



Environment & Society Portal



The White Horse Press

Full citation: Cole-King, Adam, "Coastal and Marine Conservation in Britain: Ecology and Aesthetics, Land and Sea." *Environmental Values* 3, no. 2, (1994): 139-153.
<http://www.environmentandsociety.org/node/5514>

Rights: All rights reserved. © The White Horse Press 1994. Except for the quotation of short passages for the purpose of criticism or review, no part of this article may be reprinted or reproduced or utilised in any form or by any electronic, mechanical or other means, including photocopying or recording, or in any information storage or retrieval system, without permission from the publishers. For further information please see <http://www.whpress.co.uk>.

Coastal and Marine Conservation in Britain: Ecology and Aesthetics, Land and Sea

ADAM COLE-KING

*Department of Maritime Studies and International Transport
University of Wales
PO Box 907, Cardiff CF1 3YP, UK*

ABSTRACT: The long standing division of official responsibility in Britain, between the scientific and aesthetic aspects of environmental conservation has obscured more fundamental distinctions within conservation, such as its many different objectives and ethical bases. Furthermore the traditional treatment of the coastline as an administrative boundary may have been expedient in the past, but for many conservation purposes is highly inappropriate. Public administration of conservation in Britain has recently been reorganised, but the question of the administrative status of the coast and sea has yet to be properly addressed. Consideration of the diverse needs of environmental conservation shows that traditional perceptions of the coast need to be radically reappraised.

KEYWORDS: Conservation, environmental perception, coasts, natural heritage, seascape

INTRODUCTION

Environmental conservation on land is firmly established in Britain as a necessary and desirable activity from a range of points of view. Despite, or perhaps because of, its long history, it is still facing a tremendous range of pressures, originating from its own internal complexities and divisions, as well as from external conflicts. Meanwhile, attention is spreading from the problems of nature reserves and national parks on land, towards the coast and the sea beyond it. This comes at a time when the problems of coastal management generally are becoming a focus of increased government attention.¹ The development of marine and coastal conservation is therefore labouring under two sets of uncertainties: the role of nature conservation in the broader environmental questions facing the world at the end of the twentieth century, and the status of the coast in public policy and public perceptions.

This paper examines some of the complexities in the theory and practice of environmental conservation² in relation to British coasts and marine areas. Britain has a long and colourful conservation history, in which the arts, the natural sciences, politics, individuals, industry and agriculture, influential voluntary organisations and international obligations have all played key roles. While the experiences in conservation of any country can be instructive, Britain is a particularly good place to study the relationships between individual and societal motivations and the development of public conservation policies. One reason for this is that the activities of voluntary conservation bodies pre-date by decades any government involvement, and had a very direct and far-reaching influence on the form of early government policies. The British 'conservation sector', if it can be so called, has now reached a level of sophistication matched in few other countries in the world. This is both a strength and a weakness, dividing and uniting 'conservationists' and both contributing to and undermining the search for common goals.³ The history of human use of the coastal zone is equally complex. Selected coastal and marine environmental issues have contributed significantly to the development of conservation, but the uncertainties marine conservation is now facing suggest that the relationship could have been closer. As the two histories begin to converge, it is interesting to examine what each implies for the other.

ENVIRONMENTAL CONSERVATION IN BRITAIN

From its origins in the interwar period, and the subsequent passage of the 1949 National Parks and Access to the Countryside Act,⁴ the practice of environmental conservation in the Britain has been characterised by a strong operational division between two major groups of conservation objectives, which has determined the development of institutions, policies and management measures: 'The Great Divide'.⁵ The first group consists of the activities associated with the conservation of species of flora and fauna and their habitats. Strongly dependent on the biological sciences for description and evaluation of conservation interest, this can be called 'ecological conservation', for want of a better term. The second major strand of conservation is that associated with the aesthetic value of natural features, where description and evaluation rely not on the natural sciences but on subjective assessment of 'quality'. Whereas the emphasis in ecological conservation is the protection of wildlife, the emphasis of 'aesthetic conservation' is to protect whatever society happens to find visually attractive and amenable to various non-consumptive uses.⁶ The superficial logic of this distinction has long been institutionalised, to the extent that ecological conservation has become largely the prerogative of biological scientists conducting 'objective' research

and protecting ecologically valued *wildlife* from the harsh rigours of survival in a less scientifically valuable man-made environs.⁷ Meanwhile, aesthetic conservation has become the realm of social scientists, planners and environmental designers, trying to assess what *people* enjoy and provide accordingly for them.

However, this division has always had its critics. During the earliest inception of conservation as a sphere of public policy, there were those who either did not regard the two elements as separate, or recognised within each group a great complexity of issues, or both.⁸ Wildlife can be valued for subjective aesthetic reasons, and many valued landscapes contain scientifically interesting wildlife and habitats. Conversely, it has been argued that the large input of scientific expertise which ecological conservation requires should not be diluted by the needs of aesthetic uses, even if the management of both is not institutionally separated.⁹

The protection of geological and geomorphic features is a strand of conservation which seems particularly ill-suited to a strong science-aesthetics division. The objective may be scientific, to protect features which can yield information on the Earth's geological history, or aesthetic, since geological features of high scientific value are frequently visually striking or are a significant element of the cultural or recreational environment at their location. In the majority of cases, the site will probably be valued for both reasons. Responsibility for the conservation of outstanding geological features in Britain has always been a matter principally for the scientific conservation agencies, despite the close relationship to amenity and landscape protection.

In 1990-91, the conservation agencies were reorganised. Official responsibility for ecological and aesthetic conservation is now vested in a new set of organisations, which include independent agencies in Wales and Scotland, each of which is concerned with both strands of conservation in their respective countries. The old division of responsibility remains essentially unchanged in England, however.¹⁰ As the newly formed conservation bodies begin to formulate short and long term policies which will affect conservation in the countryside and at the coast, it is worthwhile looking at some of the more profound distinctions between the many facets of environmental conservation which transcend the broad division between ecology and aesthetics outlined above, and particularly at how such considerations might affect coastal conservation. The coast has always been treated as boundary, a line where one set of political, administrative and legal considerations stops and another set takes over. The shoreline as a scientific and perceptual boundary also appeals to common sense, but a complex of relationships between land and sea has become apparent in this century, connected to a great extent with large scale environmental problems of various sorts. The coast is also a wide boundary zone rather than a discrete line, with its own particular characteristics.

CONSERVATION ISSUES AND THE COAST

Conservation ethics

Firstly, we should consider the philosophical bases for conservation. With apologies to environmental philosophers for such extreme simplification, we can say that standpoints in the debate over ethical duties to the natural world vary along a wide and continuous spectrum, from recognition of duties only to other humans, through moral considerability for animals (often equated with ‘animal rights’), for all living things, for ecosystems and ultimately for the whole planet (or super-ultimately for the universe). A major point of divergence in this continuum is between the ‘anthropocentric’ and the ‘ecocentric’ positions. In the former, there is a duty to protect and conserve natural features because, and only because, they serve human needs of one sort or another. In the latter, natural features have ‘intrinsic value’, or a ‘right to existence’ which transcends their utility to humans.¹¹

A detailed investigation of the ethics which have guided the development of conservation policies and institutions is beyond the scope of this discussion, but worth pursuing, since many environmental issues which appear to be practical or factual matters are rooted in moral uncertainties and conflicts, that are much harder to resolve.¹² Aesthetic conservation is anthropocentric more or less by definition, since it is concerned with what humans subjectively value. Ecological conservation can be either anthropocentric or ecocentric in original motives, but has rarely been justified in decision-making arenas using ecocentric arguments; recognisable utility is what wins votes.

One of the many catch-phrases in conservation parlance is ‘natural heritage’. The use of the term heritage to describe the natural world became widespread in the 1960’s and 1970’s, in the context of a new internationalist attitude to resource issues.¹³ Arvid Pardo, Maltese delegate to the United Nations in 1967, famously described the ocean floor as the “common heritage of mankind” during the UN Law of the Sea negotiations.¹⁴ The 1972 United Nations Conference on the Human Environment explicitly recognised that wildlife should be conserved because it was everyone’s heritage, and the World Heritage Convention of 1972 owes its origin to the common heritage principle.¹⁵ Scotland’s new nature conservation agency now has the term even in its name.¹⁶

The Oxford English Dictionary defines heritage as “that which has been or may be inherited”. It defines ‘inherit’ as “to take or receive as heir of the former possessor”, or “to get or come into possession of, by legal descent or succession”. Heritage conservation therefore clearly implies human ownership, coupled of course with a duty to pass on those possessions undamaged to future generations. Words are important and this goes beyond mere semantics.¹⁷ The notion that the biosphere consists entirely of humankind’s rightful heritage is already enshrined

in legislation and institution mandates, putting it on a par with great buildings, poetry and works of art. As Pardo and many others asserted more than two decades ago, the common heritage ethic is hugely preferable to treating arbitrary chunks of the biosphere as national property, but it should not preclude the potential contribution that ecocentric ethics might make to conservation.¹⁸ The 1982 United Nations World Charter for Nature recognises the intrinsic value of all species,¹⁹ but such recognition has not carried very far.²⁰

If we recognise that natural features deserve protection only because it is in the broader human interest to protect them, there is no reason to treat marine features in an ethically different manner to terrestrial ones, unless we can determine the relative utilities, known and potential, of each. Wide public debate of the common heritage principle originated in the context of marine resources, since (a) until the 1970s they were largely outside national jurisdictions, and (b) the activities of individual states had clearly perceived effects on others.²¹ The common heritage ethic has now come ashore. Countries which have globally important terrestrial resources like rainforests inside their borders, or which produce globally significant contributions to atmospheric pollution, are under international pressure to consider the 'common interest' in their resource exploitation and waste disposal activities.

If on the other hand we recognise that natural features have intrinsic value regardless of any utility to humans, again there is no logical reason why this should apply any less to marine or aquatic features than to terrestrial ones. We might try to distinguish species according to other criteria, such as their intelligence, or their ability to feel pain, or whether they photosynthesise (as animal rights advocates variously do), but certainly not on the basis of whether they live in the sea or not. The ambivalence of humans' ethical relationships with nature is particularly apparent in marine environmental matters; for instance whales and cetaceans have long been thought to be the most intelligent non-human species on the planet, yet society has long tolerated their direct exploitation and the disruption of their habitats.

Different objectives in ecological conservation

Even if we confine our attention to ecological conservation, and do not distinguish between different environmental ethics, it is possible to distinguish a great range of objectives and reasons behind protecting species and ecosystems. Numerous different objectives of nature conservation have been identified.²²

The maintenance of biodiversity²³ can be seen as both an economic and an ethical objective. Species that currently have no known utility can be deemed worthy of survival, either for their possible future direct or indirect utility, or because they have a right to continued existence. The distinguished biologist Edward O. Wilson estimates that there are somewhere between 5 and 30 million different species of organisms on the planet.²⁴ Such uncertainty is justified since

only about 1.4 million of them have so far been described. Estimating the number of marine species is even more difficult. G. Carleton Ray points out that, in the absence of good data from the deep oceans, the generally accepted estimate that 20 percent of all species are marine may be seriously in error.²⁵ In any case, comparing numbers of species in different environments is surely an academic exercise, since the goal of biodiversity conservation is to maximise global biodiversity; terrestrial, marine, subterranean, aquatic, arboreal, glacial and atmospheric. Furthermore, species-richness is not the only measure of diversity, and even if the oceans do contain less species, they are exceptionally rich in phyla.²⁶ Given the fact that the species composition of the oceans is so little known compared to the land, it could be argued that we should hedge our bets and give marine biodiversity conservation some attention more akin to that which tropical forests deservedly receive.

Another closely related strand of ecological conservation (although the detailed links with biodiversity are far from clear) is the maintenance of particular assemblages of life as known 'life-support systems' for the planet. The object is to protect ecosystems because of the role they play in the healthy functioning of the biosphere. Again, this may stem from enlightened self-interest or from recognition of the moral considerability of the non-human world. The oceans occupy two thirds of the Earth's surface. To try to describe the importance of their role in climate regulation, hydrological cycles and the geological processes which have provided the human race with its material resources is like describing the importance of oxygen to organic life. Of course the maintenance of marine *ecosystems* is not necessarily essential to the maintenance of climate, geological processes and hydrological cycles,²⁷ but even leaving aside any question of ensuring the continuance of these long term processes for the benefit of future generations (or indeed the welfare of this one when it gets older), there is the more immediate value of marine ecosystems. The oceans provide some 20 to 25 percent of the world's protein. Regionally this figure is much higher; up to 90 percent in some island and coastal Asian states.²⁸ The role of marine ecosystems as enormous waste processing facilities, desirable and ethical or not, cannot be overestimated.

A third element is the protection of species and habitats which provide cultural resources, in other words which are the basis for science, art, education, recreation and religion. Individual species and particular assemblages of species can be cultural resources as well as being part of the functioning of the biosphere. Fishing is one of the most long-lived and widespread hunter-gatherer activities; millions of people all over the world can appreciate, via film and television, the coral reef communities of tropical seas; marine mammals pervade the mythologies of many traditional societies, and the popular cultures of many post-industrial ones, to an extent matched by very few terrestrial species. We could not begin to discuss here the relative cultural, artistic, scientific, psychological and theological importance of marine wildlife and terrestrial wildlife in even one

part of the globe. There is no reason to regard the historic and present day cultural associations of the sea, its physical presence and its life forms, as any less significant or worthy of consideration than the land.

Environmental conservation for cultural purposes can be a common ground between ecology and aesthetics, when the same features become the object of conservation. However, conservation of wildlife for aesthetic reasons and for scientific reasons are not always compatible. In the early years of British nature conservation, for example, a certain amount of tension existed between ecologists, whose scientific interests concentrated on the typical and representative, and aesthetic conservationists, who tended to value the unusual and distinctive.²⁹ To decide which deserves to be allocated scarce public funds is not a simple matter. As more of the Earth's natural habitats are destroyed, the protection of representative samples becomes vital, but there is a concomitant increase in rarity of certain species and communities.³⁰

The protection of rarity, as opposed to representativeness, in the marine environment is often not regarded as an imperative to the same extent as on land, since most marine species are regarded as being less prone to outright extinction than terrestrial ones.³¹ However, given the poor state of knowledge on the composition of many marine communities, it is more than possible that the massive alteration of marine ecosystems by fishing and pollution may be causing the loss of never-to-be-discovered plants and invertebrates, as well as the more obvious decline of many marine mammals, birds, fish and reptiles.³²

The relative value of rarity and representativeness is important to another objective of ecological conservation, the collection and understanding of environmental information. An area can be designated and protected from certain damaging activities so that the habitats within it can function as an ecological 'pulse' for the state of the wider environment. By controlling the impact of factors inside the area, the effect of large scale forces originating outside it can be measured. The primary object of conservation is the information that species and habitats provide, rather than the species themselves, and the emphasis is on sites and species which represent their wider surroundings rather than stand out from them. It follows directly from the tremendous importance of marine ecosystems so far described, that the designation of areas as sample sites for monitoring of broader environmental conditions is just as important in the sea as on the land. In many ways, the sea as the 'ultimate sink' for environmental pollutants makes marine pulse sites especially important.

The maintenance of populations of known commercially useful species of flora and fauna, which might be considered a fifth type of ecological conservation, is rather different. Most commercially useful species of plants and animals are so useful they have been domesticated to ensure reliable supplies. The fact that agriculture usually entails the replacement of complex natural habitats with simple artificial ones means that protecting the interests of agriculture cannot be regarded as ecological conservation in the same sense as the objectives already

discussed. However, it is much easier to associate fishing as an economic activity with ecological conservation than it is agriculture. Agriculture relies on reducing species diversity and controlling as many environmental variables as possible to maximise the productivity of artificially created species. Fishing relies on the abundance of wild species in natural, and still poorly understood ecosystems, and the need to maintain healthy natural ecosystems has long been accepted by fisheries scientists. Only in aquaculture does the commercial use of marine species begin to resemble agriculture.

The wisdom of treating the coast as a boundary for many of the operational aspects of ecological conservation could certainly be debated further with specific examples of land-sea interdependence and independence. Pragmatically speaking, the need for an ecological conservation approach which transcends the shoreline depends on the nature of the species and habitats concerned and the threats from which they need to be protected. Shore birds need more protection from the oil discharges of vessels offshore than from, say, whaling; marine fish need protection from the river borne discharges of inland factories, but probably not from illegal wild flower pickers on the cliff tops.

Landscape conservation

Leaving aside for a moment the issues surrounding ecological conservation, the interests of agriculture can play a major role in aesthetic conservation, where it is precisely those agricultural practices and the 'cultural landscapes'³³ they produce that are deemed worthy of protection.³⁴ Both natural and man-made landscapes feature in valued (and protected) landscapes around the world.³⁵ In Britain however, thousands of years of agriculture and land management mean that there are no natural landscapes to value, and British protected landscapes are as much about cultural conservation as about environmental conservation. Britain's ten National Parks for instance (of which one is entirely coastal, and four others have some coastal frontage) are home to some quarter of a million people, and are dotted and crossed by farms, towns, mines, reservoirs, roads and power lines.³⁶ The companion designations to the National Parks, the 39 'Areas of Outstanding Natural Beauty' (half of which have some coastal frontage), generally contain even more human use and modification, being mainly in lowland areas closer to urban centres.³⁷ Although the landscapes valued as National Parks are certainly man-made, they are also where natural processes are seen to predominate, where human activities conform to rather than override environmental processes. Landscapes in Britain cannot be categorised into artificial and wild, but vary along a continuum of degree of modification. Depending where into this continuum they fit, agricultural practices can conflict or conform with the needs of wildlife conservation. The relationship between conservation of wildlife and cultural landscapes is as ambivalent as that between ecological conservation for scientific and aesthetic reasons.

The coast may be a perceptual and administrative boundary for certain aspects of ecological conservation, but from the point of view of aesthetic conservation a very different situation pertains. Satisfactory protection of coastal landscape requires protection of features on both sides of the shoreline; it is precisely the visual juxtaposition of land and sea that is valued. An effective coastal land designation concerned with aesthetic qualities and amenity value requires that the area of adjacent sea that is within view be protected as well, unless those appreciating the scenery must forever look to landward. Similarly, marine recreationists are 'users' of the coastal landscape they can see from the water. The shoreline therefore cannot be considered a boundary from an aesthetic point of view, yet in Britain the control of developments on either side of it is under completely separate systems of management, and marine management regimes are rarely concerned with visual impacts. As with landscape, visual impairment of coastal seascape is a subjective matter, but popular opinion on the contribution to scenic beauty of vessel moorings, oil drilling platforms, fish farm cages, tidal barrages and visible wrecks would probably tend towards the negative.

Seascape conservation

The notion that true seascape, without any land in it and independently of marine wildlife, needs to be protected for its aesthetic value may seem far-fetched, and certainly has not to the author's knowledge received explicit recognition in any public policy for conservation. The visual appearance of the sea surface is in an essentially uncontrollable state (apart from the undoubted human ability to place large quantities of unattractive substances on it), being mostly dependent on the weather and the position of celestial bodies. The appearance of the sea surface has inspired many great works of art and eloquent literary passages,³⁸ but the transient nature of such beauty, together with basic physics, makes nonsense of any notion that it can be actively protected. An exception is protection from pollution, but such protection is rarely justified on the grounds that pollution impairs the aesthetic experience of the sea surface. Below the surface, there is the scenic value of the water column and seabed to consider. A handful of scuba diving friends have assured the author that seabed topography, in suitably clear water, can and does provide a degree of recreational and aesthetic interest which is distinct from the interest of its wildlife.³⁹ For most humans, appreciating seabed topography to the same degree of sophistication as landscape is a considerable intellectual and physiological challenge, but there is at least something of a truly marine counterpart of landscape appreciation. However, the development of seabedscape evaluation techniques and ways of controlling seabedscape impairment are completely uncharted waters.

On the subject of valuable natural and man-made seascapes, the latter is a very rare phenomenon, partly for the reasons of uncontrollability mentioned

above, and partly because the type of visual alterations humans have effected in the marine environment are not generally regarded as desirable. Visual alteration of seabed topography comes in several forms: the removal of material (dredging) and the addition of material (dumping, shipwrecks, construction). It is a fairly safe contention that only the latter two of these processes can offer any scope for underwater scenic enhancement, and such scope is marginal at best. The value of wrecks and subsea structures as man-made underwater scenery (apart from their possible role in ecological enhancement) is dependent, as with almost any form of historic artefact, on their age, and is perhaps outside the realm of environmental conservation anyway. It is also largely the preserve of scuba divers, except where film and television can show them to a wider audience. With the exception of public sensitivity towards the sanctity of wartime and other recent wrecks, the popular value of historic wrecks and other submerged artifacts is often enhanced by their removal from their place of rest so that the non-diving public can appreciate and value them.

CONCLUSION

The superficial clarity of the old division of responsibilities for conservation in Britain belies the extremely complex conceptual and theoretical bases for environmental conservation. It remains to be seen whether the new administrative structure will be able to address the range of issues more effectively. Furthermore, a broad examination of what constitutes conservation and how it relates to the coast raises some quite fundamental questions about the coast as a boundary for administrative purposes. That it is still treated as such is not so much accidental or misguided as due to the persistence of the influence of a very limited range of perceptions arising from patterns of use of marine resources.

Fishing and transport (for commercial and military purposes) were until comparatively recent times, the only large scale uses of the seas around Britain.⁴⁰ In all three industries, there is a clear logical division between water side and land side operations, and the legal regimes affecting each continue to be separate and very different. One of the next major sea uses to emerge was waste disposal. Land and water considerations were still seen as essentially separate; if you place your waste materials far enough offshore they are unlikely to trouble you again. Land activities were probably having impacts on the sea, but it was a one way relationship. Early sea use conflicts arose, particularly between waste disposal and one of the next major categories of sea use to develop on a large scale, recreation, when waste materials turned up in areas favoured by recreationists. In many cases of course the recreationists themselves were the origin of some of the waste; in other instances, shipping accidents and incidents were the culprits. When unpleasant substances found their way from the sea back onto the land, it was the dim beginnings of the recognition of a close and two way land-sea

relationship. Rapidly developing marine sciences were also suggesting a far more complex set of environmental relationships than previously supposed. Offshore hydrocarbon industries also developed, bringing with them the direct and easily perceived threat of major impacts on coastal land from offshore activities, and some of the earliest calls for a reorganisation of coastal administration.

In response to growing impacts and threats, conservation as a 'use' of coastal space emerged, partly from aesthetic and partly from ecological interests, although as has been discussed, the objectives were far more complex. Most aspects of coastal conservation do not conform well with an administrative and legal regime which distinguishes categorically between land and sea, and to boot is a confused jumble within the boundary zone. Even where marine and terrestrial conservation differ fundamentally, these differences are much reduced in the coastal zone. To add further to these difficulties, some of the real issues in conservation do not sit well with the British institutional structure under which they were until recently managed. Some of the problems that have appeared with the painful development of coastal conservation have highlighted the administrative inadequacies with respect to ecological and aesthetic conservation, as well as with respect to the problems of coastal management.

The recent unification of responsibilities for ecological and aesthetic conservation in Wales and in Scotland outlined earlier, will hopefully benefit marine conservation interests, since it is much harder to separate the aesthetic and recreational use of the sea from its wildlife than in terrestrial conservation with the high values the latter places on artificial landscapes. The tremendous difficulty of designating effective marine protected areas in United Kingdom waters, due to a strong tradition of 'freedom of the sea' and weak legislation⁴¹ also indicates that marine ecological conservation will have to be completely integrated with marine aesthetic conservation and, more to the point, its recreational participants. The wisdom of persisting with the old division of conservation responsibility in England must be seriously questioned.⁴²

Regarding the overall administration of coastal areas, perhaps coastal and marine conservation are too recent a mass focus of concern in Britain to have effected major changes in a field in which much longer-established concerns like development planning and pollution control have been unable or unwilling to alter basic attitudes. Institutions are generally slow to respond to scientific advance, especially where entrenched economic interests are involved. But conservation, even if only in an anthropocentric sense of sustainability, is already becoming more than just a use of the natural environment, but a guiding ethos for other policy areas. It can only be applied to the coast and the sea if we fully understand what 'conservation' means, and we reappraise our perceptions of the coast as a boundary.

Today a little more land may belong to the sea, tomorrow a little less. Always the edge of the sea remains an elusive and indefinable boundary.⁴³

NOTES

¹ See Department of the Environment 1992 and Department of the Environment and Welsh Office 1992.

² See also Cole-King 1993.

³ Nicholson 1987, Ch. 4.

⁴ The 1949 Act created the National Parks and Nature Reserves systems and the public bodies to manage them. Government involvement in conservation thus came much later than in North America or Australia, where the first National Parks had been established over 70 years earlier.

⁵ MacEwen and MacEwen 1987, p.14, and Sheail 1984.

⁶ The development of ideas and policies in British nature conservation is well described in, for example, Stamp 1969, Sheail 1976, Mabey 1980, and Moore 1987.

⁷ The government body responsible for ecological conservation was until 1973 a scientific research council.

⁸ As early as 1931, The first National Parks Committee, while recognising that the interests of nature conservation and recreational use of the countryside did not always coincide, still proposed a single authority to manage both, since it envisaged that many 'Nature Sanctuaries' would fall within 'National Reserves' (i.e. National Parks). (Addison 1931.)

⁹ See MacEwen and MacEwen 1982, pp. 16-17, and Warren 1991.

¹⁰ The form of the reorganisation in fact owes more to political manoeuvring than to consideration of the interests of conservation.

¹¹ The history of environmental ethics is described by Nash 1987, while a basic introduction to some of the issues is contained in Elliot and Gare 1983.

¹² Mabey 1980, pp. 24-25, and Miller and Kirk 1992.

¹³ The term had been used before by the eminent British ecologist Arthur Tansley (1945). It eventually became a collective noun for all the components of the natural world, including geographic and geological features, as opposed to just resources or wildlife (see for example Radford et al. 1981).

¹⁴ "The seabed and the ocean floor are a common heritage of mankind and should be used and exploited for peaceful purposes and for the exclusive benefit of mankind as a whole." United Nations General Assembly 22nd Session, Official Records, First Committee, 1516th Meeting, 1 November 1967, para. 13.

¹⁵ See Lyster 1985.

¹⁶ "Scottish Natural Heritage".

¹⁷ As another example, the use of the word 'conservation' for so many different and often conflicting purposes has not assisted the development of policies concerned with the environment as a whole. In the early conservation movement in the US, the word became virtually synonymous with resource management (see Pinchot 1947). Since then, it has acquired negative connotations of exclusion and prohibition, so that 'conservationists' are often automatically branded as narrow in outlook and unrealistic.

¹⁸ The whole environmental ethics debate is potentially extremely important, yet certainly in Britain, receives little public and political attention outside the learned circles of academic philosophy. Rightly or wrongly, some of the more provocative aspects like animal liberation have sometimes gained notoriety from scepticism or even ridicule, which has overshadowed serious consideration of other non-anthropocentric philosophies in policy making arenas.

¹⁹“Every form of life is unique, warranting respect regardless of its worth to man.” United Nations General Assembly Official Records, 37th Session, 1982, Supplement No. 51, p. 17.

²⁰Porritt 1992.

²¹Future mineral exploitation of the seabed was the most contentious issue at the Law of the Sea negotiations, but the fishing of transboundary stocks, and transboundary effects of marine pollution were already major issues.

²²See for example, Adams and Rose 1978, and Warren and Goldsmith 1983.

²³Biodiversity can refer to genes, species or habitats, in other words it can refer to variety within individual species and between communities, as well as between species.

²⁴Wilson 1988, p. 5.

²⁵Ray 1988.

²⁶Ray 1988, and Angel 1992.

²⁷Although oceanic biota play a major role in global carbon fluxes (see for example Bolin et al. 1979) and of course all fossil fuels are organic in origin.

²⁸Miller 1992 p. 377.

²⁹Adams and Lowe 1981.

³⁰In O'Connor et al. 1990, it is argued that a system for protection of representative habitats should underpin conservation strategies, and be supplemented by additional measures to protect rarity. Mabey 1980, pp. 33-4, points out that common species are what keeps the world ‘ticking over’, and limited resources for conservation agencies must not force them into “a potentially dangerous preoccupation with the exotic and the rare”.

³¹Polunin 1983.

³²The need for greater awareness of marine biodiversity issues is discussed by Beatley 1991 and Cognetti and Curini-Galletti 1993.

³³See for example Salter 1971.

³⁴See for example Countryside Commission 1984, and Anon. 1987.

³⁵Lucas 1992.

³⁶MacEwen and MacEwen 1987, p.5.

³⁷Anderson 1981.

³⁸John Muir, the wilderness preservationist and founder of the Sierra Club in the US, was greatly impressed by his first sea voyages, and wrote of a storm, “I could see no striving in those magnificent wave-motions, no raging; all the storm was apparently inspired with nature’s beauty and harmony. Every wave was obedient and harmonious as the smoothest ripple of a forest lake, and after dark all the water was phosphorescent like silver fire, a glorious site.” (Muir 1916, p. 146.)

³⁹A scattering of articles in the diving journals also describe the scenic interest of particular underwater sites as well as their wildlife interest. See for example “Blue holes of South Andros”, *Diver* 1985, **30**(7): 25, “Gozo, the pretty one” *Diver* 1985 **30**(9): 29,31, and “The fabulous Farnes”, *Diver* 1987 **32**(7): 28-29.

⁴⁰See Smith and Lalwani 1984, or Couper 1989, pp. 208-17.

⁴¹Gibson 1984, and Warren 1990.

⁴²In February 1994, the UK government tentatively announced a proposal to merge the two English conservation agencies. Aesthetic and scientific conservation on land are becoming increasingly difficult to separate, and the influence of marine issues on this development has probably been fairly limited.

⁴³Carson 1955, p.1.

REFERENCES

- Adams, W. and Lowe, P.D. 1981. "Continuity and change: science and values in nature conservation strategies". In C. Rose (ed.) "Values and Evaluation", Discussion Papers in Conservation 36, pp. 1-10, University College London.
- Adams, W.M. and Rose, C. 1978. "The selection of reserves for nature conservation", Discussion Papers in Conservation 20, University College London.
- Addison, C. 1931. The Report of the National Park Committee. Cmd. 3851, London, Her Majesty's Stationery Office.
- Anderson, M.A. 1981. "Historical perspectives on the role for AONB's: Recreation or preservation?" Occasional Papers 3, Department of Environmental Studies and Countryside Planning, University of London.
- Angel, M.V. 1992. "Managing biodiversity in the oceans", Oceanology International 92 Conference, Brighton, UK, 10-13 March.
- Anon. 1987. *The Lake District Declaration*. Adopted by the participants at the International Symposium on Protected Landscapes, Cumbria, England, 5-10 October, Cheltenham, UK, Countryside Commission.
- Beatley, T. 1991. "Protecting biodiversity in coastal environments: Introduction and overview", *Coastal Management* 19(1): 1-19.
- Bolin, B. et al (eds.) 1979. *The Global Carbon Cycle*. SCOPE Report No. 13, New York, John Wiley.
- Carson, R. 1955. *The Edge of the Sea*. London, Staples Press Ltd.
- Cognetti, G. and M. Curini-Galletti, M. 1993. "Biodiversity conservation problems in the marine environment", *Marine Pollution Bulletin* 26(4): 179-183.
- Cole-King, A. 1993. "Marine conservation: A new policy area", *Marine Policy* 17(3): 171-185.
- Countryside Commission 1984. *Agricultural Landscapes: A policy statement*. Cheltenham, UK, Countryside Commission.
- Couper, A.D. (ed.) 1989. *The Times Atlas and Encyclopaedia of the Sea*. London, Times Books.
- Department of the Environment 1992. *Coastal Zone Protection and Planning: The Government's Response to the Second Report to the House of Commons Select Committee on the Environment*. London, Her Majesty's Stationery Office.
- Department of the Environment and Welsh Office 1992. *Planning Policy Guidance: Coastal Planning*. PPG20, London, Her Majesty's Stationery Office.
- Elliot, R. and Gare, A. (eds.) 1983. *Environmental Philosophy*. Milton Keynes, UK, Open University Press.
- Gibson, J. 1984. "Marine Nature Reserves", *Journal of Planning and Environmental Law*, 699-706.
- Lucas, P.H.C. 1992. *Protected Landscapes*. London, Chapman & Hall.
- Lyster, S. 1985. *International Wildlife Law: An analysis of international treaties concerned with the conservation of wildlife*. Cambridge, Grotius.
- Mabey, R. 1980. *The common ground: A place for nature in Britain's future*. London, Hutchinson.
- MacEwen, A. and MacEwen, M. 1987. *Greenprints for the Countryside?: The story of Britain's national parks*. London, Allen & Unwin.

- MacEwen, A. and MacEwen, M. 1982. *National Parks, Conservation or Cosmetics?* London, George Allen and Unwin.
- Miller, G.T., Jr. 1992. *Living in the Environment*, Seventh Edition. Belmont, California, Wadsworth.
- Miller, M.L. and Kirk, J. 1992. "Marine environmental ethics", *Ocean and Coastal Management* **17**(3/4): 237-251.
- Moore, N.W. 1987. *The bird of time: The science and politics of nature conservation*. Cambridge, Cambridge University Press.
- Muir, J. 1916. *A Thousand Mile Walk to the Gulf*. Dunwoody, Georgia, Norman S. Berg.
- Nash, R.F. 1987. *The Rights of Nature: A history of environmental ethics*. Madison, University of Wisconsin Press.
- Nicholson, E.M. 1987. *The New Environmental Age*. Cambridge, Cambridge University Press.
- O'Connor, K.F. et al 1990. *Land evaluation for nature conservation*. Wellington, New Zealand, Department of Conservation.
- Pinchot, G. 1947. *Breaking New Ground*. New York, Harcourt Brace and World.
- Polunin, N.V.C. 1983. "Marine 'Genetic Resources' and the potential role of protected areas in conserving them", *Environmental Conservation* **10**(1): 31-41.
- Porritt, J. 1992. "The Common Heritage: What Heritage? Common to Whom?", *Environmental Values* **1**(3): 257-267.
- Radford, A.E. et al 1981. *Natural Heritage: Classification, Inventory, and Information*. Chapel Hill, North Carolina, University of North Carolina Press.
- Ray, G.C. 1988. "Ecological diversity in coastal zones and oceans". In Wilson 1988, pp. 36-50.
- Salter, C.L. 1971. *The Cultural Landscape*. Belmont, California, Wadsworth.
- Sheail, J. 1976. *Nature in Trust: A history of nature conservation in Britain*. Glasgow and London, Blackie.
- Sheail, J. 1984. "Nature Reserves, National Parks and postwar reconstruction in Britain", *Environmental Conservation* **11**(1): 29-34.
- Smith, H.D. and Lalwani, C.S. 1984. *The North Sea: Sea use management and planning*. Cardiff, UK, UWIST Centre for Marine Law and Policy.
- Stamp, L.D. 1969. *Nature Conservation in Britain*. London, Collins.
- Tansley, A.G. 1945. *Our heritage of wild nature: a plea for organised nature conservation*. Cambridge, Cambridge University Press.
- Warren, A. and Goldsmith, F.B. 1983. "An introduction to nature conservation". In A. Warren, and F.B. Goldsmith (eds.) *Conservation in Perspective*, pp. 1-15. Chichester, John Wiley & Sons.
- Warren, L.M. 1990. *Statutory Marine Nature Reserves in Great Britain: A Progress Report 1989*. Godalming, UK, World Wide Fund for Nature.
- Warren, L.M. 1991. "Conservation – a Secondary Environmental Consideration", *Journal of Law and Society* **18**(1): 64-80.
- Wilson, E.O. 1988. "The current state of biological diversity". In E.O. Wilson (ed.) *Biodiversity*, pp. 3-18. Cambridge, Massachusetts, Harvard University Press.