, only the energy sector has completed SEAs for their activities in the UK. The quality of the SEAs has improved over the years but there are still concerns—at least in respect to cetaceans—that decisions regarding the environmental impacts of an activity are not precautionary enough (see textbox on Noise Pollution and the Precautionary Principle). This is partially a result of the significant existing cetacean data gaps that serve to undermine the strength of the SEA process. A further concern is that the owner of the plan or programme (a responsible authority) is the body charged with carrying out an assessment of whether an SEA is required, the preparation of the environment report, and the monitoring the environmental effects of the implementation of plans or programmes. This raises issues of impartiality and could also potentially undermine the strength of the SEA process and decisions. Consideration should be given to the creation of a separate agency or unit with responsibility for screening and quality control, if not for the preparation of the report itself and subsequent monitoring.

2.3 National[168]

2.3.1 Wildlife and Countryside Act (WCA)

2.3.1.1. Species Protection

Like the Habitats Directive, the 1981 Wildlife and Countryside Act (WCA) was enacted as a response to the UK's obligations under the 1979 Bern Convention. Cetaceans were listed in Appendix II and III of the Berne Convention,[169] and as such, the UK government became obliged to provide legal protective coverage for these species. Part I of the WCA is of greatest relevance to cetaceans.[170] It provides legal protection for species listed in

[167] *Id.* at art. 10.

[168] Note added in proof: this review was completed before the UK had passed its new Marine Acts: The Marine and Coastal Access Bill received Royal Assent on 12 November 2009 and its text can be found here: http://www.opsi.gov.uk/acts/acts2009/pdf/ukpga_20090023_en.pdf. The Act covers England and Wales and has implications for the conservation of cetaceans including the development of marine conservation zones. How useful the Act will prove to be in the context of cetacean conservation remains to be seen. At the time of writing, similar legislation for Scotland is progressing through the Scottish parliament.

[169] The Bern Convention, *supra* note 60, at apps. II, III.

[170] Notably, *id.* §§ 9–12.

Schedule V of the Act, which includes cetaceans. As a result, under the WCA it is illegal to:

1. Intentionally kill, take,[171] or injure cetaceans;
2. Intentionally damage, destroy, or obstruct access to any structure or place which cetaceans use for shelter and protection;
3. Intentionally disturb a cetacean whilst it is occupying such a structure or place; or
4. Sell, possess, deal, transport, or advertise for the purpose of sale any live, dead, part of, or anything derived from a cetacean.

However, there is a loophole. If the killing or disturbing of cetaceans is "the incidental result of a lawful operation and could not reasonably be avoided,"[172] then the perpetrator is exempt. Given that arguably most disturbance and mortality of cetaceans in UK waters occurs incidentally to lawful operations, such as fishing and oil and gas exploration, this is a serious gap in the protective regime.

A defense should be available for truly accidental acts, but some lawful operations, like fisheries bycatch, are causing the regular and even predictable killing or disturbance of protected species. If protected species status is to mean anything, the legislation and management structures should provide a mechanism through which to manage and lessen negative impacts on protected species from lawful operations. Such a process should involve the assessment of any potential effects of operations on protected species, followed by the development of mitigation measures (technical, restrictive, or prohibitive) that attempt to reduce or eliminate any impact. Abiding by these measures should be a condition of the consent for the operations, and enforcement arrangements should also be considered. Ongoing monitoring of the impacts and effectiveness of any mitigation measures should be employed to enable feedback into the system and the instigation of further measures if necessary.

Another problem with the WCA was the requirement that illegal acts must have been intentional for charges to be brought. This seriously hampered the legislation because proving that acts were intentional was difficult in court. This was, in part, rectified by the Countryside and Rights of Way (CROW) Act, as detailed below (see Section 2.3.2), but intent must still be proved in relation to the killing, taking, and injuring of protected species. The situation has been more fully rectified in Scotland via the Nature Conservation (Scotland) Act (see Section 2.3.3).

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[171] "Take" here means "capture" rather than the legal definition of "take" as outlined in the U.S. Marine Mammal Protection Act.

[172] The Bern Convention, *supra* note 60, § 10, part 3(c).

Protection of cetaceans and other marine species from disturbance is also hampered by the wording of the WCA. While authoring the act, law makers were primarily concerned with reducing disturbance to birds and terrestrial wildlife. Compared to terrestrial species, it is difficult to define discrete areas that marine species use for shelter and protection, and while damage to a terrestrial habitat may be very obvious, it may not be so for a marine location. Subsequent amendments to the WCA have improved the applicability of this provision for cetaceans (see Sections 2.3.2 and 2.3.3) by removing the requirement that the disturbance take place in a particular location.

A present flaw of the WCA is the lack of identified competent bodies that are able to prosecute under the law. Typically, wildlife crimes in the UK are prosecuted by the UK police force—often cases are brought by wildlife crime officers who specialize in wildlife crime issues. Considering that most police officers are land-based, and that most areas where cetaceans abound are remote coastal areas where there may be only a small police presence, monitoring for illegal activities and enforcing protective law for marine species are problematic.[173]

Finally, the WCA only applies to UK territorial water (out to 12 nautical miles from the coastline), which leaves a large area of sea (12–200 nautical miles) and the cetaceans in it unprotected by the principal piece of national protective legislation.

2.3.1.2 Site Protection[174]

The WCA provides for the designation of Marine Nature Reserves (MNRs), which may include any land covered either continuously or intermittently by tidal waters or parts of the sea out to a distance of three nautical miles.[175] Since 1981, only two MNRs have been designated in England and Wales,[176] and the MNR concept has been widely accepted as a failure. As well as being geographically very limited—only extending to three nautical miles—"procedures are regarded as complex and unwieldy, and in need of an administrative overhaul."[177] There must be a consensus from all affected bodies before a site can be designated.

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[173] M.P. SIMMONDS, CHASING DOLPHINS! (2000).WDCS Report.

[174] Note added in proof: The Marine and Coastal Access Act 2009 allows the creation of Marine Conservation Zones and these should form a network. (This new development is not included in this review.)

[175] Wildlife and Countryside Act, 1981, ch. 69, § 36(1) (Eng.).

[176] Skomer Island and Lundy Island.

[177] DEP'T OF ENV'T, TRANSP., & REGIONS (DETR), SITES OF SPECIAL SCIENTIFIC INTEREST: BETTER PROTECTION AND MANAGEMENT, A CONSULTATION DOCUMENT FOR ENGLAND AND WALES (1998).

2.3.2 Countryside and Rights of Way (CROW) Act 2000

Under the WCA, legal authorities found it difficult to prove "intent" in cases where cetaceans were disturbed. In 2000, in England and Wales, the WCA was amended by the CROW Act to make it illegal to intentionally *or recklessly* disturb a cetacean.[178] However, killing, taking, or injuring cetaceans must still be proven to be intentional. The CROW Act also removed the limitation of disturbance to particular locations. Disturbance of cetaceans anywhere became an illegal act.

However, even with these changes—and despite many anecdotal reports of cetaceans being disturbed—no one has been prosecuted in the UK under the WCA or CROW for disturbing a cetacean.[179] Enforcers and the courts have had difficulty in determining if a disturbance has occurred. Also, the UK's terrestrially focused police force[180] is not well placed to deal with offences at sea[181] (see textbox on Boat Disturbance below).

The CROW Act introduced the possibility of non-police "wildlife inspectors" with powers to investigate wildlife crimes.[182] Theoretically, these inspectors could investigate instances of cetacean disturbance. However, as currently written, the powers and remit of wildlife inspectors have a terrestrial focus. Government departments with a marine remit, such as the coastguard and fisheries protection bodies, would be better choices for dealing with marine wildlife crime. Having wildlife inspectors with cetacean expertise (e.g., government officers dealing with marine mammal issues or even members of marine mammal NGOs) would be particularly useful because cetacean behaviour could more accurately be identified, and disturbing activities could be quantified. An amendment to the WCA that provides a duty to coordinate efforts and outlines marine-competent authorities for the enforcement of wildlife crime and the remit, powers, and procedures of such authorities, would do much to make wildlife law more effective for marine species such as cetaceans.

2.3.3 Nature Conservation (Scotland) Act 2004

Nearly four years after the CROW Act amended the WCA for England and Wales, the Nature Conservation (Scotland) Act amended the WCA for Scotland. The act allows the prosecution of anyone who intentionally or "recklessly" kills, injures, or takes a cetacean or who intentionally "or

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[178] The Countryside and Rights of Way Act, 2004, sched. 12(5) (Eng.).

[179] Although, a case was brought before the courts in Scotland under the Habitats Directive regulations in 2004 (see Section 2.2.2.1).

[180] To date, no non-police "wildlife inspectors" have been designated by the Secretary of State with respect to the marine environment. Wildlife and Countryside Act, *supra* note 175, at ch. 69, § 36, sched. 12(8).

[181] SIMMONDS, *supra* note 173.

[182] The Countryside and Rights of Way Act, *supra* note 178, at sched. 12(8).

recklessly" disturbs[183] "or harasses"[184] a cetacean. It should be noted that what is meant by harassment or disturbance is never defined and is subject to judicial interpretation.[185]

The loophole for an "incidental result of a lawful operation [that] could not reasonably be avoided"[186] was closed slightly by the addition of a few caveats. From the passing of the Nature Conservation (Scotland) Act, lawful activities that caused harm to protected species incidentally would only be exempt from prosecution if the body conducting the activity:

> (b)(i) took reasonable precautions for the purpose of avoiding carrying out the unlawful act; or
>
> (ii) did not foresee, and could not reasonably have foreseen, that the unlawful act would be an incidental result of the carrying out of the lawful operation or other activity; and
>
> (c) that the person who carried out the unlawful act took, immediately upon the consequence of that act becoming apparent to the person, such steps as were reasonably practicable in the circumstances to minimise the damage or disturbance to the wild animal . . . .[187]

The changes put some responsibility on lawful operators to try to avoid or mitigate disturbance, death, or injury, and if such occurs, to take action to minimise (but it should be noted they are not required to stop) the impact. Interpretation of some of the exemptions could be quite broad; for example, minimal or token mitigation measures might be interpreted as "reasonable precautions."

In addition, an amendment was added to the act that required Scottish Natural Heritage (SNH)[188] to produce a Scottish Marine Wildlife Watching Code.[189] The code was to outline activities that might disturb marine wildlife,

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[183] Nature Conservation (Scotland) Act, 2004, sched. 6(8)(5).

[184] *Id.* at sched. 6(8)(6).

[185] The Oxford English dictionary defines "disturbance'" as

> 1. interrupt the sleep, relaxation or privacy of. 2. interfere with the normal arrangement or functioning of. 3. make anxious." This could be interpreted as actions that cause a change in the normal behaviour of cetaceans and/or interrupts resting behaviour would be causing disturbance. Activities that increase "stress" could theoretically also be disturbing using this definition.

"Harassment" is defined as

> 1. torment by subjecting them to constant interference or bullying. 2. make repeated small-scale attacks on (an enemy) in order to wear down resistance. As a definition, "harassment" would be more difficult to utilize in a legal/prosecutorial setting.

OXFORD ENGLISH DICTIONARY (2d ed. 2009).

[186] Wildlife and Countryside Act, *supra* note 175, at ch. 69, § 10(3)(c).

[187] Nature Conservation (Scotland) Act, 2004, *supra* note 183, at sched. 6(9)(b).

[188] SNH is a "Quasi-Autonomous Governmental Organization (QUANGO) and is the competent authority for nature conservation in Scotland." *Id.* § 52.

[189] *Id.* § 51.

circumstances under which marine wildlife should be approached, and ways to view marine wildlife "with minimum disturbance."[190] The amendment required SNH to consult with persons "appearing to them to have an interest in marine wildlife watching and other persons as it thinks fit"[191] when creating the code, or subsequent revisions to it, and to both publish and publicise the code.[192] However, the amendment did not require use or legal enforcement of the code. But, if someone is not following the code and is believed to be causing disturbance as a result, it may be possible to prosecute for intentional or reckless disturbance using non-compliance with the code as evidence.

BOAT DISTURBANCE

Human interaction with marine wildlife, particularly marine mammals, is increasing through a growing ecotourism industry and increasing recreational boat use. Approaching cetaceans in an insensitive way can cause stress and, at worst, serious physical injury. Many dolphins around the UK can be seen with scars on their backs or dorsal fins from incidents with boat propellers. This breakout box looks at this issue in more detail.

The lack of effectiveness of UK legislation for dealing with cetacean disturbance and harassment was illustrated by a study conducted in southwest England.[193] In this region alone, over a ten-year period (including the first few years after the CROW Act amendments to the WCA) 44 incidents of dolphin disturbance/harassment from motorboats, powerboats, and jetskis were reported.[194] When officials responsible for wildlife protection and management were interviewed for the study, many noted that few harassment incidents were reported to the authorities. Many officials were of the opinion that this was because a "lack of awareness of the legislation had led to confusion amongst agencies and individuals as to who to report potential instances [of disturbance/harassment] to."[195]

The study also pointed out that gathering evidence of disturbance/harassment in the marine environment is problematic, as noted above (see Section 2.3.1.1). Another issue, related to enforcement is that "there is a lack of evidential data and diversity of opinions as to what constitutes harassment."[196] To better enforce regulation, it was suggested that:

[190] *Id.* § 51(2)(a)–(c).
[191] *Id.* § 51(5).
[192] *Id.* § 51(6)(a) & (b).
[193] C. Kelly *et al.*, *Management of marine wildlife disturbance*, 47 OCEAN & COASTAL MGMT. 1, 1–19 (2004).
[194] Harassing/disturbing vehicles included motorboats, powerboats, and jetskis. *Id*.
[195] *Id.* at 10.
[196] *Id.*

1. Enforcement should be in partnership with agencies working on the marine environment;
2. More information is needed on amounts of vessel traffic and the behavioural responses of marine wildlife to these vessels; and
3. Statutory agency, NGO, and other staff need to be more fully briefed on their role in providing information on disturbance/harassment and need to work in partnership with the enforcement agencies.[197]

The study also interviewed and surveyed a broad selection of marine stakeholders to ascertain their awareness and opinions of regulations that protect cetaceans and other marine wildlife. The researchers found that over one-half of the respondents (52 percent) stated that they had witnessed a potential incident of marine wildlife disturbance, and 72 percent of the respondents were aware that there was legislation to protect species such as cetaceans, but very few could state any specific provisions of the legislation or exactly what species were covered.[198] When asked to whom they would most likely report incidents of disturbance/harassment to, the two most common responses were[199] the Coastguard[200] and the Royal Society for the Prevention of Cruelty to Animals (RSPCA).[201]

The majority of the marine stakeholders that were interviewed considered that incidences of cetacean harassment were increasing, and in terms of practically managing the impacts of vessel traffic on marine species, the most popular options were education, codes of conduct, and distance/approach limits.[202] Eighty percent had seen codes of conduct for minimising boat traffic and most thought them useful, although it was noted that there are perhaps too many different codes available, a comment that is relevant to the code of conduct issues in Scotland.

In conclusion, the researchers listed three main issues that, in their opinion, were preventing effective protection of cetaceans and other marine wildlife in England, despite regulations and the CROW Act amendments. These issues were:[203]

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[197] *Id.*

[198] *Id.*

[199] *Id.*

[200] The coastguard is not the appropriate authority as wildlife law enforcement is carried out by police wildlife liaison officers.

[201] The RSPCA is a non-governmental organization and does not have the authority to enforce and prosecute wildlife crime cases. It is interesting to note that although the RSPCA was perceived to be a main authority to report disturbance/harassment cases to, author C. Kelly noted that the RSPCA had no records of anyone every reporting an incident of marine wildlife harassment to them.

[202] Kelly *et al.*, *supra* note 193, at 10.

[203] *Id.*

1. A lack of awareness of wildlife protection legislation;
2. A lack of disturbance/harassment incident reporting; and
3. A lack of coordination and consensus among agencies and conservation practitioners.

To this we would now add:

4. A clear understanding in law (and also in science) of what constitutes disturbance (or harassment).

One recommendation to improve the situation is the introduction of a widely publicised protocol for the reporting of wildlife crime. Clear information on who to report crimes to (and what crimes might entail) could be displayed on posters in key areas; for example, posters and flyers for cetaceans at marinas or chandlery shops. Reports of incidents, along with information and figures on successful and unsuccessful prosecutions could be kept as part of a national wildlife crime reporting system in a centrally co-ordinated database. Over time, this will enable the identification of problem areas and the focussing of resources for increased efficiency.

Another recommendation, which was supported by over half of the respondents in the above study, is the introduction of "no-go" zones as a potentially effective means of managing boat-based disturbance.[204] This is a protective measure that has yet to be considered in the UK. It is suggested that pilot "no-go" zones, or alternatively, speed restriction zones, could be introduced in areas where boat traffic-related death, injury, disturbance, and harassment are a problem for marine protected species (including cetaceans) in the UK, with appropriate accompanying enforcement provisions and a monitoring scheme to determine their effectiveness. This could be introduced by giving bylaw making powers to competent authorities to create inshore zones for the protection of wildlife.

Finally, the development of a consolidated code of conduct with statutory backing is needed to set the standard and provide guidance to both leisure and commercial vessels on how to behave to minimise disturbances to marine wildlife. The requirement to develop such a code was recently introduced to Scotland via the Nature Conservation Act of 2004. This amendment was introduced, at least in part, to address concerns about cetacean-watching activities, both commercial and leisure, in the Moray Firth. In this area, there is an active bottlenose dolphin-watching industry,

[204] *Id.*

but there have been concerns about the impacts of boat traffic in the region on the animals for some years.[205] In an attempt to address these concerns, the Dolphin Awareness Initiative was launched in 1993, followed in 1995 by the Dolphin Space Programme (DSP)—a programme which developed a general code of conduct for all boat users, together with a voluntary accreditation scheme for operators, requiring the latter to use certain agreed routes and behave in certain ways, for example, not stopping to view the animals.[206] A single project officer was employed to initiate the scheme, but this position was only temporary and expired after 1997. However, a new DSP officer was appointed early in 2005. It has been noted that when anonymous observers monitored dolphin-watching boats after the loss of the original DSP project officer, 50 percent of sampled tours contravened the DSP code of conduct in the first year of study, and 80 per cent contravened the code in the second year.[207]

In a survey of whale-watching tour operators from throughout Scotland, 86 per cent replied that they followed a code of conduct.[208] However, codes of conduct used by operators vary greatly in the advice they give, with some far more restrictive than others, and are still just voluntary guidelines. The most popular codes of conduct were developed by a marine tourism association and a local environmental group.[209] Few had even heard of previous whale-watching guidelines produced by the government, and none of the operators used these, which demonstrates that officials made little attempt to publicise and encourage compliance with previous government produced codes, and/or there may have been resistance to a "top-down" approach to controlling whale-watching activities.[210]

There are currently more than ten different voluntary codes of conduct or guidelines for marine mammal watching in Scotland,[211] and studies

[205] *See, e.g.,* V.M. Janik & P.M. Thompson, *Diving Responses of Bottlenose Dolphins to Boat Traffic in the Moray Firth, N.E. Scotland*. 12 MARINE MAMMAL SCI. 597, 597–602 (1996); H. Arnold, *The Dolphin Space Programme—The Development of an Accreditation Scheme for Dolphin Watching Boats in the Moray Firth* (1997) (a report for Scottish Wildlife Trust and Scottish Natural Heritage, Inverness); G.D. Hastie *et al.*, *Bottlenose Dolphins Increase Breathing Synchrony in Response to Boat Traffic.* 19 MARINE MAMMAL SCI. 74, 74–84 (2003).

[206] *See* Arnold, *supra* note 205.

[207] M. Simmonds *et al*., *The Management of Whale (and Dolphin) Watching in the UK* (2004) (paper presented to the Sci. Comm. at the 56th Meeting of the Int'l Whaling Comm'n June 29, 2004–July 10 2004).

[208] E.C.M. Parsons & A. Woods-Ballard, *Acceptance of Voluntary Whale-Watching Codes of Conduct in West Scotland: The Effectiveness of Governmental Versus Industry-Led Guidelines*, 6 CURRENT ISSUES IN TOURISM 172, 172–182 (2003).

[209] *Id.*

[210] *Id.*

[211] *Id.*

elsewhere have indicated that multiple codes can lead to confusion and ineffective management.[212] However, the development of an "official" code of conduct sets Scotland above the rest and should act as a guide to enforcers and make the prosecution of cetacean disturbance easier by outlining actions that could cause disturbance. Those found undertaking such actions could feasibly be seen as committing an offence. Leisure crafts are also a source of boat-based disturbance and typically are regarded as a more difficult sector to engage with and educate than commercial operators, in part because they are a much larger, widespread group. They also do not have an obvious economic interest in ensuring the long-term survival of a cetacean population. The Scottish code is currently being developed and will hopefully be a strong, clear, and concise guide. A similar provision needs to be introduced for England, Wales, and Northern Ireland.

Whale-watching codes of conduct in Europe are often voluntary, relying on people's co-operation, as opposed to elsewhere in the world where regulations are often enshrined in legislation.[213] However, enshrinement in legislation is also no guarantee of compliance, mainly because legislation is not backed up by enforcement.[214] An effective way of promoting compliance with laws or voluntary regulations might be the instigation of several marine wildlife tourism officer positions, similar to the DSP officer, to be located in areas of high marine tourism activity, or areas with particularly vulnerable marine populations. The functions of such officers[215] could include:

1. Helping to improve the educational materials available to tourists taking part in whale-watching activities, including helping tour operators gain grants for educational work and materials;
2. Developing and organising training courses for operators (for example, courses on education/interpretation techniques and methods);
3. Developing schemes and protocols through which tour operators could assist in monitoring marine mammal (and other key marine species) populations (such as sightings report schemes); and

[212] Kelly *et al.*, *supra* note 193, at 10.

[213] B. Garrod & D.A. Fennel, *An Analysis of Whale-Watching Codes of Conduct*, 3 ANNALS OF TOURISM RES. 334, 334–352 (2003).

[214] *See, e.g.,* C. Scarpaci *et al*., *Compliance with Regulations by* "*Swim-with-Dolphins*" *Operations in Port Phillip Bay, Victoria, Australia*, 31 ENVT'L MGMT. 342, 342–347 (2003).

[215] Based on suggestions presented in Simmonds *et al*., *supra* note 207.

4. Working in tandem and cooperation with relevant authorities to ensure that if cases of disturbance occur, or laws are broken, then appropriate measures are taken and evidence collected so that an effective prosecution can be brought against the offender.

2.3.4 The Conservation (Natural Habitats, etc.) Regulations 1994

The Habitats Directive was translated into UK law via the Conservation (Natural Habitats, etc.) Regulations (CNHRs) in 1994, and certain intents of the original Habitats Directive seem to have been weakened in the process. The species protection provisions included in the Habitats Directive (see Section 2.2.2.1) are accompanied in the CNHRs under the defence that activities can be exempt if they were the "incidental result of a lawful operation and could not reasonably have been avoided," even though the Habitats Directive contained no mention of such exemptions. This is the same defence that is included in the WCA (see Section 2.3.1). A recent Advocate General's opinion[216] found that this defence was incompatible with the Habitats Directive. If the final judgement upholds this view, we would hope to see the defence removed, at least in relation to the CNHRs.

The Habitats Directive requires EU member states to "establish a system to monitor incidental capture and killing" of cetaceans[217] and to instigate "further research or conservation measures as required to ensure that incidental capture and killing do not have a negative impact."[218] Unfortunately, there is currently no legal basis within the UK for the required monitoring system because mention of such a system was omitted from the CNHRs, which enshrined the Habitats Directive into UK law. This also means that the requirement for research and conservation measures is effectively negated since there is no statutory monitoring or evaluation scheme upon which to build recommendations for further research or conservation. The regulations may be amended to include provisions for this monitoring system[219] in the near future; however, to be effective, the amendment will need to clearly outline what is meant by "a monitoring system" and will need to clearly outline a process through which further research work can be proposed, and more importantly, funded.

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[216] Case C-6/04, Opinion of Advocate Gen. Kokott delivered on June 9, 2005, Comm'n of the Eur. Comms. v. U.K. and N. Ir., Failure of a Member State to fulfill obligations—Directive 92/43/EEC—Conservation of natural habitats—Wild fauna and flora, 2005 E.C.J. CELEX LEXIS 553.

[217] Habitats Directive, *supra* note 101, art. 12, ¶ 1.

[218] *Id.*

[219] Commission Regulation 1843/2007, The Conservation (Natural Habitats, etc.) (Amendment) 12 .

It should be noted that amending the CNHRs to introduce a statutory monitoring scheme for incidental cetacean capture/mortality—although primarily for monitoring fisheries bycatch—could, and should monitor other forms of harm. Such a monitoring scheme should be part of a wider programme of assessment and mitigation of negative impacts on protected species from lawful operation, as discussed in Section 2.3.1.1.

2.3.5 Regulation of Offshore Oil Industry Activities

In 2001, regulations were enacted that were intended by the relevant authorities to implement the Habitats Directive for all oil and gas activities within UK waters.[220] These regulations provided that any company wishing to carry out a seismic survey on the UK continental shelf area (UKCS) must apply for permission from the UK Department of Trade and Industry (DTI), which then consults with the Joint Nature Conservation Committee (JNCC) on the application.[221] If permission is granted, the company conducting seismic surveys is required to follow a set of guidelines produced by the JNCC that are intended to minimise disturbance to cetaceans.[222] The guidelines offer suggestions as to what oil exploration companies should do during the planning stage of the surveys and during the surveys themselves, and they define what information about the survey and marine mammals sighted should be submitted to the JNCC after the survey's completion. The government has acknowledged that these seismic survey guidelines "[are] largely based on "common sense" measures and it is difficult to establish whether they work and/or could be made more effective."[223]

2.3.6 UK Biodiversity Action Plans

In 1994, and in response to the UK's commitment under the Convention on Biological Diversity to develop "plans or programmes for the conservation and sustainable use of biological diversity,"[224] (see Section 2.1.2), the UK Government initiated the development of a series of national conservation action plans for species and habitats. Habitat Action Plans (HAPs) have been developed for a variety of marine habitats, including saline lagoons, mudflats,

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[220] Commission Regulation 1754/2001, The Offshore Petroleum Activities (Conservation of Habitats) Regulations § 3.

[221] The scientific advisory body to the UK government for UK wildlife issues.

[222] Joint Nature Conservation Comm'n, Seismic Survey, http://www.jncc.gov.uk/page-1534#1785#1785 (last visited November 13, 2009).

[223] DEPT. TRADE & IND., STRATEGIC ENVIRONMENTAL ASSESSMENT OF PARTS OF THE CENTRAL AND SOUTHERN NORTH SEA SEA 156 (2002), *available at* http://www.offshore-sea.org.uk/consultations/SEA_3/SEA3_Assessment_Document_Rev1_W.pdf. and see also E.C.M. Parsons *et al*., *A critique of the UK's JNCC seismic survey guidelines for minimising acoustic disturbance to marine mammals: Best practise?* 58 MARINE POLLUT. BULL., 643–651.

[224] CBD, *supra* note 14, art. 6 (a).

seagrass beds, tidal rapids, oceanic seas, maerl beds, and reefs of *Lophelia pertusa, Sabellaria alveolata*, *S. spinulosa*, and serpulids.

Marine Species Action Plans (SAPs) have also been developed for various marine species, including sea squirts, sea anemones, elasmobranchs, and sea turtles among others. Cetaceans are currently provided for nationally by "grouped" species action plans for baleen whales,[225] toothed whales,[226] and small dolphins.[227] The harbour porpoise is also the focus of a single species action plan.[228]

The UK BAP process as a whole has undoubtedly progressed biodiversity conservation in the UK by creating a mechanism that brings together all the sectors and levels involved—from high-level policy to "on the ground" action—and by providing a means to consider how we are to conserve biodiversity in the wider environment. Progress on marine habitats and species plans, however, has been much slower and more limited than on land, and the cetacean plans are no exception. Targets have been missed, many proposed actions have not progressed, and the good quality data essential to feed into the process continues to be absent.

2.3.6.1 Targets and Objectives

The aims of the cetacean plans, in the short-term, are to maintain the range and abundance of the listed cetaceans. As stated, the long-term[229] goals of these plans are to:

1. Increase the range of dolphin populations;
2. Increase baleen whale population sizes and ranges;
3. Increase toothed whale abundance "by seeking to optimise conditions enabling their populations to increase"; and
4. For the harbour porpoise, to "ensure that no anthropogenic factors inhibit a return to waters that it previously occupied."

For the toothed whales, the implication is that numbers will be increased by protecting and/or restoring toothed whale habitat and, therefore, increase

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[225] UK Biodiversity Group, *Maritime species and habitats,* in 5 TRANCHE 2 ACTION PLANS 1, 23 (1999), *available at* http://www.ukbap.org.uk/UKPlans.aspx?ID=337 [hereinafter *Baleen whale action plan*].

[226] UK Biodiversity Group, *Maritime species and habitats,* in 5 TRANCHE 2 ACTION PLANS 1, 31 (1999), *available at* http://www.ukbap.org.uk/UKPlans.aspx?ID=337 [hereinafter *Toothed whale action plan*].

[227] UK Biodiversity Group, *Maritime species and habitats,* in 5 TRANCHE 2 ACTION PLANS 1, 27 (1999), *available at* http://www.ukbap.org.uk/UKPlans.aspx?ID=337 [hereinafter *Small dolphin action plan*].

[228] UK Biodiversity Group, *Maritime species and habitats,* in 5 TRANCHE 2 ACTION PLANS 1, 21 (1999), *available at* http://www.ukbap.org.uk/UKPlans.aspx?ID=337 [hereinafter *Harbour porpoise action plan*].

[229] For baleen whales, "long-term" is stated as being "over the next 20 years," a period which, since the inception of these action plans, is nearly half over.

the carrying capacity of said habitat. The long-term goals for the harbour porpoise and dolphin do not call for an increase in numbers of animals, which is odd considering that one of the reasons that harbour porpoise are considered to be vulnerable and a conservation priority is the unsustainable levels of fisheries mortality[230] and resulting loss of animals.

2.3.6.2 Actions

Various conservation actions are proposed by the national BAPs and typically involve trying to reduce, mitigate, assess, or monitor a variety of threats. Several actions also propose investigating, evaluating, or instigating marine protected areas, or conducting research to investigate habitats. Progress in attempting or completing these actions has been slow, sometimes seemingly because of a lack of will or resources on the part of the actioning body, whilst on other occasions, it appears to be due to inappropriate bodies tasked to complete the action. Inconsistencies between the plans with respect to which actions are listed and which bodies are tasked to take these on also seems problematic. Specific examples of failures and inconsistencies within the national BAPs are discussed below.

2.3.6.3 Actions not achieved/Targets missed

There has been notable failure by the national BAPs to achieve targets when there has been a target date for fulfilment. For example, introduction of "codes of practice"[231] or encouragement to use, and promotion of, codes of conduct to minimize disturbance through whale or dolphin-watching is mentioned in several action plans.[232] For several of the plans,[233] it is stated that this should be done by noted government bodies[234] by 2001. Whereas some authorities have done this in the time period stated,[235] most have not.

By 2001, the baleen whale grouped plan had required that government bodies:[236] "[r]eview DETR guidelines for minimising disturbance to cetaceans

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[230] N.J.C. Tregenza *et al.*, *Harbour porpoise* Phocoena phocoena L. *Bycatch in Set Gill Mets in the Celtic Sea*, 54 ICES J. OF MARINE SCI. 896, 896–904 (1997); N.J.C. Tregenza *et al.*, *Common dolphin* Delphinus delphis L.*, bycatch in bottom set gill nets in the Celtic Sea*, 47 REP. OF INT'L WHALING COMM'N 835, 835–839 (1997).

[231] *Harbour porpoise action plan*, *supra* note 228 (noting the need to "[c]ontinue to introduce agreed codes of conduct to reduce disturbance from acoustic sources and physical pressures").

[232] *See, e.g.*, *Small dolphin action plan*, *supra* note 227; *Toothed whale action plan*, *supra* note 226.

[233] *Id.*

[234] Specifically the Countryside Council for Wales (CCW), English Nature (EN), Scottish Natural Heritage (SNH), the Department for Environment, Transport and Regions (DETR—now the Department for Food, Environment and Rural Affairs: DEFRA), Department for Culture, Media and Sport (DCMS), and the Environment and Heritage Service (EHS—an agency within the Department of the Environment for Northern Ireland [DoE NI]).

[235] For example, Scottish Natural Heritage had given grant aid to fund the production and active distribution of several codes of conduct prior to the 2001 deadline.

[236] CCW, DETR, EHS, EN, JNCC, SNH and the Natural Environment Research Council (NERC).

from whale watching operations and from recreation at sea." Although this was in effect done,[237] it was done by an NGO and without governmental funding.

Returning to marine protected areas, the problems of their designation have been noted previously (see Section 2.2.2.2); in particular, the difficulty of designating areas under present criteria and lack of action to identify or designate harbour porpoise SACs by the UK government. However, these very two issues are denoted as actions under the UK harbour porpoise BAP: "[e]xpand research on the areas frequented by harbour porpoise to identify waters which may qualify for further protection as SACs or Marine Nature Reserves"; and "[r]eview existing UK marine site protection to determine how it might be improved. If appropriate, introduce additional protection and emergency designation to benefit the species." For dolphins, the BAPs note the need to "establish marine protected areas for small dolphins which take into account the likelihood of human activities that would be harmful to cetaceans living there."

The action notes that this should be done by 2004 by the noted government bodies.[238] This has arguably been partly accomplished by the designation of candidate SACs for bottlenose dolphins in Cardigan Bay and the Moray Firth, for Wales and Scotland (see Section 2.2.2.2 and textbox on SACs). But there has been no such designation for Northern Ireland, and the candidate SACs only protect bottlenose dolphins, just one species out of the many intended to be protected by the "small dolphins grouped plan." Another action in the dolphin grouped plan is to:

> Give consideration to the feasibility of marine protected areas for dolphins in the context of the proposed DETR working group on marine protected areas. These should include consideration of the importance of the area for calving, as a nursery ground and for feeding.

Again, there has been no serious consideration of any dolphin species other than bottlenose dolphins. For the majority of dolphin species in the UK, it would require a dedicated research program to identify protected areas for calving and feeding. There has been no evidence that such a dedicated, in-depth programme will be forthcoming from agencies such as DEFRA or JNCC in the near future.

In addition to the marine protected area and baleen whale research such as that prioritised above, the BAPs also call for research into acoustic impacts

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[237] E.C.M. Parsons & A. Woods-Ballard, *Acceptance of Voluntary Whalewatching Codes of Conduct in West Scotland: The Effectiveness of Governmental Versus Industry-Led Guidelines*, 6 CURRENT ISSUES IN TOURISM 172, 172–182 (2003).

[238] DETR (now DEFRA), DoE(NI), National Assembly of Wales (NAW), and the Scottish Executive (SE).

on some species,[239] bycatch,[240] and pollution.[241] There is certainly a need to conduct research into cetacean habitat use[242] and ecology, in particular, the impact of fisheries on prey availability.[243] Getting even basic information on cetacean abundance around the UK coastline and, especially, determining trends in this abundance is important,[244] particularly for evaluating whether UK conservation actions are successful and stocks are recovering.

Apart from funding for existing projects, such as the important DEFRA-funded[245] stranding collection and analysis scheme,[246,247] there has been little evidence of government bodies putting funding towards other urgent studies. Certainly the UK government does not possess the "in-house" expertise or logistical ability to conduct such research, which is often long-term. The most practicable and cost effective way to get these research projects and conservation targets actually completed would be for those government bodies that have committed to research-based BAP actions[248] to each provide funding to a central grant giving body or trust fund. This fund could be overseen by

[239] *Baleen whale action plan*, *supra* note 225; *Small dolphin action plan*, *supra* note 227; *Toothed whale action plan*, *supra* note 226.

[240] *See, e.g.*, *Small dolphin action plan*, *supra* note 227 ("Commission acoustic and video research on behavioural aspects of cetacean by catch to better understand ways to mitigate conflicts from particular fisheries.").

[241] *Baleen whale action plan*, *supra* note 225; *Small dolphin action plan*, *supra* note 227; *Toothed whale action plan*, *supra* note 226.

[242] *See, e.g., Toothed whale action plan*, *supra* note 226 (recommending future research and monitoring to: "Support research into population structure and habitat use to identify waters which may be particularly suitable for toothed whales and which may qualify for further protection. (ACTION: CCW, EHS, DETR, JNCC, SE.").

[243] *See, e.g., Baleen whale action plan* and *Toothed whale action plan*, *supra* notes 225–226 (recommending future research and monitoring to: "Support appropriate research into identifying marine living resources utilised by [toothed and baleen] whales and the environmental changes related to fishing. (ACTION: DANI, JNCC, MAFF, SE). Grouped plans for toothed and baleen whales.").

[244] *See, e.g., Toothed whale action plan*, *supra* note 226 (recommending future research and monitoring to "[s]upport long-term monitoring of population abundance and distribution via dedicated surveys and platforms of opportunity (ACTION: CCW, DETR, EHS, JNCC, MAFF, SNH)"; *Baleen whale action plan*, *supra* note 225 (recommending future research and monitoring to "[s]upport long-term monitoring of population abundance and distribution to assess recovery from whaling. Consideration is needed of previously unused data on cetacean distributions such as Hydrographic Office surveys (ACTION: DETR, EHS, JNCC, MAFF)"; *Harbour porpoise action plan*, *supra* note 228 (recommending future research and monitoring to "[e]stablish long-term research on population and conservation needs of all small cetaceans in UK waters, co-ordinated through ASCOBANS (ACTION: DoE, DOE(NI), JNCC)."

[245] However, other government bodies are noted actors in addition to DEFRA in the cetacean BAPs for this action (e.g., CCW, DoE(NI), EN, JNCC, SNH, SOAEFD, DANI (Department of Agriculture of Northern Ireland—now called the Department of Agriculture and Rural Development) and the Welsh Office Agriculture Department (WOAD). Hence, they should be either required to add additional funding to such research, or should these bodies be removed from the action point if totally superfluous.

[246] These schemes are run by the Institute of Zoology (for England and Wales) and the Scottish Agricultural College (for Scotland). These programmes have provided extremely valuable information on cetacean contaminant levels and disease exposure in stranded animals as well as determining cause of death.

[247] *Small dolphin action plan*, *supra* note 227; *Harbour porpoise action plan*, *supra* note 228.

[248] Such as JNCC, DEFRA, NERC, DoE(NI), NAW, SE, and other devolved conservation bodies.

an appropriate and representative board of trustees, who would then allocate funding to proposed research projects or initiatives by non-governmental, scientific organisations, that would address BAP priority research needs in the most cost effective and productive way.

Climate change and its impact on cetaceans has also been an area that has been highlighted by several plans[249] and is perhaps one area where BAPs have suggested specific conservation actions that have not been addressed by other conservation initiatives, yet could have major impacts on UK cetacean conservation, both in terms of conserving the animals and also the management schemes utilised. For example, what if increasing water temperatures predict a shift in dolphin distribution? In such a scenario, bottlenose dolphins might well evacuate the Moray Firth and Cardigan Bay SACs and these marine protected areas would become irrelevant.

2.3.6.4 Inconsistency of actions

There are several inconsistencies among some BAP actions. For example, where actions to address a threat have been put forward for some species, other species that are also so threatened are not afforded a similar conservation action. Although a need for research on acoustic disturbance is noted as a key action for several of the cetacean action plans[250]—with the dolphin grouped plan specifically noting the need for both short-term and long-term studies—it should be emphasised that there are no actions calling for the investigation of the effects of acoustic impacts on porpoises, neglecting the issue that noise may be one of the *anthropogenic activities* preventing recolonisation of waters.[251]

There are acoustic threats that are of specific relevance to harbour porpoises. For example, Acoustic Harassment Devices (AHDs) or "seal-scrammers," that are designed to displace predators from around fish farm sites are known to displace harbour porpoises from their habitat,[252] and concern has been raised about the impact of these devices on porpoises in UK waters.[253] Decreases in harbour porpoise sightings have also been reported

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[249] *Small dolphin action plan*, *supra* note 227; *Baleen whale action plan*, *supra* note 225; and *Toothed whale action plan*, *supra* note 226.

[250] *Id.*

[251] One of the long-term aims of the *Harbour porpoise action plan*, *supra* note 228.

[252] P.F. OLESIUK *ET AL.*, EFFECTS OF SOUNDS GENERATED BY AN ACOUSTIC DETERRENT DEVICE ON THE ABUNDANCE AND DISTRIBUTION OF HARBOR PORPOISE (*PHOCOENA PHOCOENA*) IN RETREAT PASSAGE, BRITISH COLUMBIA (1996).

[253] M. P. Simmonds & S. Dolman, *A note on the vulnerability of cetaceans to acoustic disturbance* (1999) (paper presented to the Sci. Comm. at the 51st Meeting of the Int'l Whaling Comm'n); J. H. SHRIMPTON & E.C.M. PARSONS, CETACEAN CONSERVATION IN WEST SCOTLAND 85 (2000); Juliet H. Shrimpton, *The Impacts of fish-farming on the harbour porpoise* (Phocoena phocoena) (2001) (contract report for the henridean whale and dolphin Trust); Gordon & S.P. Northridge, *Potential impacts of acoustic deterrent devices on Scottish marine wildlife* (2003) (contract report to Scottish Natural Heritage).

during periods of naval exercises in UK territorial waters, presumably due to acoustic disturbance.[254] Although UK government bodies have funded some research into the AHD issue,[255] acoustic disturbance and its displacement of harbour porpoises from their habitat should be included as a research priority in the harbour porpoise action plan.

2.3.6.5 Inconsistency of bodies to fulfil actions

Similar to the inconsistency of actions within the cetacean BAPs (above), the designation of those responsible for fulfilling actions is often inconsistent and illogical for several key issues that are presented as actions across the cetacean BAPs as well. Questions arise such as: Which authorities are responsible for promoting an understanding of the effect of underwater noise on cetaceans?[256] Who is supporting and funding research on the effects of noise on cetaceans?[257] Particularly, there is a notable absence of Northern Ireland's devolved conservation authority, which is surprising considering the military and seismic activities off their coastline. Better coordination and attention to drafting the plans would have simply solved these inconsistencies.

2.3.6.6 Incomplete actions

There are several actions within the BAPs, which although they address part of a problem area, have serious holes. An example of such partial actions with respect to the need to protect populations of baleen whales would be to: "[s]upport attempts to identify and protect the breeding sites of any remnant eastern Atlantic right whale or humpback whale population."

It is pleasing to note the emphasis that the "endangered" North Atlantic right whale and the humpback whale receive with respect to protecting their breeding areas. It is somewhat strange that species that may be considered to be more threatened than humpback whales—e.g., the blue whale, fin whale, and sei whale (see Section 2.1.6)—yet occur in UK waters, are not specifically mentioned. Arguably, the breeding areas of all baleen whales should be identified, and steps should be taken to protect them.

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[254] E.C.M. Parsons *et al*., *The possible impacts of military activity on cetaceans in West Scotland*, 14 EUR. RES. ON CETACEANS, 185–190 (2000).

[255] *E.g*., GORDON & NORTHRIDGE, *supra* note 253.

[256] For toothed whales DTI and JNCC are the specified actors, but DETR (now DEFRA) and the devolved nature conservation agencies are noted as actioning bodies for baleen whales (CCW, EN, and SNH) but DoE(NI) is excluded.

[257] For dolphins DETR (DEFRA), DTI and DoE(NI) (but not any other devolved bodies or the JNCC) are the proscribed actors, but for toothed whales it is DETR, JNCC and the Natural Environment Research Council (NERC), but not the DTI or devolved bodies. Whereas for baleen whales, it is JNCC and NERC again, but also EHS and the CCW (but not SNH, EN or DoE(NI).

Another example can be provided with respect to pollution. One of the main actions in several of the cetacean BAPs[258] is to reduce "the discharge of substances that are toxic, persistent and liable to bioaccumulate, giving priority to the discharge and leaching of PCBs and organochlorines."[259] The harbour porpoise action plan has slightly stronger wording, stating the requirement of "giving priority to phasing out identifiable PCBs, and reducing discharges of organohalogens to safe levels."

However, what exactly is meant by "safe levels"? Does it mean levels in porpoise tissues, in their blood supply, in their prey species, or in the water column? Also, how does one determine what is safe? Do they mean levels that would produce no physiological, anatomical, or health effects in porpoises, or merely below levels that might be lethal? What are these levels? If left to the BAP process, we would never find out because conducting research on the effects of pollution on harbour porpoise health has not been noted as a conservation action.[260] It should, therefore, be added.

Although PCBs and other organohalogens are specifically mentioned in the BAP actions noted above, the BAPs demonstrate a lack of consideration for other contaminants, such as heavy metals, tributyltin (TBT), organophosphates, polyaromatic hydrocarbons (PAHs), and dioxins, which may also have toxic effects on UK cetaceans.[261] The synergistic effects of pollutants and anthropogenic stressors on cetaceans are an issue that has prompted concern at an international level.[262] Therefore, research into non-organohalogen contaminants and the potential synergistic effects of pollutants and other stressors should be added as BAP actions for cetaceans across the board.

2.3.6.7 Local Biodiversity Action Plans

In addition to UK wide plans for biodiversity conservation, local authorities have been charged with producing regional or "Local" Biodiversity Action

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[258] The Grouped Plans for Small Dolphins, Baleen Whales, and Harbour Porpoise all have similar actions. The Grouped Plan for Toothed Whales, however, does not have an action related to the reduction of pollution.

[259] Specific wording from the *Small dolphin action plan*, *supra* note 227.

[260] If the government were to truly be precautionary with respect to cetacean conservation, and considering that one of the main sources contaminant uptake in cetaceans would be ingesting contaminated prey (*see, e.g.*, E.C.M. Parsons, *Trace Metal Pollution in Hong Kong: Implications for the Health of Hong Kong's Indo-Pacific Hump-Backed Dolphins* (Sousa chinensis), 214 SCI. TOTAL ENV'T 175 (1998)), it could, for example, ensure that organohalogen levels in likely cetacean prey species are at the same level (or lower) as food contamination guidelines set by the World Health Organisation for humans.

[261] SHRIMPTON & PARSONS, *supra* note 253; V. Grillo *et al.*, *A Review of Sewage Pollution in Scotland and its Potential Impacts on Harbour Porpoise Populations* (July 2001) (presented to the Int'l Whaling Comm'n Sci. Comm., 53d Meeting of the Int'l Whaling Comm'n, Paper SC/53/E13).

[262] *See* R. Payne, *Long Range Communication in Large Whales, Ocean Noise and Synergistic Impacts*, *in* ANNEX K: REPORT OF THE STANDING WORKING GROUP ON ENVIRONMENTAL CONCERNS, INTERNATIONAL WHALING COMMISSION app. 2, 22–23 (2004) (discussing concerns over synergistic effects of anthropogenic stressors and pollution).

Plans (LBAPs). Typically, the actions outlined in national BAPs are used as a basis for the LBAPs, but not always. Many of the key actions highlighted for species action plans at a national level may not be relevant on a local basis, due to, for example, an absence of a particular threat in an area or lack of local authority power to regulate on specific issues, which might only be legislated or regulated at a national level. Also, there may be specific threats to species at a regional level that are unique, or particularly prevalent in that region, thus warranting special attention. To illustrate this with respect to cetaceans, the Argyll and Bute LBAP (see below), for example, notes fish-farming as a local source of pollution, and military activity as a regional source of noise disturbance, that could threaten cetaceans, issues that do not receive specific attention in national BAPs.

There are some problems with the LBAP process. For example, according to a recent review, for only 16 percent and 32 percent of marine species and marine habitats, respectively, has any kind of contact been made between lead partners and LBAP authorities, compared with 32 percent for terrestrial species and 53 percent for terrestrial habitats.[263] The UK Biodiversity Partnership's *Highlights from the 2002 reporting round*[264] reported that when lead partners were asked to assess the importance of LBAPs in achieving national priority targets, 83 percent said LBAPs were important to some extent. However, of the remaining lead partners (17 percent) that said that LBAPs were not important in achieving national priority targets, most of these represented the leads for marine species or species with a highly restricted range. This demonstrates a lack of support or understanding of marine LBAPs from those involved in the national levels of the BAP process.

What is rather ironic is that cetacean LBAPs have in some cases made more progress in achieving their conservation aims than nation BAPs (see Case Study below). If the national leads were to communicate and co-ordinate with those involved in LBAPs, perhaps more could be done in achieving and accomplishing national BAP actions.

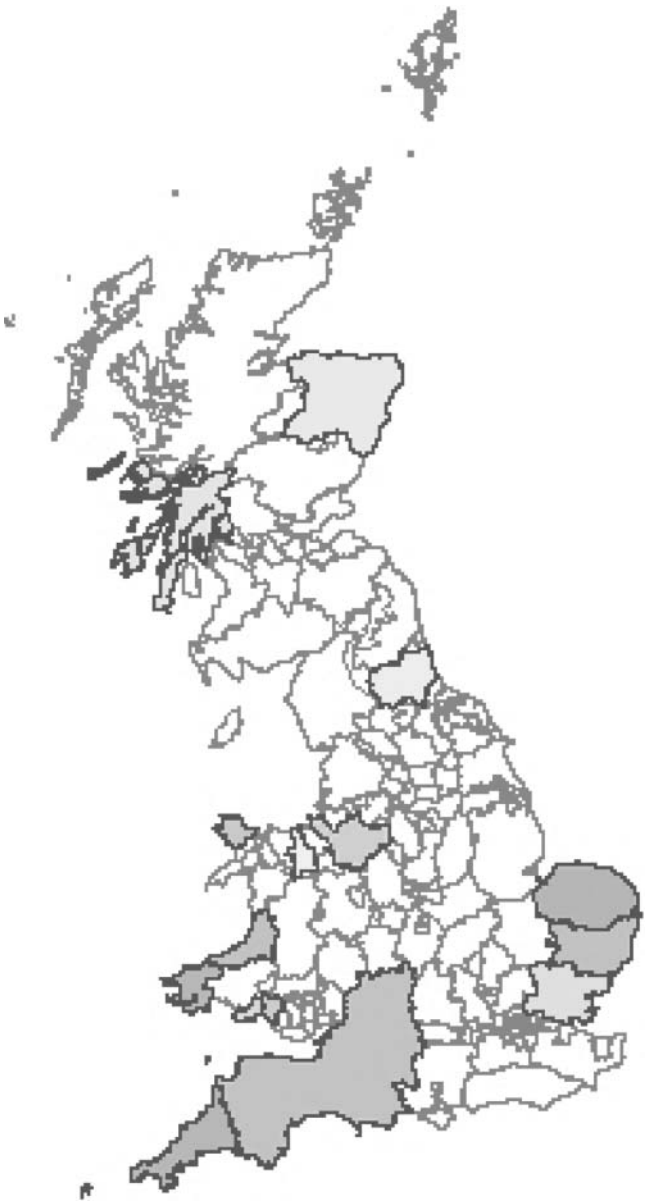
Turning to the LBAPs themselves, many regions are noted as having produced harbour porpoise LBAPs[265] (Figure 1). Although there are many areas where harbour porpoises are abundant, plans are not noted to have been

[263] 2002 Local Biodiversity Action Plan Reporting, *available at* http://www.ukbap.org.uk/LBAPTracking.aspx (last visited December 18, 2009).

[264] UK BIODIVERSITY P'SHIP, HIGHLIGHTS FROM THE 2002 REPORTING ROUND, *available at* http://www.ukbap.org.uk/Library/2002ReportPamphlet.pdf

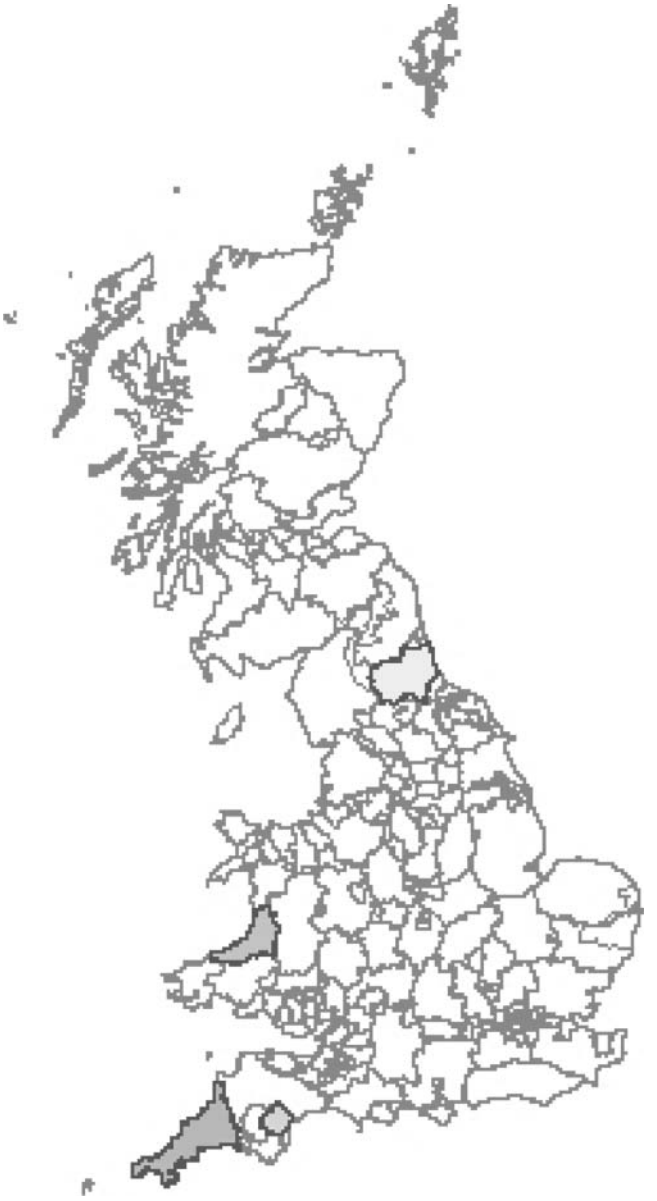
[265] Regions that are noted by the government to have produced harbour porpoises LBAPs include Argyll and Bute/Swansea/Durham/Cornwall/Pembrokeshire/Southwest region (Avon/Devon/Somerset/Gloucestershire/Dorset/Wiltshire, etc.)/Ceredigion/Cheshire/Denbighshire/Essex/Suffolk/Norfolk/Northeast Scotland/Anglesey. *Small dolphin action plan*, *supra* note 227.

FIGURE 1. LBAP coverage for harbour porpoises[266]



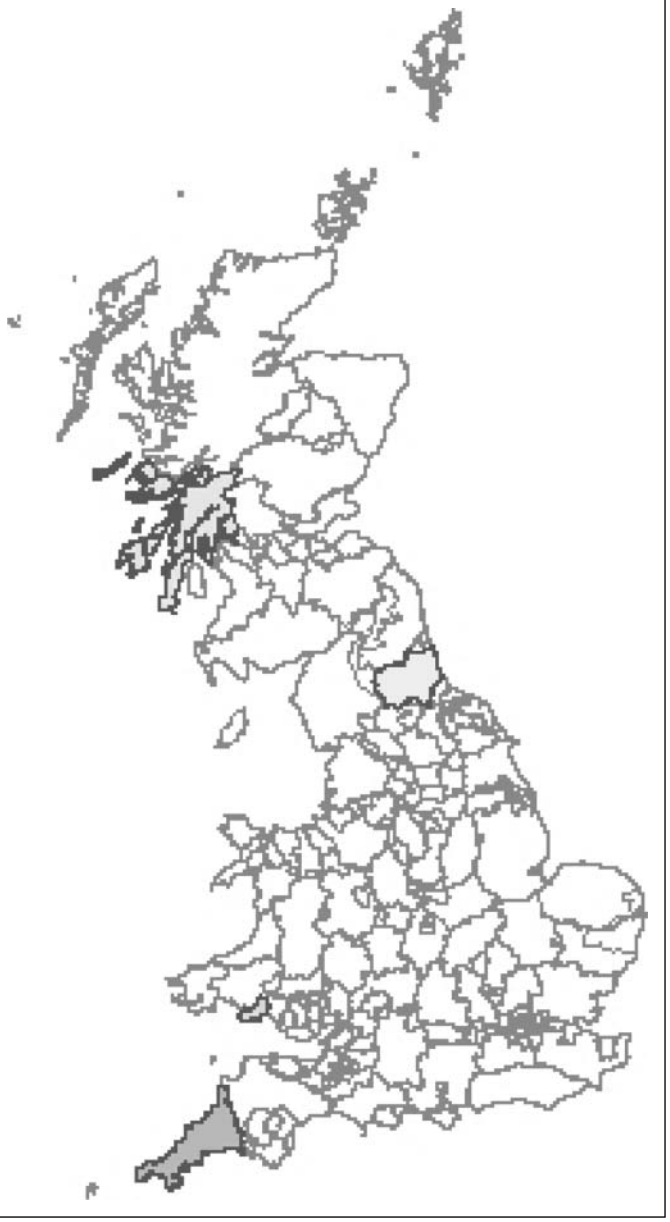
[266] Map from *Harbor porpoise action plan*, *supra* note 228.

FIGURE 2. LBAP coverage for small dolphins[267]



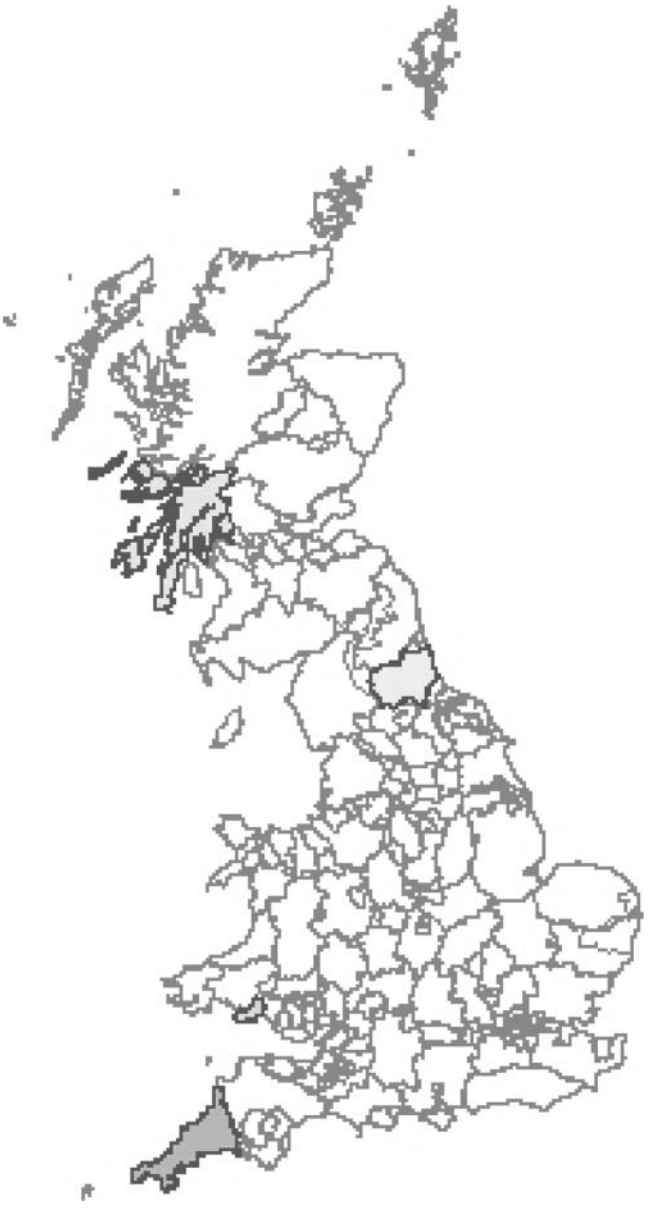
[267] *Id.*

FIGURE 3. LBAP coverage for toothed whales[268]



[268] Map from *Toothed whale action plan*, *supra* note 226.

FIGURE 4. LBAP coverage for baleen whales[269]



[269] Map from *Baleen whale action plan*, *supra* note 225.

produced as of yet (e.g., the Highland and Western Isles, Shetland Isles, and Orkney, as well as the northeastern and western coasts of England). In contrast, few LBAPs have apparently been drawn up or implemented for dolphins or toothed and baleen whales[270] and generally have not been considered when drawing up LBAP species lists.

In general, there is a lack of consideration of cetaceans generally in the LBAP process by regions with coastal waters that needs to be addressed. Arguably the JNCC[271] could have provided guidance to local authorities that have high populations of cetaceans in their waters that cetaceans needed to be considered within their LBAP process.

Although relatively few areas have whale or dolphin LBAPs, arguably those areas that have considered cetaceans in this process have done more to progress and complete biodiversity conservation actions than the government has been able to accomplish. Perhaps this is because many cetacean LBAPs are led and implemented by local NGOs which have a greater motivation, and more dedicated time, man-power, and resources to implement LBAP actions. Local NGOs may also have better links and personal interactions with local stakeholders, and so co-operative actions can be agreed upon and implemented more quickly.

Currently, implementation of LBAPs is the responsibility of local authorities who receive little additional funding for BAP implementation from the central government. To make up the shortfall, non-governmental funding bodies, such as the Heritage Lottery Fund, are being targeted to fund LBAP projects.[272] Thus, large amounts of time and man-power are being spent by local authorities and local biodiversity officers trying to write proposals and seek funding to support projects, rather than actually co-ordinating and implementing conservation actions.

The situation is exacerbated by the fact than many funding agencies will only fund a proportion of a project's total needs, requiring "matching funding" from other agencies. Thus, instead of one simple grant request to one agency, multiple requests have to be made, often using different formats and application criteria, multiplying the time taken to secure funds. Should funding be secured, the multiple-funder system also means extra paperwork and bureaucracy, as each funder may have different requirements and protocols for accounting and reporting for the funded project. As many LBAP actions will require long-term, possibly indefinite, and substantial funding, this places a huge amount of strain on local authorities and local NGO partners.

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[270] The JNCC notes that the Cornwall, Teignbridge, Ceredigion, and Durham have produced LBAPs for dolphins. In addition, Cornwall, Swansea, Durham, and Argyll and Bute have produced LBAPs for toothed and baleen whales.

[271] As lead partners for UK cetacean BAPs and statutory advisors on cetacean matters in the UK.

[272] K. Hisock *et al*., *Biodiversity Action Plans in the Coastal Environment, in* 5(14) MARINE ENVIRONMENTAL MANAGEMENT REVIEW OF 1997 AND FUTURE TRENDS 101–107 (1998).

LBAPs have the potential to do much for the conservation of cetaceans in the UK, and possibly more effectively than national level BAPs. However, they urgently need to receive more funding and other support.

2.3.6.8 Case Study: Argyll and Bute LBAP

Cetacean LBAPs for Argyll and Bute (southwest Scotland) include species-specific plans for bottlenose dolphins, minke whales, and harbour porpoises and a grouped plan for all cetaceans.[273] Local threats identified include pollutants, such as sewage, oil spills, fish farm pollutants, marine debris, and organic pollutants (such as PCBs), most of which are not covered in national BAPs. Anthropogenic noise is also noted as a threat, particularly noise from Acoustic Harassment Devices (AHDs or "seal-scrammers") and military activities, which are not explicitly detailed as issues in national plans. Bycatch is also noted as a threat, but creel (lobster pot) lines are specifically cited as a cause of entanglement, a type of fishing not specifically considered in national BAPs.

To illustrate the issues covered in these LBAPs, below are summarised specific actions called for in the plans for minke whales and bottlenose dolphins:

Minke whales:[274]

1. Promote awareness about minke whales via leaflets, media coverage, and eco-tourism;
2. Identify further minke whale breeding and feeding sites;
3. Conduct research into behaviour, biology, and ecology of minke whales in Argyll;
4. Use genetic finger printing to investigate population dynamics and to determine if minke whale meat on sale in Norway and the Orient is from Scottish minke whales; and
5. Investigate disturbance from noise or seismic testing.

Bottlenose dolphins:[275]

1. Seek to improve and control water quality by better control of discharges;

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[273] Argyll & Bute Local Biodiversity P'ship, *Cetaceans (All Species)*, *in* LOCAL BIODIVERSITY ACTION PLAN 4.25–4.26 (M. Curran-Colthart ed., 2001); Argyll and Bute Local Biodiversity P'ship, *Bottlenose Dolphins*, *in* LOCAL BIODIVERSITY ACTION PLAN 4.29–4.30 (M. Curran-Colthart ed., 2001); Argyll and Bute Local Biodiversity P'ship, *Harbour Porpoise*, *in* LOCAL BIODIVERSITY ACTION PLAN 4.31–4.32 (M. Curran-Colthart ed., 2001); Argyll and Bute Local Biodiversity P'ship, *Minke whale*, *in* LOCAL BIODIVERSITY ACTION PLAN 4.33–4.446 (M. Curran-Colthart ed., 2001).

[274] Argyll and Bute Local Biodiversity P'ship, *Minke whale*, *supra* note 273, at 4.33–4.446.

[275] Argyll and Bute Local Biodiversity P'ship, *Bottlenose Dolphins, supra* note 273, at 4.29–4.30.

2. Investigate the scale and variety of shipping, agricultural, and aquaculture pollutants;
3. Identify further bottlenose dolphin breeding and feeding sites;
4. Investigate the feasibility of establishing a SAC for protection;
5. Investigate the genetic profile of Argyll bottlenose dolphins and compare with other UK populations to determine population dynamics and vulnerability;
6. Initiate a dedicated photo-identification study to photograph individual dolphins, and use with environmental and positional data to provide accurate habitat/movement information; and
7. Conduct research into the possible impacts of military and fish farm activities on bottlenose dolphin populations and habitats.

In contrast to the UK BAPs, the majority of the above actions have actually progressed, and many are even nearing completion. Those actions which have seen little or no progress are actions that are the remit of government agencies, such as improving water quality and discharges, which would fall to the Scottish Environmental Protection Agency (SEPA). Most of the progressed actions have actually been conducted and co-ordinated by NGOs,[276] with funding largely from non-statutory sources.[277] No funding has been provided by the primary agencies dealing with national cetacean BAPs (such as DEFRA and JNCC), and, indeed, at the time of writing this article, the JNCC biodiversity Web site does not even mention the above NGOs as partners or contributing organisations.

Comparing the lack of progress with the national BAPs, the confusion over responsible parties, and general lack of coordination with respect to cetacean BAPs to the greater success demonstrated by NGO-led LBAPs, there is the argument that JNCC should step aside as the lead on the national cetacean BAPs and allow NGOs to take a more active role. It would also be far more cost-effective because NGOs often have dedicated full-time specialist personnel and entrusting such groups with a role of responsibility is more likely to ensure active participation.

The UK marine turtle BAPs are being led by NGOs,[278] and these plans have been successful, with a great deal of progress accomplished. If left with

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[276] Primarily the Hebridean Whale and Dolphin Trust, the NADAIR Trust and the Seawatch Foundation.

[277] Most funding (50 to 75 per cent of most projects) comes from the Heritage Lottery Fund, with some funding from Argyll and the Islands Enterprise and Scottish Natural Heritage, grants from other NGOs (e.g., WWF-Scotland) and, self-funding by the NGOs themselves. *See generally* Hebridean Whale and Dolphin Trust, *Home*, http://www.hwdt.org (last visited November 20, 2009).

[278] UK Biodiversity Group, *Maritime species and habitats,* in 5 TRANCHE 2 ACTION PLANS 1, 37 (1999), *available at* http://www.ukbap.org.uk/UKPlans.aspx?ID=337 [hereinafter *Marine turtle action plan*].

the current system and leadership, it is unlikely that any national cetacean BAPs will achieve their ultimate objectives.

Some actions—those of a high level policy or regulatory context—will still require action from government departments and statutory agencies. If NGOs take the role as lead partners and drive the process forward, it may create the pressure needed to elicit the necessary governmental action that has been missing. This suggestion does not, however, remove the government from obligations to fund BAPs and LBAPs and, as mentioned above, the government should be working to enshrine a large-scale and long-term commitment to funding BAPs and LBAPs into national legislation.

Further changes to the structure of BAP and its legislative backing are proposed in Section 3.8.

CETACEANS AND THE ECOSYSTEM APPROACH

The ecosystem approach (or ecosystem-based management) is an approach to managing human activities that has gained a lot of ground in recent years. The UK formally endorsed an Ecosystem Approach at the 5th North Sea Conference (2002) and set out what that means for the UK in Safeguarding Our Seas (2002). Traditionally, management of activities has been sectoral, divided by human boundaries rather than biological ones and with little thought to the cumulative effects of several activities functioning in the same environment.

Nature conservation efforts have largely focused just on protecting rare or declining species, and only from direct, intentional harm. An ecosystem approach requires looking at the management of activities and nature conservation at a larger scale—an ecosystem scale. Instead of managing human activities sectorally, it requires us to look at them together to ensure that cumulatively, they are sustainable and the functioning of the ecosystem and its component species, habitats, and processes are not compromised. For nature conservation, the reality is that trying to protect a rare species (for example) on its own without also protecting the ecosystem it is a part of will not succeed. This effort requires us to better control lawful activity related impacts to the environment and learn to take a truly precautionary approach—both areas we have previously not been very successful at. Tools such as SEA will be essential to this, and good data and monitoring systems are essential to supporting this approach. Adaptive management processes need to be in place so when monitoring signals that a change is needed, we can act quickly.

However, there are certain things that taking an ecosystem approach does not mean. For example, it does not mean stopping work on individual

species issues or not protect rare or declining species. These will continue to be crucial elements but should be augmented with a system of integrated management of natural resources[279] and ecosystem protection. It also does not mean managing the ecosystem itself or direct manipulation of any of its component parts, e.g., predator control. The emphasis of the ecosystem approach is on managing human activities.

Cetaceans can help us take an ecosystem approach in several ways:

1. The use of indicators will be important in establishing an ecosystem approach as they will allow us to measure progress and evaluate the success of policies. The health of cetacean populations is a useful indicator as they are one of the most visible members of the ecosystem;[280]
2. They are large, long-lived predators, so they bioaccumulate contaminants;[281]
3. They generally live on a wide variety of prey, and being very mobile, they will come into contact with many environmental impacts present;[282]
4. They can be useful indicators of underlying prey distributions and ecosystem processes, so determining cetacean distribution can help identify biological "hotspots";[283]
5. Cetaceans typically need large marine protected areas if they are to be successful, so this will result in protection for many other species and habitats; and
6. Cetaceans are good figureheads for conservation programmes due to their popularity, so they can be used to win support for measures necessary for ecosystem conservation.

[279] ENGLISH NATURE (AGENCY) ET AL., ADOPTING AN ECOSYSTEM APPROACH FOR THE IMPROVED STEWARDSHIP OF THE MARITIME ENVIRONMENT: SOME OVERARCHING ISSUES 7 (2003).

[280] ERICH HOYT, MARINE PROTECTED AREAS FOR WHALES, DOLPHINS, AND PORPOISES: A WORLD HANDBOOK FOR CETACEAN HABITAT CONSERVATION (2005).

[281] *Id.*

[282] Randall S. Wells et al., Bottlenose Dolphins as Marine Ecosystem Sentinels: Developing a Health Monitoring System, 1 ECOHEALTH 246, 246–254 (2004).

[283] S.K. Hooker & L.R. Gerber, *Marine Reserves as a Tool for Ecosystem-Based Management: The Potential Importance of Megafauna*, 54 BIOSCIENCE 27, 27–39 (2004).

3. FUTURE PROSPECTS

3.1 The RMNC and Current Thinking

The past few years have seen a major period of review of the systems and legislative structures in place in the UK for the management and protection of the marine environment. The Review of Marine Nature Conservation (RMNC) was set up in 1999 in response to recognition that the creation of a network of Marine Nature Reserves (see Section 2.3.1.2), as established under the Wildlife and Countryside Act (1981), had not been successful, and that work on the Habitats and Birds Directives had focused attention more on the marine environment and the gaps in the conservation framework. The RMNC was tasked with examining how effectively current systems were protecting the marine environment and "to develop practical and proportionate proposals for its improvement."[284] A pilot study, Irish Sea Pilot (ISP), was set up in the Irish Sea to test the recommendations coming through from the RMNC.

The overall conclusion from the process was that the current system for marine nature conservation is "not fit for purpose" and will not allow the government to meet its international obligations[285] or attain its goal of "clean, healthy, safe, productive, and biologically diverse oceans and seas."[286] A new system is required that protects marine biodiversity and the ecological processes that sustain it, while managing and integrating human activities to ensure they do not compromise this goal—to ultimately put in place an ecosystem approach (see textbox on Cetaceans and the Ecosystem Approach).

3.2 Policy and Spatial Framework

An overarching policy framework was proposed by the RMNC that has a structure consisting of high-level strategic goals and conservation objectives at various scales that are aimed at describing the desired state of marine ecosystems,[287] with targets and indicators set to assess the progress toward achieving these objectives.[288] Through the ISP, the RMNC tested and agreed upon "a nested framework" through which to apply the policy framework "aimed at addressing marine nature conservation needs at a variety of spatial scales."[289] These scales are:

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[284] DEP'T FOR ENV'T, FOOD, & RURAL AFF. (DEFRA), REVIEW OF MARINE NATURE CONSERVATION: WORKING GROUP REPORT TO GOVERNMENT Exec. Summary, ¶ 5 (2004), *available at* http://www.defra.gov.uk/environment/quality/biodiversity/marine/documents/rmnc-report-0704.pdf

[285] *Id.* ¶ 7.

[286] *Id.*

[287] It is envisaged that high level conservation objectives would be further refined by operational objectives. The operational objectives would be integrated with the Ecological Quality Objectives (EcoQos) being developed under OSPAR (see Section 1.2.1).

[288] DEFRA, *supra* note 284, ¶ 12.

[289] *Id.* ¶ 20.

1. The Wider Sea, where action is required at a global, European, and national level;[290]
2. The Regional Seas, which then divide the Wider Sea into medium-scale ecosystems and provides "a useful scale at which to implement the Ecosystem Approach"[291] and Marine Spatial Planning;[292]
3. The Marine Landscapes, which then divide the Regional Seas into main component landscapes using available geophysical and hydrographical information;[293]
4. Important marine areas (MPAs);[294] and
5. Priority marine features which are threatened, rare, or otherwise exceptional species and habitats.[295]

The ISP and RMNC concluded that this framework should be adopted for marine nature conservation.

The policy and spatial framework as proposed would seem to provide a clear and sensible structure from which to develop conservation action and management measures. However, there is some concern for how the marine landscapes level might work in practice for wide-ranging species, such as cetaceans. The theory is that geophysical and hydrographical information can be used to predict biological characteristics because biological data are often absent, particularly in the offshore zone, and is expensive to obtain. While this approach may work well for benthic species, it would be much harder to apply with any certainty for cetaceans, which far less predictably remain within particular ecological units. There is an ongoing and significant need for cetacean data, and the development of the marine landscape approach will not remove this need even though it may be helpful and appropriate for other species.

3.3 Data and Monitoring

The marine environment has long suffered from the lack of a co-ordinated system of marine data collation. Good data are essential to monitoring the state of marine biodiversity, assessing the impact of human activities, and determining appropriate conservation action. The ISP collated as much data as they could on the biological, physical, and human-use characteristics of the

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[290] *Id.* ¶ 15.
[291] *Id.* ¶ 16.
[292] DEFRA, IRISH SEA PILOT: MARINE NATURE CONSERVATION AND SUSTAINABLE DEVELOPMENT Exec. Summary (2004).
[293] DEFRA, *supra* note 284, ¶ 5.20.
[294] *Id.* ¶ 18.
[295] *Id*. ¶ 19.

Irish Sea. It concluded that for most offshore localities, data were so sparse that it would constrain good decision-making.

A recent government assessment of the state of marine biodiversity, *Charting Progress* (2005), highlighted how this is certainly the case for cetaceans. Aside from the Cardigan Bay and Moray Firth bottlenose dolphin populations:

1. "[T]here is not much reliable information for other species or populations on trends in population size";[296]
2. "[P]opulations of marine mammals are poorly understood,"[297] and
3. "[S]ince most cetacean population levels are unknown the overall effects [of commercial fishing] on the sustainability of the system is unclear."[298]

The ISP and RMNC both recognised gaps in the current set up and recommended that a co-ordinated UK wide marine information network be established.[299] The RMNC further recommended that indicators and procedures to monitor the state of marine biodiversity and the impacts of human activities should be further developed and agreed.[300]

We agree that these steps are essential and would urge that particular effort is made to fill the significant data gaps that exist. Presently in the UK, there seems to be an over reliance by the authorities on the "Atlas of Cetacean Distribution in North-West European Waters" to determine the presence and absence of cetaceans in decisions on the designation of protected areas and the management of activities. While this document has its uses, much of the data it is based on are broad scale and patchy and should not be relied on as a comprehensive assessment of cetacean distribution in UK waters. This reliance tends to distract from the need to conduct more dedicated work.

Any monitoring programme will need to assess long-term trends and also evaluate the effectiveness of conservation and mitigation measures employed. There is a particular need for a system to monitor the incidental capture and killing of cetaceans given that this is a requirement under the Habitats Directive.[301]

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[296] Defra, *Cetaceans*, *in* CHARTING PROGRESS: AN INTEGRATED ASSESSMENT OF THE STATE OF UK SEAS, 44, ¶ 3.127 (2005).
[297] *Id*. at tbl. 6.1.
[298] *Id*.
[299] DEFRA, *supra* note 284, at Key Rec. 12–13; DEFRA, *supra* note 292, ¶ 3.
[300] *Id*. at Key Rec. 11.
[301] Habitats Directive, *supra* note 101, art. 12.

3.4 Marine Spatial Planning (MSP)

The regulation of marine activities occurs sectorally in the UK, and there is no framework in place that allows us to take an integrated approach to management or to enable "consistent and co-ordinated decision making across the sectors."[302] This lack of an overall plan is blamed for causing conflict between the different sectors. Nature conservation also suffers because there is no system that provides us with an overview of all the activities taking place in a sea area or a process through which to consider the cumulative and combined effects.[303]

Marine Spatial Planning (MSP) is described as "strategic forward-looking planning for regulating, managing and protecting the marine environment, including through allocation of space, [which] addresses the multiple, cumulative and potentially conflicting uses of the sea."[304] It is seen as a way of improving decision-making and delivering an ecosystem approach to managing activities. European ministers agreed at the North Sea Conference in 2002 that strengthening co-operation in the MSP process of the North Sea was required, and in the same year, DEFRA committed to exploring the role of spatial planning for the marine environment.[305] This was done through the ISP, and the RMNC concluded that a trial should be undertaken to "determine the suitability of implementing such an approach across all UK waters."[306] This trial is underway currently.

A system of spatial planning should be adopted for UK waters to enable a strategic overview of developments in the coastal and marine environment. In our view, the following elements are the most important:

1. All sectors must be included;
2. The MSP must have statutory backing, in the same way that land-use planning does;
3. Resources must be put towards filling data gaps about the status of the UK's cetaceans, and this should be fed into the planning process. While incomplete data should not prevent an initial plan being developed, adaptive management practices should be put into place to allow the plan to change as our knowledge improves;
4. The body/authority given the job of developing and implementing the plans must have sufficient power to bring all the relevant players together. This will probably need to be a new marine agency;

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[302] DEFRA, *supra* note 284, ¶ 26.

[303] *Marine Spatial Planning—Question Time* (Working Paper) (Wildlife and Countryside Link 2005), *available at* http://library.coastweb.info/632/

[304] DEFRA, REVIEW OF MARINE NATURE CONSERVATION (2004).

[305] *Ib.* and DEFRA, *supra note* 292.

[306] DEFRA, *supra* note 284, at Key Rec. 7.

5. If the plan is to be able to truly implement an ecosystem approach, England, Wales, Scotland, and Northern Ireland must work closely together; and
6. Public participation should be built into the process.

3.5 Assessment of Human Activities

For any management process to be successful at balancing economic and environmental needs, we must be able to properly assess the impacts of our activities and take the appropriate responses. We recommend:

1. A good monitoring system, which will be essential for providing the information to make the right decisions;
2. The development of good feedback systems that allow us to take quick and effective action when problems develop;
3. Application of SEA to fishing, given that fishing has serious impacts on marine wildlife, although there has been some doubt whether SEA would apply to fisheries activities as they may not be classified as a "plan or programme"; and
4. Consideration be given to tasking SEA undertaking (or at least screening and quality control) by a body other than the plan owner as is currently the case.

3.6 Enforcement

The sea is a logistically difficult place to enforce legislation. Special equipment and knowledge is required, as is time out on the water. The RMNC recognised that the current system is not working well and that "little enforcement of nature conservation legislation is currently taking place away from the coast."[307]

Consideration should be given to which bodies operate where, what resources and functions they have, and the appropriate powers that should be given to the appropriate bodies to ensure complete coverage of the marine environment. As there will be several bodies enforcing legislation in the marine environment, coordination is very important and there should be requirements in law for them to work together and develop best practice. Further, a national system to record wildlife crime incidents and numbers of successful and unsuccessful prosecutions would aid enforcement by helping to identify crime hotspots and enable resources to be directed more effectively.

3.7 Marine Protected Areas (MPAs)

The RMNC process began due to recognition that the UK was lacking legislation to protect marine sites for nationally important wildlife. The process

[307] DEFRA, *supra* note 284, ¶ 32.

concluded that marine areas are a crucial element of the nature conservation framework[308] and "an ecologically coherent and representative network of marine protected areas should be identified and established and appropriate and proportionate measures applied to ensure their conservation needs are met."[309]

If the UK is to deliver conservation and recovery of the UK's marine biodiversity, as well as to reach the many international commitments made,[310] new legislation is required to designate, manage, and protect an ecologically coherent network of Nationally Important Marine Sites. This network should include the following elements:

1. A proportion of this network should be highly protected marine reserves, where little, if any, human activities are allowed. These areas will underpin biodiversity conservation and recovery, act as scientific reference areas and as an insurance policy against uncertainty;
2. The rest of the network can be a mixture of multiple use sites, no-take zones and other types of MPA;
3. The network must be sufficiently large, contain enough replication of all features at a number of sites, and have sufficient connectivity to ensure species and habitats are sustained in perpetuity;
4. The right powers must be available to the statutory nature conservation agencies and other competent authorities to ensure sites can be managed and protected effectively, and deterioration from human activities is prevented;
5. The network should extend throughout waters where the UK and devolved authorities have jurisdiction and responsibility;
6. If there are gaps in the network for species and habitats where there is insufficient data available to conclusively determine the most important areas for designation, either these gaps should be filled with survey work, or the precautionary principle should be employed and sites designated on the best available information; and
7. Comprehensive survey and monitoring work must be completed to feed into the site management programme, and details of these requirements should be included in the legislation.

Improvements to the existing network of sites of European importance (SACs) are also needed:

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[308] *Id*. at Key Rec. 8.

[309] DEFRA, *supra* note 292, ¶ 8.

[310] *E.g.*, OSPAR's commitment to establish an ecologically coherent network of well-managed MPAs for the OSPAR maritime area by 2010; WSSD's commitment to establish representative networks of MPAs by 2012.

1. More research is required in order for the site to be developed more fully in the offshore zone;
2. SACs should be established for harbour porpoises;
3. Sites should be larger in size to provide a "buffer" for changes;
4. Decision making on what activities are allowed in or near sites needs to be more precautionary; and
5. As the Habitats Directive is now being applied to the offshore zone, the list of cetacean species which sites can be designated should be extended beyond the more coastal species (bottlenose dolphins and harbour porpoises).

3.8 Biodiversity Measures

The current system for species and habitat protection in the UK, provided mainly by the Wildlife and Countryside Act (see Section 2.3.1) and the Conservation Regulations (see Section 2.3.4), does not offer a good level of protection for marine wildlife. It is often based on terrestrial principles that make it hard to apply in the marine environment and can rely on a level of knowledge for its implementation that we do not have for marine wildlife. Added to this are some significant gaps and loopholes (discussed in some detail in Section 2.3). The RMNC recognised this and suggested that a complete overhaul of the current system should be considered with bespoke legislation to allow for the development of a coherent ecosystem approach.[311]

A fundamental flaw of the protective regime, which was raised by the RMNC,[312] is that national species protection legislation only applies to 12 nautical miles. National species protection legislation should apply throughout waters where the UK and devolved authorities have jurisdiction and responsibility.

The Irish Sea Pilot (ISP) also particularly highlighted that "national legislation should be introduced to control and reduce the killing, injury and disturbance of cetaceans and certain other vulnerable species as a result of fishing and other activities."[313] The ISP advocates the introduction of a system whereby a lawful activity, such as fishing, that results in the killing or disturbance of cetaceans and other protected or priority species is subject to:

1. Assessment;
2. Development of best practice guidance with the appropriate SNCO, detailing mitigation and technical measures to be employed as a

[311] DEFRA, *supra* note 284, ¶ 7.31, Key Rec. 9.1.
[312] *Id.* ¶ 7.30.
[313] DEFRA, *supra* note 292, ¶ 11.

requirement of consent for the operation. These guidelines should have statutory backing and enforcement;

3. Ongoing monitoring of these impacts of the operations and the effectiveness of any guidelines and mitigation measures employed; and
4. Feedback from the monitoring programme will determine if further measures are needed as determined by the SNCO. If necessary, this should include cessation of the activity.

Several sections in this article (for example, the textbox on Noise Pollution and the Precautionary Principle and Part 1, Section 1.3.2) have highlighted the difficult and growing problem of noise pollution, and as an issue that has the capacity to disturb, injure, and even kill—instigation of the above measures are urgently needed. At the very least, noise producing activities should be made to follow guidelines, such as the oil and gas industry is required to when undergoing seismic surveys[314]—although these must have a firm statutory basis and be properly monitored and enforced.

Further, regulatory standards for the construction, design, and use of technology in the marine environment should consider noise pollution levels along with other environmental concerns. The issue of military sonar (see textbox on Noise Pollution and the Precautionary Principle) is of such concern that there should be a postponement of development of new military sonar systems until more is known. Critical cetacean habitat should be made off-limits to naval vessels using mid and low frequency sonar systems, at least until the effects can be properly assessed and it can be proven or at least is known that it is highly likely that sonar will not impact cetaceans. Above all, the application of precautionary management practices is imperative. A site-based measure that should be considered for the purpose of protecting wildlife would be the introduction of "no-go" zones or speed restrictions in areas where there is a particular problem. Bylaws may be one way of enacting this (see textbox on Boat Disturbance). The benefits of this approach are that it could be more flexible, e.g., protecting the area for only part of the year if that is all that is required. Finally, the introduction of a statutorily backed code of conduct or marine wildlife watching activities would be a positive measure to prevent disturbance and aid enforcers with the prosecutions of disturbance offences (see textbox on Boat Disturbance for full discussion).

The ISP tested a set of criteria designed to identify nationally important (rare, proportionally important, declining, threat of decline) marine features. It recommended that work should be done to identify which of the features

[314] Although, as noted before, there are significant flaws and weaknesses in the guidelines for seismic survey mitigation, which must urgently be addressed, see E.C.M. Parsons *et al., supra* note 34.

would benefit from recovery programmes and that these should be established, incorporating the BAP process within them.[315]

Providing these received the appropriate statutory basis and funding, this could be a positive step for marine biodiversity. The following statutory elements should be included:

1. A general duty on all public bodies and office holders to further the conservation of marine biodiversity;
2. The features list should be given a legal status;
3. Duties to monitor features;
4. Measures requiring public bodies to work towards agreed targets for features;[316] and
5. Emergency powers to regulate activities likely to damage priority features.

3.9 The Marine Bill

For several years, the NGO community, including WDCS (the Whale and Dolphin Conservation Society),[317] has been campaigning strenuously for comprehensive legislative improvements for the marine environment—for the reasons outlined in this article and more.

In December 2004, the Department for Food, Agriculture, and Rural Affairs (DEFRA) published its five-year strategy,[318] in which the introduction of a Marine Bill was laid out:

> We will improve the current framework for managing and protecting all our marine resources through a Marine Bill, which we hope to introduce sometime in the next Parliament. This will provide the framework within which those who regulate marine activities can ensure the sustainable use and protection of our marine resources and will help us to apply the ecosystem approach to the management of our marine resources. The framework will allow the different uses of the sea—including wildlife protection, offshore wind and other industries—to develop harmoniously.[319]

To aid integrated marine management, DEFRA notes that it plans to set up a "new marine agency."[320] It was proposed that this agency will take over

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[315] *Id.* ¶ 7; DEFRA, *supra* note 284, at Key Rec. 9.2.

[316] DEFRA, *supra* note 284, at Key Rec. 9.3.

[317] Through the Wildlife and Countryside Link and a coalition of leading environmental and heritage NGO's including WDCS, MCS, WWF, RSPB, and The Wildlife Trusts.

[318] DEFRA, *supra* note 304.

[319] *Id*. at 68–69.

[320] *Id*. at 69. Note added at proof stage: on November 12 2009, the UK Marine and Coastal Access Act was passed which, will result in the establishment of a Marine Management Organisation which is

some of the roles of the previous statutory bodies with remits dealing with aspects of the marine environment. The commitment to this followed in the Labour Party manifesto in April 2005:

> Through a Marine Act, we will introduce a new framework for the seas, based on marine spatial planning, that balances conservation, energy and resource needs. To obtain the best value from different uses of our valuable marine resources, we must maintain and protect the ecosystems on which they depend.[321]

The two other main UK parties also supported a marine bill.

This is, without exaggeration, a once in a lifetime opportunity to make the improvements we need to the way we protect and manage the marine environment. Above all, government must not lose sight that our marine biodiversity has suffered serious losses over the years and depends on sound decisions made for its conservation. For too long now, we have forged ahead with the development and exploitation of our marine environment whilst making painfully slow progress with measures to protect, conserve, and now allow recovery of marine biodiversity.

4. RECOMMENDATIONS

4.1. The Necessary Conservation Framework and Philosophies

4.1.1. Cetaceans and the Ecosystem Approach

The "ecosystems approach" is becoming an increasingly important central tenet of marine conservation and a focus on cetaceans can help to take this approach forward.

1. The use of cetaceans as an indicator species will be important in establishing an ecosystem approach because they will allow us to measure progress and evaluate the success of policies.
2. Cetaceans typically need large marine protected areas for their conservation. This will result in protection for many other species and habitats.
3. Cetaceans are good figureheads for conservation programmes thanks to their widespread popularity and can be used to win support for measures necessary for ecosystem conservation.

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intended to be the primary marine planning authority on behalf of the UK Government and its regulator of most activities, including sea fisheries, in those parts of the UK marine area where its functions are exercisable. Exceptions to its licensing powers include "nationally significant" infrastructure projects such as renewable energy projects able to generate over 100 megawatts and the largest port developments.

[321] LABOUR PARTY, THE LABOUR PARTY MANIFESTO 2005, BRITAIN FORWARD NOT BACK 101 (2005), *available at* http://newsimg.bbc.co.uk/1/shared/bsp/hi/pdfs/LAB_uk_manifesto.pdf

4.1.2. Strategic Environmental Assessment

Strategic environmental assessment (SEA) needs to become a linchpin of marine conservation. To aid this, consideration should be given to the creation of a separate agency or unit with responsibility for screening and quality control, if not for the preparation of SEA reports and subsequent monitoring.

4.1.3. Marine Spatial Planning

A system of marine spatial planning (MSP) should be adopted for UK waters to enable a strategic overview of developments in the coastal and marine environment. The following elements are particularly important:

1. All sectors must be involved in the process;
2. The MSP must have statutory backing in the same way that land-use planning does;
3. Resources must be put towards filling data gaps about the status of the UK's cetaceans, and this should be fed into the planning process;
4. Adaptive management practices should be put into place to allow the plan to change as our knowledge improves;
5. The body/authority given the job of developing and implementing the plans must have sufficient power to bring all the relevant players together (this will probably require a new marine agency);
6. England, Wales, Scotland, and Northern Ireland must work closely together; and
7. Public participation should be built into the process.

4.1.4. Biodiversity Action Plans and Local Biodiversity Action Plans

1. Government bodies that have committed to research-based biodiversity action plans (BAPs) should each provide funding to a central grant-giving body, or trust fund. This fund could be overseen by an appropriate and representative board of trustees, who would then allocate funding to proposed research projects or initiatives by non-governmental scientific organisations (NGOs) and others that would address BAP priority research needs in the most cost-effective and productive way.
2. With regard to local biodiversity action plans (LBAPs), NGOs should be encouraged to take the role as lead partners in driving the process

forward, as this may create the pressure needed to elicit the necessary governmental action that has so far been missing.

4.2. Improving Specific Aspects of Legal Protection

4.2.1. The Opportunity and Importance of the UK's Promised Marine Bill

The Marine Bill—expected to be drafted in late 2006—is without exaggeration a once-in-a-lifetime opportunity to make the improvements we need to the way we protect and manage the marine environment. Above all, government must not lose sight of the fact that our marine biodiversity has suffered serious losses over the years and depends on sound decisions being made for its conservation. Below, we list the measures that we believe the UK needs to enact into law to ensure the long-term conservation and adequate protection of the UK's cetaceans (we do not envisage that these would all be enacted via the Marine Bill). These measures include:

1. Introduction of a widely publicised protocol for the reporting of wildlife crime displayed in key areas;
2. Development of a prosecutions database (including details of both successful and unsuccessful prosecutions) to identify problem areas and inefficiencies;
3. Introduction of "no-go" or speed restriction zones to manage boat-based disturbance with appropriate accompanying enforcement provisions and a monitoring scheme to create inshore zones for wildlife protection;
4. Development of a comprehensive and consolidated code of conduct with statutory backing to set the standard and provide guidance to operators of both leisure and commercial vessels on how to minimize disturbance to marine wildlife; and
5. The instigation of effective methods to promote compliance with laws or voluntary regulations, for example, via the appointment of marine wildlife tourism officers located in areas of high marine tourism activity and/or areas that are particularly vulnerable.

4.2.2. Enforcement

Since there will be several bodies enforcing legislation in the marine environment, coordination is very important. There should be requirements in the law for these bodies to work together and develop best practice. Further, a national system to record wildlife crime incidents and numbers of successful and unsuccessful prosecutions would aid enforcement by helping to identify crime hotspots and enable resources to be directed more effectively.

4.3. Marine Protected Areas

A network of marine protected areas (MPAs) should be established to include highly protected marine reserves and a mixture of multiple-use sites and no-take zones, where few, if any, human activities are allowed. For proper operation of the MPAs:

1. The network must be sufficiently large;
2. Appropriate powers must be available to the statutory nature conservation agencies and other competent authorities to ensure sites can be managed and protected effectively;
3. The network should extend throughout waters where the UK and devolved authorities have jurisdiction and responsibility;
4. Data gaps should be filled with survey work or the precautionary principle should be employed with sites designated on the best available information;
5. Comprehensive survey and monitoring work must be completed to feed into the site management programme; and
6. Details of all these requirements should be included in the legislation. Improvements to the existing network of sites of European importance (SACs)—such as more research, decision-making on what activities are allowed in or near the site, and extending SACs to offshore zones, thereby including offshore species—are also needed.

4.4. Biodiversity Measures

National species protection legislation should apply throughout waters where the UK and devolved authorities have jurisdiction and responsibility. We would advocate the introduction of a system whereby lawful activities, such as fishing, that are resulting in the killing or disturbance of cetaceans and other protected or priority species are subject to:

1. Assessment;
2. Development of best practice guidance (with statutory backing and enforcement);
3. Ongoing monitoring of the impacts of the operations themselves and the effectiveness of any guidelines and mitigation measures employed;
4. Utilisation of feedback from the monitoring programmes to determine if further measures are needed (including potential cessation of the activity); and

5. All noise producing activities (e.g., oil and gas surveying) should be made to follow guidelines underpinned with a firm statutory basis. Further, regulatory standards for the construction, design, and use of technology in the marine environment should consider noise pollution levels alongside other environmental concerns.

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