



PII: S0308-597X(98)00056-6

Marine nature reserves in Britain: past lessons, current status and future issues

Peter J S Jones

Introduction

This paper reviews experiences with voluntary and statutory marine nature reserves in Britain, and considers what lessons can be applied to the designation of 39 marine special areas of conservation that are currently being pursued under the Habitats Directive. It is argued that these experiences indicate that cautious approaches which provide for the meaningful participation of stakeholders can be successful in both achieving nature conservation objectives and promoting cooperation, and that a reliance on statutory powers can exacerbate conflicts and undermine the potential for cooperation. It is concluded that there is a need to put concepts into practice by shifting from the consultation-interpretation paradigm to one based on meaningful stakeholder participation and joint planning if the major opportunity provided by the Habitats Directive is not to be jeopardised. © 1999 Elsevier Science Ltd. All rights reserved

Keywords — Marine nature reserves; Voluntary versus statutory approaches; Marine SACs; Britain

Jackson Environment Institute, University College London, 5 Gower Street, London, WC1E 6HA, UK. Tel: 0171-692-5790; Fax: 0171-813-5283; E-mail: p.j.jones@ucl.ac.uk.

¹This paper is focused on sub-tidal MNRs which are themselves focused on marine
continued on page 376

It is widely recognised that there has been very little progress with Statutory Marine Nature Reserves (SMNRs) in Britain, only 2 having been designated since the providing legislation was enacted in 1981. However, Voluntary MNRs (VMNRs) have been relatively successful, the first one having been established in 1973, since when a further 18 have been established, of which 15 are still active. There now exists an unprecedented opportunity to designate 39 marine Special Areas of Conservation (MSACs) in order to fulfil the British government's obligations to the European Commission under the Habitats Directive. All of the sites put forward under these three initiatives and discussed throughout this paper are listed in Tables 1 and 2.

The purpose of this paper is to analyse past experiences in implementing VMNRs and SMNRs in Britain and to draw out lessons which it is argued should be heeded during the designation of MSACs¹. Firstly, the basic policies for VMNRs and SMNRs are introduced, including a consideration of their objectives and selection criteria. Secondly, the cautious, cooperative approaches adopted to manage VMNRs are compared to the legislation-driven approaches adopted to designate SMNRs employing case studies. Thirdly, the basic policy for MSACs in Britain and progress towards the designation of sites is reviewed. Finally, the approaches that have been proposed to formulate management schemes for MSACs are analysed in the light of the experiences with VMNRs and SMNRs, and the lessons to be learned from these experiences with regards to the future prospects for successfully implementing the Habitats Directive in the marine environment are considered.

Voluntary MNRs

These have been described as a peculiarly British phenomenon [1] since they are almost entirely reliant upon the voluntary principle² whereby the

Table 1. MSACs in Britain

Candidate MSACs	Conservation features ^a	VMNRs/SMNRs encompassed (Table 2)
Berwickshire and N. Northumberland Coast ^b	M, R, C, GS	St Abb's and Eyemouth VMNR/shelved SMNR; Lindisfarne shelved SMNR
Flamborough Head	R, C	
The Wash and N. Norfolk Coast ^b	S, M, I, CS	
N. Norfolk Coast and Gibraltar Point Dunes	L	
Benacre-Easton Barents Lagoons	L	
Orfordness-Shingle Street	L	
Essex Estuaries	E, M	
Thanet Coast	R, C	
Solent Maritime	E	
South Wight Maritime	R	
Solent and Isle of Wight Lagoons	L	
Chesil and the Fleet ^b	L	Chesil Bank and the Fleet VMNR
Plymouth Sound and Estuaries ^b	S, E, I	
Fal and Helford	S, M, I	Former Roseland VMNR, Helford VMNR
Isles of Scilly Complex	S, M	Isles of Scilly VMNR/shelved SMNR
Lundy	R	Lundy SMNR/former VMNR
Severn Estuary ^c	S, E, M	
Burry Inlet: Saltmarsh and Estuary	E	
Pembrokeshire Islands ^c	E, I, R, GS	Skomer SMNR/former VMNR
Cardigan Bay ^b	BD	Ceredigion VMNR
Llyn Peninsula and the Sarnau ^b	E, R	Bardsey Island VMNR/shelved SMNR
Morecambe Bay ^b	M, I	
Drigg Coast	E	
Solway Firth ^b	S, E, M	
Sound of Arisaig ^b	S	
Lochs Duich, Long and Alsh Reefs ^c	R	
Monach Islands	GS	
Obain Loch Euphoirt	L	
Loch Maddy ^b	L, I	
St Kilda	R, C	
Loch Roag Lagoons	L	
North Rona	GS	
Loch of Stenness	L	
The Vadills	L	
Papa Stour ^b	R, C	
Faray and Holm of Faray	GS	
Mousa	CS	
Dornoch Firth	E	
Moray Firth	BD	

^a S – Sandbanks; E – Estuaries; M – Mud and sand flats not covered by sea water at low tide; L – Lagoons (priority); I – Large shallow inlets and bays; R – Reefs; C – Submerged or partly submerged sea caves. GS – Grey seal; CS – Common seal; BD – Bottlenose dolphin.⁴³

^b Sites included in the UK Marine SACs LIFE Project (11).

^c Possible MSACs subject to ongoing consultations at time of writing (3).

⁴³ As well as these three species for which MSACs have already gone forward, there are another seven Annex II species for which sites could possibly go forward in Britain: Cetacea (all species), harbour porpoise, otter, lampern, sea lamprey, allis shad and twaite shad.

continued from page 375
nature conservation objectives and does not analyse the approaches employed, for instance, to manage the many intertidal sites which have been designated in Britain to conserve waterfowl, etc. For this reason the term MNR is used where appropriate as opposed to the general term Marine Protected Area (MPA).

² This principle is evident in much of the UK policy on nature conservation (C Reid, *Nature Conservation Law*, W Green, Edinburgh, 1994, pp 34–37), particularly that which applies to the marine environment below the Low Water Mark, where the absence of exclusive owners/occupiers, acquirable property rights and land planning provisions dictates that the enforcement policies underpinning terrestrial conservation cannot be applied.

³ The Marine Conservation Society often work with these trusts to support such
continued on page 378

cooperation of users of the area with conservation measures is encouraged rather than ordered. It has been argued that VMNRs were initially pursued in response to a lack of statutory provisions for SMNRs and were probably seen as a stop gap on the way to statutory protection, but that they have since proved to be valuable in their own right [2]. The key to VMNRs is the active involvement of local people who have an interest in the marine area in question, such as fishermen, anglers, divers, tourism concerns, etc. They are often initiated by the local County Wildlife Trust³ and, more recently, the local planning authority, but they are generally taken forward with the active participation of all interested parties with whom all management proposals are discussed in a careful and open manner. Such a cautious and participative approach is clearly beneficial given the reliance of such initiatives on the voluntary cooperation of users, and it is important that the benefits of this approach are not lost for those VMNRs that are encompassed by MSAC proposals. The conservation agencies often provide a contribution towards the funding for VMNR initiatives⁴, but they do not have any particular say in their management.

Table 2. VMNRs and SMNRs in Britain

Site ^a	VMNR	Main promoting body	SMNR	Proposed MSAC	Comments
Lundy ^b	(1973) ^c	Lundy Field Society	Designated SMNR 1986	Lundy	Mainly exposed reefs
Skomer ^b	(1976)	Dyfed Wildlife Trust	Designated SMNR 1990	Part of Pembrokeshire Islands	Mainly exposed reefs
Isles of Scilly	1989	Isles of Scilly Environmental Trust	Proposal shelved 1985 in face of extreme resistance in favour of VMNR	Isles of Scilly Complex	Sandbanks and sea grass beds of particular interest
Bardsey Island ^b	(1978)	Bardsey Island Trust	Selected 1982 but not pursued	Part of Llyn Peninsula and the Sarnau	Mainly exposed reefs; Informal/not widely recognised
St Abb's	1978	Local concerns initially but SWT since 1984	Proposal shelved when VMNR formalised 1984	Part of Berwickshire and North North'd Coast	Mainly exposed reefs; pursued due to concerns about diver impacts/conflicts
Loch Sween ^d	—	—	Proposal abandoned 1991	—	Tidal rapids of particular interest; proposal provoked extreme objections
Menai Strait	—	—	Proposed 1988, decision pending	—	Tidal rapids of particular interest
Lindisfarne	—	—	Selected 1982 but not pursued	Part of Berwickshire and North North'd Coast	Important for seals and seabirds
Roseland	(1982)	Cornwall Wildlife Trust	—	Part of Fal and Helford	Ceased to function shortly after established
Purbeck	1978	Dorset Wildlife Trust	—	—	Mainly exposed reefs
Wembury	1981	Originally Marine Biological Association but Devon Wildlife Trust since 1989	—	—	Mainly exposed reefs
Seven Sisters	1987	East Sussex County Council	—	—	Chalk reefs; extension of Country Park
Helford	1987	Cornish Biological Records Unit	—	Part of Fal and Helford	Various estuarine habitats but sea grass beds of particular interest
Ceredigion	1994	South Wales Heritage Coast Service	—	Part of Cardigan Bay	Wider marine/coastal interests, including bottlenose dolphins
North Devon (i.e. site within)	1994	North Devon Heritage Coast Service, Devon Wildlife Trust since 1998	—	—	Motivated partly by green tourism promotion
St Agnes	1997	Cornwall Heritage Coast Service	—	—	Mainly exposed reefs; motivated partly by green tourism promotion
Durlston	1995	Dorset County Council	—	—	Extension of Country Park
Looe	1995	District and County Councils	—	—	Motivated partly by green tourism promotion; various habitats
Polzeath	1995	North Cornwall Heritage Coast Service	—	—	Mainly exposed reefs; motivated partly by green tourism promotion;
St Mary's Island	1996	North Tyneside Council	—	—	Mainly exposed reefs
Fowey Estuary	1997	Fowey Harbour Commissioners	—	—	Associated with estuarine management plan
Chesil Bank and the Fleet	1997	Weymouth and Portland Borough Council	—	Part of Chesil and the Fleet	Associated with Portland Harbour management plan

^a Sites have variety of titles: marine park, voluntary marine conservation area, marine nature reserve, etc.

^b Prioritised by recent international MPA review (see footnote 23) as existing MPA that requires management support.

^c Years in brackets indicate that initiative no longer recognised as VMNR, i.e. succeeded by SMNR designation or inactive.

^d Prioritised by recent international MPA review (see footnote 23) as proposed MPA.

The objectives of VMNRs are focused on interpretation and awareness raising in order to encourage users, particularly recreationalists, to comply with codes of conduct, etc. and thus to conserve the marine ecological interest of the area, though they also provide a focus for research and monitoring programmes. As such these objectives might be considered to be secondary in that they provide a means of achieving primary conservation objectives.

Their selection is essentially an *ad hoc* process with many of the sites being exposed rocky areas designated to protect them from the impacts of the divers, educational parties and tourists with which they are popular. Nine of the sites were originally or have subsequently been selected as SMNRs and/or MSACs, but ten of them have not yet been identified as being of any more than local importance. It has been argued that, whilst such locally important sites may make a useful contribution to marine conservation, they are no substitute for sites which have been strategically selected on the basis of their national importance and that they should thus not be considered as part of a national system of MPAs [3].

Statutory MNRS

Prior to the Wildlife and Countryside Act (1981), there were no legal provisions to designate MNRS in Britain. However, the provisions under this Act⁵ for the designation of SMNRs were eventually only included as an amendment, following a concerted campaign by the Marine Conservation Society (MCS) and the World Wide Fund for Nature (WWF). The Government reluctantly included these provisions only through fear of losing the entire bill, after what was described as a saga of reluctance and feet dragging [1, col. 579]. It is thus not entirely surprising that there are many weaknesses in these provisions⁶, two of which are particularly significant. The first critical weakness is that none of the byelaws imposed by Nature Conservation Agencies (NCAs⁷) to protect SMNRs may interfere with the functions of any other relevant authorities. This means, for instance, that SMNR byelaws cannot be imposed under these provisions to restrict fishing, as this is the function of the government fisheries agency.

The second is related to the process by which decisions concerning SMNR proposals are made. It is required that such proposals are advertised and brought to the attention of all potentially interested and affected parties, who are invited to submit expressions of support, neutrality or objection to the NCA. In theory, the Secretary of State can approve an SMNR order that has been objected to by one or more parties, provided that these objections have been heard, considered and reported. In reality, the Secretary of State requires the NCA to overcome all significant objections, by persuasion or by modifying the proposal in order to appease the objectors. In effect, this requirement gives any parties that fear that their interests may be adversely affected by the proposal, such as fishermen, fish farmers, yachtsmen and divers, the power of veto over such proposals.

Section 36(1) of the 1981 Act states that SMNRs have, amongst others, two purposes: conserving marine flora and fauna of special interest, and providing special opportunities for study and research, which is generally focused on the establishment of long-term monitoring programmes to enable the identification of site specific and general trends. The secondary objectives of the proposed and designated sites often go beyond these primary scientific conservation objectives in that they generally include

continued from page 376

initiatives and have published a detailed guide to establishing and managing VMNRs which was endorsed by the UK Government's Minister for the Environment (S Gubbay, *Conservation of Marine Sites: a Voluntary Approach*, MCS, Ross-on-Wye, 1986).

⁴As the subsequent case studies illustrate, funding is also provided by private bodies, industry, local authorities, etc.

⁵Sections 36–37 and Schedule 12.

⁶For detailed discussions of these weaknesses, see L Warren, *Statutory Marine Nature Reserves in Great Britain: a Progress Report*, WWF, Godalming, 1989; J Gibson, 'Marine Nature Reserves in the United Kingdom', *International Journal of Estuarine and Coastal Law*, vol. 3, No. 4 1988, pp. 328–339; Reid, (see footnote 2) pp. 152–155.

⁷The term Nature Conservation Agency (NCA) is used to describe the statutory conservation authority known as the Nature Conservancy Council which was split into three national NCAs under the Environmental Protection Act (1990) and the Natural Heritage (Scotland) Act (1991): English Nature, Countryside Council for Wales and Scottish Natural Heritage.

the integration of various activities within the reserve with each other and with the requirements of marine conservation, and the advancement of awareness of the marine environment through the provision of facilities to encourage education, interpretation and enjoyment of marine natural history.

The 'initial' 8 SMNRs were selected in 1982 mainly on the basis of the expert opinion of marine NCA staff rather than the rigorous application of criteria, though it is not unusual for the first list of sites to be prioritised on this basis⁸. As most of the sites are in relatively remote locations and half of them were recognised as VMNRs, it was probably also presumed that their designation as SMNRs would be relatively straightforward. It is interesting to note that all of the proposed sites have a very high-energy environment characterised by rocky reefs which are very exposed to wave action and/or strong currents, 5 of the sites being islands. Such environments typically support unusual assemblages of species which are of particular interest to marine ecologists, therefore it could be argued that what might be termed 'specialist intrinsic appeal' significantly influenced the selection of these sites⁹.

However, the sites also generally include more sheltered low-energy environments in the lee of the island, or headland, or in embayments, etc. They thus exhibit, within a single integral site, a wide range of different environments and are therefore particularly important in that they are 'hotspots' of biotope¹⁰ and species richness. All of the sites besides Lindisfarne are also of national biogeographic importance in that they are at the limits of the range of several warmer or colder water species. However, whilst such peripheral populations of species may be nationally rare or scarce and therefore represent a British conservation priority¹¹, it is important to note that there are no known marine invertebrate species which are indigenous to Britain [4]. Therefore, all such species which are rare or scarce in Britain are generally common in more northern or southern latitudes.

Comparative case studies¹²

Lundy

Lundy is an exposed island in the mouth of the Bristol Channel in SW England. It was originally established as a VMNR in 1973 by the local naturalist society as a result of interest stimulated by divers who had recorded a number of warm water species at the northern limit of their distribution such as the sunset coral and the pink sea fan. This led to the publication of a management policy and a visitors' code of conduct, and in 1979 a voluntary ban on the introduction of suction dredging for scallops was agreed with the Devon Sea Fisheries Committee (SFC)¹³. In 1982 a public meeting was organised by the NCA to discuss a draft management plan for the VMNR and to gauge public attitudes to SMNR designation, but divers and fishermen felt that the VMNR was working well and both were opposed to statutory measures. A major issue was the internal conflict between the two sectors, the divers fearing that they would be banned from collecting shellfish whilst the commercial fishermen were able to continue, and vice versa, rather than there being significant basic conflicts between either of them and marine conservation interests¹⁴.

Despite this opposition and the clear potential for internal conflict, a draft SMNR management plan was subsequently produced¹⁵, one of the

⁸This approach is consistent with the argument that the first MPAs to be selected are often so obvious that there is no need to apply criteria (R V Salm and J R Clark, *Marine and Coastal Protected Areas: a guide for planners*, IUCN, Gland, Switzerland, 1984, p 222).

⁹Such selection bias is not confined to the UK: high exposure, high current and hard substrate environments were also found to have a greater representation in British Columbia's MPA system (M A Zacharias and D E Howes, 'An analysis of marine protected areas in British Columbia, Canada, using a marine ecological classification', *Natural Areas Journal*, vol. 18, No. 1, 1998, pp 4–13).

¹⁰The term 'biotope' can be defined as 'the physical habitat and its associated community of species which can be identified by ecological survey through its consistent habitat and species characteristics' (after K Hiscock, ed., *Marine Nature Conservation Review: Rationale and Methods*, Joint Nature Conservation Committee, Peterborough, 1996).

¹¹For further discussion on this theme see M L Hunter and A Hutchinson, 'The virtues and shortcomings of parochialism: conserving species that are locally rare, but globally common. *Conservation Biology* vol. 8, No. 4, 1994, pp 1163–1165.

¹²The information for these case studies is, in addition to discussions with relevant individuals, drawn from a number of published sources: J Gibson and L Warren, pp 45–57 in Gubbay, [3]; Gubbay D Laffoley, J M Baxter, R J Bleakley and M Richards, *Marine Protected Areas in the United Kingdom: past experiences and future opportunities*; Presentation at: *Second International Conference on the Science and Management of Protected Areas*, Dalhousie University, Halifax, Nova Scotia, 16–20 May 1994; (see Warren footnote 6).

¹³Sea Fisheries Committees (SFCs) are the local statutory authorities for the management of inshore fisheries (out to 3 miles) in England and Wales under the Sea Fisheries Regulation Act (1966). SFC byelaws must be approved by the Ministry of Agriculture Fisheries and Food (MAFF).

¹⁴In this paper *basic* conflicts are considered to be based on objections by users of the marine environment about nature conservation measures in themselves, whilst *internal* conflicts are considered to be between users of the marine environment, e.g. fishermen and divers, which arise as a result of nature conservation measures.

¹⁵Nature Conservancy Council, *Lundy Marine Nature Reserve*, NCC, SW Region, Taunton, 1984.

proposals being that, in cooperation with the Devon SFC, seabed dredging and trawling would be banned throughout the reserve, and that potting would be banned in part of the reserve. Despite the fact that fishing in the reserve was currently restricted to potting, with some line fishing to catch bait, the fears of divers and fishermen that one would be restricted in favour of the other continued to cause conflicts, and the Devon SFC eventually pulled out of negotiations. At this point the Ministry for Agriculture, Fisheries and Food (MAFF) stepped in to arbitrate in the dispute and in 1985 the Devon SFC proposed a compromise whereby spear fishing would be banned in one area, trawling and tangle netting in another, and potting in a third. After extended consultations and revisions the Lundy SMNR designation was formally notified in October 1986 and is managed by the NCA in association with a forum of statutory authorities which is advised by a larger forum of representatives of user and interest groups.

Despite the establishment of a small voluntary no potting zone, the area considered to be most vulnerable due to an abundance of sea fans and cup corals remains unprotected, as the no potting 'sanctuary zone' is too far offshore, most communities of interest being within 200 m of the eastern shore of the island, though this is recognised only as a 'refuge zone' in which 'potting is not encouraged'. However, recent research indicates that the sea fans and cup corals are not as sensitive to potting as was once thought¹⁶, therefore a potting sanctuary may not, in fact, be required in order to protect these species. Diving is permitted throughout the reserve, though divers are expected to adhere to a voluntary ban on shellfish collection in all zones, and a byelaw banning spearfishing throughout the reserve has been imposed by the Devon SFC.

The zones discussed above are taken from a colour zoning scheme produced by the NCA in 1994, which is based on the approach developed for the Great Barrier Reef Marine Park (GBRMP) which has also recently been applied to the Skomer MNR, and is considered to be an example of 'best practice' which should be employed to communicate MSAC management restrictions¹⁷. However, despite the impressive, rigorous appearance of the scheme, it is recognised by the NCA that the concession of the Devon SFC to establish a voluntary 'sanctuary zone' was a token one, as the area in question was not particularly important from either a fishing or a marine conservation point of view, and that 'the area of most vulnerable marine conservation importance within the reserve remains unprotected' (see Laffoley et al. footnote 12) due largely to the weakness of the SMNR provisions.

¹⁶This study found that cup corals and sea fans did not appear to be significantly damaged by impacts from lobster pots (N C Eno, D MacDonald and S C Amos, *A study on the effects of fish (crustacea/mollusc) traps on benthic habitats and species*, A Report to the European Commission by the JNCC, Peterborough and Eastern SFC, Kings Lynn, 1996).

¹⁷Department of the Environment, Transport and the Regions, *European Marine Sites in England and Wales: a Guide to the Conservation (Natural Habitats, etc) Regulations 1994 and the Preparation and Application of Management schemes*, DETR Publications Sale Centre, Rotherham, 1998, para. 4.19.

Skomer

Skomer is an exposed island at the tip of the Pembrokeshire peninsular off the SW coast of Wales. In a similar manner to Lundy, it was originally established as a VMNR by the Dyfed Wildlife Trust but in 1982 the NCA decided to pursue an SMNR designation, and consultations began in early 1983, though a meeting with the South Wales SFC was not held until October. A challenge by the South Wales SFC to the assertion by the NCA that scallop dredging caused significant seabed damage led to the NCA, in collaboration with the South Wales SFC, having to conduct an experimental dredge exercise within the reserve area to prove their point that such methods were significantly damaging. However, the South Wales SFC conceded and they agreed to restrict scallop dredging within the VMNR using their byelaw powers.

A consultation paper concerning the SMNR proposal was circulated in 1986 which proposed a management plan similar in essence to the one in place for the VMNR, but backed up by new byelaws. Additional byelaws were proposed to prevent disturbance by divers and other boats in two 'special areas' adjacent to cliffs used by nesting auks, with a general special area encompassing all areas within 100 m of the shore being subject to an 8 knot speed limit to further minimise disturbance to seabirds and seals which use the cliffs and caves for rearing young. However, in addition to the expected objections from diving organisations, the MCS and WWF objected on the grounds that legislation designed to conserve marine life should not be used to protect wildlife on land. It was felt that the restrictive nature of the proposals were likely to provoke a negative reaction to the concept of SMNRs, and that byelaw provisions designed for SMNRs should not be used in a buffer zone manner to further the protection of terrestrial reserves¹⁸. Furthermore, it was found that the use by the NCA of the SMNR provisions to protect seabirds on cliffs above the High Water Mark contravened the *ultra vires* principle [5], whereby legislation should not be used other than for the purposes for which it was originally enacted.

The two specific special areas effectively excluded divers for most of the year from 60% of the areas favoured for diving, though divers claimed that there was no evidence that their activities were disturbing seabirds or seals. Given that there were no further restrictions proposed for fishermen or sea anglers, diving organisations argued that they were being victimised by exclusion from the special areas and blanket bans on hand collecting and spear fishing, the latter being an activity which they maintained was rarely if ever practised, whilst the fishermen were not being subject to any further restrictions. As such the SMNR proposal generated an internal conflict between divers and fishermen in the same manner as was discussed for Lundy. It has been argued in this respect that the proposal overturned the local balance achieved through the VMNR management approach and provoked a politicised basic conflict on a national scale, in that the British Sub-Aqua Club feared that the NCA's proposals to restrict diving would set a precedent [6].

Furthermore, in order to protect a sea grass bed a further special area was proposed in which it had originally been intended to ban anchoring, but following advice that the NCA could only impose byelaws restricting access, not just anchoring, the proposed byelaws banned entry by all pleasure vessels in all but the winter months (December and January) when few vessels put to sea for pleasure anyway. Predictably, this led to a basic conflict and objections from influential yachting interests.

The NCA submitted the proposal to the Welsh Office in 1986 despite these objections, but it was returned to the NCA with the instruction to overcome these objections. This they did, but only after agreeing to a compromise whereby all the byelaws restricting access to the three specific special areas¹⁹ were replaced with a voluntary code of conduct, subject to monitoring of the effectiveness of this approach with the possibility that byelaws could be introduced in the future if the code were being violated. Following a second submission, the NCA were persuaded by the Welsh Office and the South Wales SFC to also drop the byelaw banning divers from collecting shellfish or spearfishing, in the face of continued objections and accusations of victimisation by diving interests. Instead, a byelaw which prohibited fishing for scallops by any means was agreed, which essentially mirrored the South Wales SFC byelaw banning scallop

¹⁸Skomer Island is designated as a National Nature Reserve largely on the basis of the importance of its seacliffs for seabird populations.

¹⁹However, the proposed byelaw to impose an 8 knot speed limit in the general special area extending 100 m from the shore throughout the reserve was approved under the Skomer Marine Reserve Act.

dredging agreed when the area was a VMNR, and avoided either the fishermen or the divers from objecting on the grounds that they were being victimised.

The Skomer SMNR was finally formally notified in July 1990, and is managed by the Welsh NCA under an Agreed Management Policy [7] in association with a forum of statutory bodies which is advised by several topic groups on which various user and interest groups are represented. However, since designation it has been argued that other forms of fishing unacceptable to the NCA on conservation grounds and to divers on safety grounds have been introduced which the NCA have been powerless to prevent from happening (see Laffoley et al. footnote 12).

Menai Strait

Unlike Lundy and Skomer, the Menai Strait is a mainland area consisting of a narrow sound between the north coast of Wales and the island of Anglesey, which has an active local fishing community, as well as attracting thousands of tourists, many of whom stay in the area. Though it has been extensively studied by marine biologists interested in the communities ranging from tidal rapid areas to sedimentary bays, the area was never established as a voluntary reserve. Sewage pollution is recognised as a significant problem, especially with regards to infections amongst divers, etc.

The Welsh NCA took the decision to pursue an SMNR designation for the Menai Strait, but, given the potential for conflict and the experiences with Lundy and Skomer, the decision was also taken to emphasise the educational potential of the reserve for locals, tourists, and visiting divers and yachtsmen, as well as the research potential, and to propose only a few minor restrictive byelaws. The original consultation document was circulated in 1988, in the light of responses to which a revised consultative document was circulated in 1993 which included four main proposals.

Firstly, the restriction of bait digging was proposed, including the designation of small sanctuary areas to provide for research where bait and specimen collection would be prohibited, as would shellfish collection under a North Western and North Wales SFC byelaw. Secondly, the prohibition of spear fishing throughout the reserve was proposed, again under a SFC byelaw. Thirdly, the introduction of a byelaw requiring permits for certain research activities was proposed. Finally, it was proposed to introduce voluntary codes of conduct concerning disturbance from yachts and canoes, and sea angling, though the possible requirement for byelaws should this approach prove ineffective was not ruled out.

Despite this relatively cautious approach, the proposals attracted two main objections. Sea anglers and their organisations considered that the SMNR management proposals were the 'thin end of the wedge', and that further restrictions on angling and bait digging would be imposed once the designation was in place. It was, however, considered that these objections would be dismissed by the Secretary of State as being insubstantive, because the sea anglers' objections were based on fears rather than facts. Riparian landowners, some of whom have prescriptive rights over parts of the foreshore, objected in principle to the NCA's powers being extended any further.

In addition, yachting interests objected on the grounds that pleasure craft had been singled out by the proposals, though it was made clear to them that this is simply because the statutory provisions state that SMNR restrictions can only apply to pleasure craft, and that no byelaws

concerning pleasure craft were envisaged, therefore these objections were eventually withdrawn. The WWF also objected by raising the question that if no restrictions were proposed, why bother declaring the SMNR, though this objection was not considered to be one which might block the proposal.

After having spent over a year trying to resolve the objections of the angling bodies and the landowners, the proposal was submitted to the Secretary of State with the objections outstanding in 1994. Nothing appeared to happen for a year, though the appointment of a new Welsh Secretary of State in July 1995 raised hopes that the proposal would now be seriously considered. Concerns over the lack of progress of this designation were expressed in the House of Lords [1, col. 564 and 573] and in 1996 the Secretary of State announced his intention to designate the Menai Strait as an SMNR as soon as possible, and appointed an inspector to consider the outstanding objections from the anglers and some of the riparian landowners in a form of local inquiry. However, at the time of writing what could be Britain's third SMNR had still not been designated.

Loch Sween

This site on the SW coast of Scotland consists of Loch Sween and a number of smaller sheltered bays, with habitats ranging from tidal rapids to very sheltered bays, and including maerl beds. It supports the local community through fishing, fish farming and tourism, Tayvallich Harbour being a very popular anchorage and mooring area for yachts.

The proposal for this SMNR was published in October 1990 [8] and set out a zonation scheme backed up by appropriate byelaws. This specified an Inner Zone where no activities or recreational uses which might adversely affect the nature conservation importance of the Loch should be allowed. It was proposed that all commercial fishing, including potting, but with the exception of fishing for migratory salmonids, would be prohibited by an Order under the Inshore Fishing (Scotland) Act (1984) by DAFS²⁰, and that no further salmon farm leases should be granted, whilst scientific research should be controlled through permit. It stated that existing fish farm leases could continue, but should not be renewed should they become vacant, and proposed management changes should be referred to the NCA for approval.

It also proposed an Outer Zone where trawling and dredging would be prohibited in order to allow the area to recover and to provide a protection area for commercially exploited species. It was proposed that large-scale mariculture would be discouraged, though expansion by operators who hold leases in the Inner Zone could be accommodated. A code of conduct for pleasure boats was also proposed, as was a DAFS byelaw prohibiting spearfishing and shellfish collection by divers throughout the reserve.

The proposal, which was relatively prescriptive and restrictive, was seen more as a *fait accompli* than a discussion document by locals, which is hardly surprising considering that few consultations had taken place prior to its publication, and that it was, in effect, a complete and detailed management document in which there appeared to be little room for adjustment and compromise. Furthermore, it involved widespread byelaw restrictions on many activities on which local livelihoods depended, such as potting for *Nephrops*, scallop dredging, prawn trawling and fish farming, with no provision for compensation for lost income, though the potential benefits of the SMNR in terms of increased tourism, sustainable

²⁰The Department of Agriculture and Fisheries for Scotland (DAFS) is now known as the Scottish Office Agriculture, Environment and Fisheries Department (SOAEFD). The Scottish Office has a policy whereby inshore fisheries are centrally administered rather than management functions being devolved to local SFCs, including proposed SMNR related fisheries byelaws.

exploitation and increased commercial fish stocks nearby were stressed in a very general manner.

Predictably, the public meeting held one month after the publication of the discussion document was a lively affair that was attended by around 200 people, which is very high considering that the resident population of the area is around the same number. 95% of those present voted against the proposal, and the Loch Sween Joint Action Committee was subsequently formed to resist it. This involved most local stakeholders and encouraged people to lodge formal objections to the SMNR, 60 of which were sent to the NCA, many also being copied to the local MP and the Secretary of State for Scotland. The Committee also promoted a media campaign and sold bumper stickers with the slogans 'Keep Loch Sween an NCC-free zone' and 'Let Loch Sween live, say no to the NCC'.

It was thus evident that the NCA's proposals to designate Loch Sween as an SMNR had generated major basic conflicts, the factors underpinning which were illustrated by the written objections to the proposals. The local communities based their main objections around arguments that²¹:

- the discussion document was an apparent *fait accompli* and that the NCA failed to consult stakeholders earlier;
- the proposals ignore the need of local people to earn a living from activities which would be restricted: "the only species threatened with extinction in Loch Sween is fishermen";
- further restrictions will be imposed once the SMNR Order is in place: 'thin end of the wedge';
- many locals will suffer the consequences of draconian measures in order to establish a 'scientist's playground' which will be of benefit to very few people.

The degree to which the locals were suspicious is illustrated by the fact that many objectors considered that the NCAs lack of concern for the local stakeholders was reflected by the design of the front cover of the Discussion Document, which was an aerial photograph of the area, the title box of which covered the village of Tayvallich where most locals live.

In the face of these objections and the concerted campaign of opposition, the SMNR proposal was, in effect, withdrawn and the NCA stated that, for the present, it did not intend pursuing any further SMNRs in Scotland. The NCA did subsequently appoint a liaison officer in 1992 to explore other participative means of conserving Loch Sween's natural heritage, though this was a fixed term post that was not renewed and it is debatable whether any significant progress to this end was made in the face of the hostility which the SMNR proposal had generated.

Significantly, the NCA have since argued that the main reason the Loch Sween SMNR proposal was not successful was the 'protracted negotiations and obstructions put in the way of the conservation agency by the then Government Fisheries Department [as a result of which] it was difficult to keep up the momentum and maintain the local people's interest and trust' (see Laffoley et al. footnote 12). They also blame the 'concerted local campaign by a small number of activists', though they do acknowledge that the lack of local liaison prior to the publication document and the fact that it was 'seen as the final decision' also aroused opposition.

²¹These insights were gained from discussions with NCA staff and locals, newspaper/television reports and a viewing of some of the letters of objection at SNH's Edinburgh Office. Further background information was derived from Bleakley, S., *Coastal Conflicts; Past Mistakes, Future Direction?* MSc Thesis, University of Edinburgh, 1994.

St. Abb's and Eyemouth

This area on the SE coast of Scotland consists of a complex of exposed rocky reefs with a wide diversity of biotopes and is recognised as one of the most popular dive sites in the UK, with around 2–3000 dive visits every year. In 1973 a group of sub-aqua clubs agreed a voluntary ban on the collection of marine life, as local crab and lobster fishermen were becoming increasingly concerned about the effects of such collection on their livelihoods, and there have been isolated incidents when it has been claimed that divers have damaged pots and taken their contents. In 1978 a local diver and caravan site owner established a small VMNR which was managed on an informal basis and was focused on promoting good practice amongst the many visiting divers. However, in 1982 the site was proposed as a SMNR, but neither divers, fishermen nor local conservationists supported the proposal as it was felt that emphasis on the powers of the NCA would upset the management balance achieved through the VMNR. Instead, the area was more formally established as a VMNR in 1984 by the Scottish Wildlife Trust (SWT), covering 8 km of coastline and extending to the 50 m depth contour, and it was agreed that the SMNR proposal would be shelved to see how this initiative developed.

A Joint Management Committee was established and includes representatives of local fishermen, diving clubs, the Harbour Authority and local government, with the Scottish NCA having observer status only, despite the fact that they provide significant funds for the initiative. The main aim of this initiative is to promote the good conduct of the large numbers of divers who visit the site through awareness raising and peer pressure in order to conserve marine life and avoid conflicts. This is achieved through a code of practice and the provision of a warden who monitors divers and encourages them to comply with the code. Funding was provided by British Petroleum and more latterly Scottish Nuclear, as well as the SWT and Scottish NCA, and a visitor centre has been established to promote the initiative and its aims amongst divers and other visitors.

The area is a static gear reserve²² due to its importance as a potting area so the introduction of damaging fishing methods is not a potential problem. There are currently proposals to redevelop and expand Eyemouth Harbour which borders the VMNR, but it is uncertain whether this will affect the reserve, and the plans incorporate a large marine interpretation centre. There have been growing concerns about the deterioration of the quality of the reserve, particularly with regards to water clarity [9], but it is difficult to assess the validity of these fears due to the lack of long-term monitoring data, and one of the current priorities is to instigate a monitoring program. However, overall this VMNR is recognised as a reasonable success in that the nature conservation importance of the site is widely recognised and respected by the many visiting divers and the potential for major internal conflicts between them and local fishermen has largely been overcome through liaison and cooperation.

Purbeck marine wildlife reserve

This exposed rocky marine area on the south coast of England was established as a VMNR by the Dorset Trust for Nature Conservation (DTNC) in 1978 primarily in response to fears over the growing numbers of visitors, including many school groups interested in the ecology and geology of the area, and increasing evidence of the impacts of trampling

²²That is an area in which trawling or dredging is banned under the Inshore Fishing (Scotland) Act (1984) administered by the Scottish Office; see point made in footnote 20.

in intertidal areas [10]. This is particularly intense at Kimmeridge Bay, which is the only area within the site where direct road access is available and where entry is not frequently restricted by the adjacent Ministry of Defence tank range.

An Advisory Group was established with a wide membership including representatives of the DTNC, local government, MCS, NCA, Southern Sea Fisheries Committee, British Sub-Aqua Club, as well as oil industry interests (British Petroleum, British Gas) and the local landowner. A code of conduct for visiting educational parties, divers and tourists was produced and promoted through the employment of a warden, and a hut at Kimmeridge Bay was leased at a much discounted rate from the local landowner and adapted as a VMNR information centre to promote the initiative amongst holiday makers.

In 1988 Britain's first underwater nature trail was established with funding from the NCA and latterly IBM, and the reserve now includes a Scientific Area in which recreational activities are discouraged in order to provide a control for comparison with other areas, the lack of road access, frequent closure of the adjacent tank ranges and wave exposure significantly supporting such restrictions. Jet skiing has been effectively prohibited by the local landowner, who refuses to allow access at the only launch point (Kimmeridge Bay), which they own. Only one potter operates in the area and is sympathetic to the objectives of the reserve, as are local anglers, whilst the many dive boats which visit the area at summer weekends generally comply with the code of conduct. There have been concerns over plans by the MoD to extract aggregates from nearby marine areas, and over proposals by an oil company to explore for oil reserves beneath the sea from an inland drilling site, though the Advisory Group have stated that they are willing to work with the oil company.

However, interpretation/education continues to be the reserve's key objective and over 150 educational visits are made each year. In addition, a live visual link employing an underwater video camera is currently undergoing trials as a means of promoting interest in marine life.

Discussion of MNR case studies

It could be argued that the reasonable degree of cooperation achieved with voluntary measures to conserve Lundy and Skomer through a cautious and participatory management approach was undermined by the SMNR proposal, and that the clear warning signals that these proposals would generate conflicts were ignored. Furthermore, it is clear that the SMNR designation has achieved little if anything in terms of improved conservation measures for these sites²³, and has actually exacerbated internal conflicts, most notably between divers and fishermen. It is also clear that proposals to embody the existing voluntary regime into a statutory framework provoked objections.

In the Menai Strait a relatively cautious approach was taken with the SMNR proposal in the light of the experiences discussed above and by virtue of the fact that the site was not previously recognised as a VMNR and is relatively heavily populated. However, this proposal was still objected to, not on the basis of internal or basic conflicts, but on the basis of mistrust in the NCA and fears about their motives for extending their powers through the SMNR provisions. Ironically, this proposal was also objected to by the WWF precisely because it was so cautious, in that it did not involve the use of any of the limited statutory powers afforded to the

²³This was recognised by a recent international review, in which both Lundy and Skomer were identified as existing MPAs in need of additional management support (G Kelleher, C Bleakley and S Wells, *Priority Areas for a Global Representative System of Marine Protected Areas: introduction and review of Biogeographical Regions 1-6*, of a Four volume Report to the World Bank Environment Department, Vol. 1, Washington DC, 1995, p 145)

NCA, therefore they questioned whether the SMNR was worth pursuing.

The Loch Sween case, on the other hand, graphically demonstrates how a bold, prescriptive SMNR proposal can generate basic conflicts and unite stakeholders in opposition to it, in contrast to the experiences with Lundy and Skomer where major internal conflicts between fishermen and divers were exacerbated by the SMNR proposal. With hindsight, the NCA might be considered to have been somewhat naive in their apparent surprise at the hostile reception that the proposal received and in their frustration at the lack of support from the stakeholders and the government fisheries agency.

To a lesser degree, the St. Abb's and Eyemouth case also illustrates how this SMNR proposal united stakeholders in opposition to it, though in this case local conservationists also feared that the proposal would upset the careful balance that had been achieved through the VMNR approach with regards to the potential major internal conflict between divers and fishermen. Finally, the experiences with the Purbeck VMNR illustrate what can be achieved through a purely voluntary approach, though it must also be recognised that in this case the access restrictions imposed by the Ministry of Defence and the local landowner and the lack of serious pressures on the site minimised the threats that the VMNR faced and hence the challenges to the voluntary approach.

Overall, it could be argued that the initiative to designate SMNRs under the 1981 Act has made no significant contribution to the protection of marine sites in that neither of the two SMNRs that have been approved are significantly better protected than when they were managed as VMNRs. Furthermore, it could be argued that the conflicts that have been generated and exacerbated by the NCAs efforts to designate SMNRs have hardened attitudes against statutory approaches to protecting marine sites and against the NCAs' role in this respect. However, it must also be recognised that there are limitations to the voluntary approach to marine conservation, in that use restrictions are not underpinned by byelaws and there is no compulsion to comply. With VMNRs there is thus a need for caution, an emphasis on stakeholder participation and a focus on the potential to compromise, though there is also the associated potential for marine nature conservation objectives on which MNR initiatives are primarily focused to be compromised.

It could be argued that many of the conflicts are likely to have arisen whether a voluntary or a statutory approach had been taken. Indeed, the case studies illustrate that the management challenges for a given site remain the same if one progresses from a voluntary to a statutory approach or vice-versa. The critical issues are whether such challenges are best addressed by taking a purely voluntary approach, accepting the need to compromise, and whether the attempted use of the statutory approach necessarily hardens attitudes and exacerbates conflicts.

The case studies also illustrate that compromises may be necessary when taking the voluntary approach, but that due to the weakness of the SMNR provisions such compromises are also necessary, including the 'shelving' or complete abandonment of proposals and, indeed, of the SMNR programme on the whole. Another critical issue is whether these compromises have significantly undermined the conservation importance of the sites in question. Whilst the Lundy case study illustrates that significant compromises on proposed restrictions have to be made in order to appease objectors and gain the approval of SMNR proposals, it also

illustrates that the assumptions behind the proposed restrictions, in this case the assumption being that potting damaged sea fans and cup corals, may themselves be flawed. Overall, it is clear that proposed management restrictions must be supported by scientific evidence which demonstrates that certain activities damage certain features to a certain degree, rather than being based on assumptions.

It is recognised that the precautionary principle could be invoked in this context, in that it could be argued that the onus should be on users of the site or their sectoral regulators to demonstrate that their activities do not damage conservation features. However, it is argued that to routinely invoke this principle in order to justify specific proposed MNR management restrictions will be very counter-productive in gaining the cooperation of users or the support of related sectoral agencies²⁴. To this end recent guidance from the British Government on MSAC policies states that whilst a lack of full scientific certainty should not be used as a reason for postponing measures that are likely to be cost-effective in preventing damage to sites, this principle should only be acted on when damage to a site is potentially significant but the risk is uncertain. This guidance also specifies that this principle cannot be used as a licence to invent hypothetical consequences and thus eradicate all activities which it has been suggested might cause damage unless they have been proved to be harmless (see footnote 17, paras 2.6 and 2.7). There have also been calls for the precautionary principle to be implemented at a wider scale in fisheries management through marine reserves [11], but it is argued this should not be taken as a justification for using this principle to routinely justify specific restrictions in specific case.

Overall, the case studies could be interpreted as a justification for stricter MNR provisions to enable the NCAs to compel users and their sectoral regulators to restrict certain activities in order to achieve the protective management of MNRs. Indeed, a document published in 1991 by a consortium of NGOs [12] proposed a legal framework for Marine Protected Areas (MPAs) which would provide for strictly protected 'Type 1' areas and buffer zone 'Type 2' areas in which certain activities would be restricted, under the auspices of an executive MPA authority which would necessarily require powers enabling them to direct or override other sectoral agencies.

²⁴Sidaway argues that 'reliance on the precautionary principle may make sense in conservation terms, but for recreational interests, this may be seen as an attempt to occupy the moral high ground' [6].

²⁵The policy under the Habitats Directive for MSACs in England and Wales is detailed in a recent DETR publication (see footnote 17).

²⁶Termed Special Areas of Conservation, which are referred to as Marine Special Areas of Conservation (MSACs) in the context of this paper.

²⁷Relevant authorities for MSACs are listed as (current equivalents) NCAs, local planning authorities, Environment Agency/Scottish Environment Protection Agency, sewage/water/drainage undertakers, navigation/harbour authorities and government fisheries agencies, including SFCs (see Ref. [14] Regulation 5).

²⁸The Regulations define European Marine Sites as being any designation or part of which extends below the level of the Highest Astronomical Tide Mark (see Ref. [14] Regulation 2(1)), but in keeping with the subtidal focus of this paper, such sites will be referred to as MSACs.

Marine SACs policy²⁵

Against this background, the European Commission's Habitats Directive [13] was enthusiastically welcomed by NGOs and marine conservationists as it offered an unprecedented opportunity to systematically designate MSACs as part of the *Natura 2000* network with a legal commitment for member states, including Britain, to maintain the 'favourable conservation status' of sites of community importance²⁶. The Directive also sets out an assessment process by which the potential impacts of any plans or projects which might significantly affect designated sites should be assessed and that activities which might have a significant negative impact should only go ahead 'for imperative reasons of overriding public interest, including those of a social or economic nature' [13, Article 6(4)], subject to appropriate compensatory measures.

The Directive was transposed into UK law in 1994. These regulations [14] essentially place a duty on any authorities²⁷ which have statutory functions which are relevant to the management of MSACs²⁸ to exercise

these functions in a manner which ensures compliance with the Directive. This duty is significant in that it requires, for instance, government fisheries agencies to implement byelaws which are necessary to maintain the favourable conservation status of MSACs,²⁹ and in that it overcomes problems arising from the *ultra vires* principle previously illustrated in relation to the Skomer case study, ie this duty requires that relevant statutory powers be appropriately applied to conserve MSACs regardless of whether these powers were originally intended for nature conservation purposes.

The regulations require one or more of the relevant authorities to establish a management scheme for each MSAC which must ensure compliance with the Directive [14, Regulation 34(2)]. The Government has also stated that the management scheme process should be overseen by a management group comprised of relevant authorities (see footnote 17, para 4.1) and that this group should consult with local interests, user groups, industry, etc (see footnote 17, para 214–216) through the establishment of advisory groups (see footnote 17, para 4.4). The regulations provide for the Secretary of State to ‘step in’ where there are doubts whether the management scheme will achieve compliance and to require appropriate actions to be taken to improve the management scheme [14, Regulation, 35]. NCAs are provided with powers to protect MSACs [14, Regulation 36], but these are restricted to those under the 1981 Act for SMNRs discussed above, which are limited in the extreme. The NCAs are responsible for advising the other relevant authorities as to the conservation objectives of the site, and of the types of operations which are likely to cause deterioration or disturbance [14, Regulation 33(2)] and must be supplied with a copy of the management scheme once it has been completed and whenever it is amended [14, Regulation 34(4)]. The recent guidelines also stress that the NCAs’ advice and expertise will be important in guiding the inter-agency management scheme (see footnote 17, para 3.21).

However, beyond this and their general role as a relevant authority, the NCAs have no overall coordinating or executive role in the MSAC management process³⁰. Instead, the provisions for MSACs are characterised by an approach whereby no particular authority has responsibility for ensuring compliance with the Directive, relying instead on voluntary compliance by the various sectoral relevant authorities with no one authority having a statutory lead role or cross-sectoral powers, other than through the ‘step in’ powers of the Secretary of State.

The Government set out its reasoning behind this approach in an earlier consultation document [15], in which it stated that control of development for marine areas is achieved through statutes administered primarily by central government agencies on a sectoral basis, for whom the primary consideration in preserving conservation values is the balance of legitimate use. It was stated that the Government believed that in most cases the relevant authorities will act voluntarily to effectively manage MSACs, and that it was neither necessary nor desirable to devise an entirely new system of controls³¹, but that the Secretary of State should have reserve powers to ensure compliance with the Directive. Furthermore, the Government has made it clear that the voluntary principle should apply in that the statutory enforcement of management schemes should only be used on a ‘back-up’ basis where voluntary measures are not proving effective or where the existing regulatory framework is, or risks, causing or allowing damage to a site³². The Government has also stated that management

²⁹This requirement is provided for by para. 102–103 of the Environment Act (1995 Ch 25).

³⁰This is in contrast to the central and executive role that NCAs have under the Regulations in relation to terrestrial SACs, which operate within the existing conservation and land planning system which cannot be applied below the Low Water Mark (see footnote 2).

³¹The same reasoning was previously put forward by the British Government in rejecting calls for a review of coastal zone legislation (Department of the Environment, *Coastal Zone Protection and Planning: The Government’s Response to the Second Report from the House of Commons Select Committee on the Environment*. Cm 2011. HMSO, London, 1992, para. 25–28).

³²Para. 4.11 (see footnote 17); it is also stressed that regard should be given to the precautionary principle in this respect as per Para. 2.6–2.7 and as previously discussed in this paper.

schemes should be developed with the participation of owners and occupiers, rightholders, local interests, user groups and conservation groups, that full public consultation should be taken on any management proposals and wide publicity should be given (see footnote 17, para 4.4), and that it should be presumed that day to day use of the areas in general should continue (see also footnote 17, para 4.12).

The response to the MSAC provisions

The UK provisions for enforcing the Habitats Directive in the marine environment are not as strict as many would have liked. They certainly do not go as far as the WWF proposals [16], which went so far as to include a draft Marine Protected Areas Bill which it was argued was required to fill the gaps in the present policy framework in order to protect marine sites. This Bill was similar in essence to the strict legal framework for MPAs discussed above that was proposed by NGOs. It has been argued that neither the Habitats Directive nor the UK Regulations provide a satisfactory legal framework for marine site protection [17], in that the only way in which control over public use can be enforced is through the SMNR byelaws, and that there is no mechanism to enforce the implementation of MSAC management schemes.

It is important to note that these comments are only valid in so far as they refer to the direct enforcement powers provided for NCAs as the regulations do require all relevant authorities to utilise their statutory powers to enforce the implementation of MSAC management schemes, including the public's use of such sites, where voluntary restraints are not effective. However, the regulations do not provide the NCAs with the direct overriding statutory powers to protect marine sites that many conservationists have campaigned for, and it has been argued that the commitments on the relevant authorities are too vague and open-ended [17].

Progress with MSACs in Britain

Under the Habitats Directive, member states should have communicated a list of candidate sites of Community importance for the marine habitats listed in Appendix I and the marine species listed in Annex II by June 1995 and established a final list of adopted sites by June 1998, with a view to these sites being fully designated by June 2004 [13, Article 9(1) (3) and (4)]. Britain, like many European countries, is behind on this schedule but significant progress had been made at the time of writing in that 36 candidate MSACs had been put forward to the EC whilst a further 3 possible MSACs are subject to consultations (see Table 1). The total area of these sites is equivalent to around 4% of Britain's marine area out to the 12 mile Territorial Water limit.

The Directive has been criticised on the basis that the marine habitat types listed are too broad whilst the marine species listed are strongly biased towards higher marine vertebrates, and that this could lead to marine interests being under-represented in the final list of sites, though it is recognised that, despite these limitations, the Directive represents a major opportunity to include the marine environment in a network of legally protected sites [17].

The initial list which included 36 possible MSACs was published for consultation in March 1995, on which comments were invited within 12 weeks³³. The responses were characterised by arguments that

³³The consultation period for MSACs was twice as long as for terrestrial SACs, reflecting the Government's recognition of the complexity of issues affecting such sites and the higher number of potentially affected parties.

more information was needed and by concerns about potential management restrictions and activities which might be affected by MSAC designation³⁴. These concerns were arguably exacerbated by the information which accompanied the consultation lists [18], which unavoidably mentioned the legal obligations to comply with this EC Directive and the potential for recourse to statutory enforcement where voluntary efforts are failing, though emphasis was also placed on the Government's intention to take a positive partnership approach and to provide for the support of local users of the marine environment in order to allay such fears.

The number of objections and concerns raised during consultations about the initial list of 15 possible MSACs in Scotland³⁵ was such that a second round of consultations was undertaken during the summer of 1996. This was accompanied by more site specific details of conservation objectives and general potential management restrictions in order to enable more informed discussions and consultations [19]. However, this second round of consultations appeared to be directed mainly at relevant authorities, particularly regional and local councils, with many individual users being excluded and many of the site specific details being classified as confidential until this second round of consultations was complete³⁶. Such a 'top down' approach which actively excludes users is likely to do little to promote trust and provide for cooperation, though it was no doubt politically expedient in that many of the objections from 'key stakeholders' from relevant authorities were overcome and most of the possible MSACs in Scotland were subsequently communicated to the EC as candidate sites.

In order to support the implementation of the Habitats Directive in the marine environment the 'UK Marine SACs Project' was launched in May 1996 with funding from the EC through the financial instrument for the environment (LIFE) programme. This project is mainly focused on conservation biology issues in relation to the development of management schemes for 12 representative 'pilot' sites to improve understanding where knowledge is limited and develop best practice guidance. Thus, research will be undertaken on the factors affecting conservation features for which sites have been selected, the natural variability of these features, their sensitivity to human activities and measures for minimising particularly damaging impacts, and the development of practical techniques for monitoring the status of conservation features³⁷. A study is also being commissioned to evaluate the approaches employed in the pilot sites to provide for stakeholder participation in management scheme processes and recommend best practices in this respect.

It has been stated MSACs which have been communicated to the EC as candidate sites should be protected as if they were already designated, including the establishment of voluntary management schemes (see footnote 17, para 3.6), and progress to this end is being made for the 33 candidate sites which had gone forward at the time of writing.

The way forward?

Management scheme formulation

In keeping with the different ecological, socio-cultural, etc characteristics and contexts of the various candidate MSACs, different approaches are being employed in the initial stages of formulating management schemes. For instance, the preferred approach of the MSAC project officer and the

³⁴Insights concerning the nature of the responses were gained through discussions with relevant government employees.

³⁵This includes two sites which straddle the Scotland-England Border. The Dornoch Firth was added to the list of possible MSACs in Scotland during the second round of consultations and subsequently the Faray and Holm of Faray site was added to the list.

³⁶These insights were gained from discussions with relevant government staff and discussions with individual users of possible MSACs.

³⁷The UK Marine SACs Project is introduced in the first issue of its *Marinelife* newsletter, Summer Edition, English Nature, Peterborough, 1997.

individuals from the relevant authorities with which they are collaborating may significantly influence the approaches employed with regards to educating, consulting and/or participatively involving local users. Similarly, whether the site is rural or relatively urbanised will influence the characteristics of the stakeholders, the potential conflicts and the stakeholder participation approach employed [20]. At the time of writing it was not possible to ascertain what approaches for providing for stakeholder participation were being employed in the 33 candidate MSACs that have gone forward as these are at a very early stage. However, it is clear that in some cases efforts are being made to provide for the active participation of local users and interested parties through, for example in the Thanet Coast MSAC, the employment of consensus building techniques. Whether these techniques will be appropriately applied and their outcomes incorporated in management schemes in a manner which promotes the cooperation of users remains to be seen.

There is growing recognition of the fundamental importance of providing for active stakeholder participation in the formulation of management schemes for coastal and estuarine sites in order to minimise potential conflicts and hence the need to stringently enforce the scheme when it is implemented. In relation to MPAs, such stakeholder participation is recognised as being of key importance at all stages of the process, from introducing the idea of such initiatives and setting their objectives through to management plan implementation and revision, including the maximisation of compliance through peer pressure [21]. Indeed it has been argued that 'for most MPAs, the question is not so much why community involvement is effective, but rather what kind of community involvement is effective' [22]. There is also growing recognition that there are various levels of stakeholder involvement, whereby at one extreme efforts are merely focused on educating the public so that they appreciate the need for management restrictions, and at the other extreme authority for management decisions is delegated to a non-statutory body comprised of stakeholder representatives [23].

One of the strengths of the VMNR approach is that the lack of statutory provisions dictates that a cautious and participative approach must be taken, whereas a lack of caution and of early stakeholder participation in SMNR initiatives, notably Loch Sween, was a critical limiting factor in their success. A key issue in this respect is whether the meaningful participation of local communities will be provided for during MSAC management scheme processes. There are limitations to the extent to which such participation can be provided for, as the sites themselves have been selected with no input from local communities³⁸ beyond being given the opportunity to comment on what were essentially fait accompli proposals. Similarly, the requirements of the Habitats Directive have been imposed by the EC and are to be met by MSAC management groups consisting only of statutory relevant authorities, with the participation of various local interests being limited to consultation through advisory groups and wider public consultations³⁹. Although the importance of stakeholder participation to provide for subsequent cooperation is recognised in principal by the British government, the consultative and advisory committee approach set out in their guidance falls short of the joint planning approach which it has been argued is the desired point on the public involvement continuum [23].

However, the joint planning approach should be followed from the initial needs identification and conceptual stage of the efforts, and is

³⁸It has been argued that the international nature of this initiative means that sites were 'self selecting', therefore it was not possible to provide for stakeholder participation at the selection stage (see Laffoley *et al*, footnote 12).

³⁹This is in contrast to recommendations, in the context of multiple-use MPAs which conform with the Biosphere Reserve model, that active stakeholder participation should be provided for in legislation at all stages of the management process (G Kelleher and R A Kenchington, 'Political and social dynamics for establishing marine protected areas', *Nature and Resources*, vol. 26, No. 2, 1990, pp. 31-38).

therefore arguably constrained in relation to its application to the MSAC management scheme process in that the objectives and selection of sites is essentially imposed on local communities in a top down manner by the EC, the British Government and the MSAC management group, with the input of local stakeholders being restricted to a consultative and advisory one. The basic policy model inherent in the Habitats Directive and the British policy for implementing thus arguably leads to a greater potential for tension between strategic top down conservation priorities and bottom up stakeholder priorities⁴⁰.

The challenge with regards to MSACs in Britain is therefore to minimise the potential for such tensions and the management conflicts which are likely to arise from them, whilst fulfilling the British Government's commitments under the Habitats Directive, as such conflicts are likely to reduce the potential for the voluntary cooperation of local communities on which MSAC management must primarily rely. Approaches such as the second exclusive consultation over MSACs in Scotland discussed above are likely to be less than constructive in meeting this challenge, as are approaches which do not place sufficient emphasis on providing for the meaningful participation of stakeholders in MSAC management scheme decisions. It may be that the two-tier management-advisory group structure that has been adopted needs to be evaluated and revised in order to provide for a more participative joint planning approach, albeit one that is premised on the top-down elements of MSAC selection and accountability to the EC.

Management scheme enforcement

The potential for conflicts and hence the need for stringent enforcement can be minimised by a participative approach to management scheme formulation, but it is widely argued that statutory mechanisms are necessary on a secondary 'back-up' basis to provide for the enforcement of management restrictions amongst all users and to ensure the achievement of conservation objectives [24]. However, the SMNR case studies illustrate that the provision of statutory enforcement powers can lead to objections about proposed restrictions and raise 'thin end of the wedge' fears about the threat of further restrictions, based on mistrust of the NCAs, who tend to adopt a less cautious and participative approach when they are provided even with very limited powers. In this sense it has been argued that 'while some conservationists may be satisfied to have exercised their power, their victory may prove somewhat hollow if a local consensus is lacking to face more significant threats' and that 'neither side gains in the long run by the exercise of power' [6].

Such arguments reinforce the case for providing for meaningful stakeholder participation in management scheme processes, without which the potential for voluntary cooperation is undermined, forcing an early recourse to statutory enforcement powers rather than such powers being utilised merely on a back-up basis. Three alternatives to statutory enforcement are recognised as a means of providing for the achievement of conservation objectives: education, compromise or compensation [25].

Education is also referred to as 'interpretive enforcement' [24] in that it makes users more aware of the conservation value of a site and of the mutual benefits of its conservation, makes them more sympathetic to the objectives of proposed management restrictions, reduces the potential for objections, conflicts and defiance, and increases the potential for voluntary cooperation, thus minimising the need to fall back on statutory

⁴⁰Such tensions were apparent during a public meeting concerning the Solway Firth [20].

enforcement. However, interpretive enforcement is also recognised as the lowest extreme on the continuum of participation discussed above, the reliance on which, at the cost of a lack of provision for more meaningful participation, is unlikely to maximise the potential of users to voluntarily cooperate and may thus lead to a more frequent recourse to statutory enforcement.

Compromise is also recognised as a means of avoiding recourse to statutory enforcement, in that it is a means of overcoming objections and of regaining the goodwill of users, but the legal commitment to the EC to fulfil the objectives of the Habitats Directive reduces the potential for compromise. The extent to which the EC will be prepared to compromise on conservation objectives, particularly with regard to non-priority habitats on the basis of which most marine SACs in Britain have been selected, remains to be seen and is likely to be determined through test cases.

Compensation has been argued for as being essential to overcome inequities inherent in MPA management restrictions where a small minority⁴¹ bare the burden so that the wider community can get a thinly spread intangible gain. Indeed, it has been stated that compensation of those who lose income as a result of MSAC restrictions may need to be considered to ease enforcement (see Laffoley et al. footnote 12). Compensation for profits foregone as a result of management restrictions is a widely used means of achieving conservation objectives for terrestrial sites in Britain though this approach of promoting compliance has been criticised as a means of 'buying off' landowners which is not only a drain on NCA funds but is also open to abuse by landowners (see Green footnote 2, pp. 142–143). On this basis the British government has recently been advised to abandon the use of profits foregone compensatory agreements [26]. Furthermore, the common access nature of many uses of the marine environment means it is difficult to identify those users who should be compensated and raises the problem that those who have not will continue their potentially damaging activities. It is therefore argued that the payment of compensation for profits foregone to ease MSAC enforcement has little potential, though the use of more general positive management agreements, by which grants are given to promote compatible uses, may be worthy of exploration.

It is thus argued that neither compensation nor compromise are particularly valid as alternative means of enforcing MSAC management restrictions in Britain, and that the problems inherent in an early recourse to statutory enforcement or, worse still, a primary reliance on it, dictate that such powers should be employed with caution. Against this background, it is argued that the British government's approach to implementing the Habitats Directive in the marine environment does not sufficiently provide for the meaningful participation of stakeholders in that it is essentially restricted to consultation through advisory groups at a fairly late stage in the management scheme process, coupled with interpretive enforcement. A key point in this respect is that interpretive enforcement should complement meaningful stakeholder participation rather than being a substitute for it, and that concentrating on the former at the expense of the latter implies a paternalistic attitude that may exacerbate rather than overcome conflicts⁴².

Experiences with SMNRs and VMNRs validate arguments that a primary reliance on statutory approaches can actively generate conflicts and cause major management problems whilst more cautious voluntary approaches which take a participative approach can potentially both achieve

⁴¹Sant [25] also observes that such "passionate and vocal minorities can often determine an outcome" and that this is not unreasonable given the inequities involved. The SMNR cases discussed in this paper illustrate the validity of this statement.

⁴²A critical question in this respect: "will the objective of public education and citizen participation go beyond that of 'assessing the political feasibility of certain alternatives' and educating the 'uninformed' public about why the experts' decision or proposed action is the best one?" (C A Davos, 'Sustaining co-operation for coastal sustainability', *Journal of Environmental Management*, vol. 52, No. 4, 1998, pp 379–387.

conservation objectives and promote the cooperation of users. However, the lack of provision for stakeholder participation in MSAC management scheme processes is likely to increase the subsequent need to harness the statutory powers of relevant authorities, the problems inherent in which are likely to undermine the potential to successfully achieve marine conservation objectives. Rather than heed calls for stricter laws which provide NCAs with overriding statutory enforcement powers, it is argued that the policies should be evaluated and revised in order to provide for more meaningful stakeholder participation which has the potential to balance the need to promote voluntary cooperation, achieve marine conservation objectives and to fulfil commitments to the EC, with statutory enforcement powers being provided only as a back-up and to protect voluntarily agreed management frameworks from the 'tragedy of the commons' [27].

Senior marine NCA officers have themselves argued at a conceptual level for the essential need to build in systems for stakeholder involvement from the outset, to achieve a balance between top down and bottom up approaches, and to extend stakeholder ownership beyond advisory groups into the wider user community [28]. However, it is argued that there is a wide gap between these concepts and MSAC policy and practice, and that an evolutionary leap from the consultation-interpretation paradigm to one based on meaningful stakeholder participation and joint planning is required to bridge this gap. The Habitats Directive provides a major opportunity to successfully designate a relatively large number of MSACs as part of a European network, and this is an opportunity which should not be jeopardised by failing to learn from past lessons.

References

- [1] Comment during debate on MNRs, 'House of Lords', *Official Report*, 17/5/95, col. 566.
- [2] S Gubbay, 'Management of Marine Protected Areas in the UK: lessons from statutory and voluntary approaches', *Aquatic Conservation: Marine and Freshwater Ecosystems*, Vol. 3, 1993, pp. 269-280.
- [3] R V Salm and P Price, In: S Gubbay, (ed.), *Marine Protected Areas: Principles and Techniques for Management*, Chapman & Hall, London, 1995, p. 15.
- [4] *Pers. Comm.* (20/11/96) from the author of the report: W G Sanderson, *Rare marine benthic flora and fauna in Great Britain: the development of criteria for assessment*. Joint Nature Conservation Committee, Peterborough, Report No. 240, 1996. However, it is important to note that Britain has a special responsibility for the conservation of certain vertebrate species such as the Atlantic grey seal (*Halichoerus grypus*), of which it holds 40-45% of the world population (K Hiscock, in *Marine Biodiversity* R Ormond and J Gage, eds Cambridge University Press, Cambridge, 1997, p. 420).
- [5] J Gibson, 'Coastal zone planning and law: the role of law in the management of the coastal zone in England and Wales', *Marine Policy*, Vol. 17, No. 2, 1993, pp. 118-129.
- [6] R Sidaway, *Recreation and Tourism on the Coast: Managing Impacts and Resolving Conflicts*. In Eds Healy and Doody *Proceedings Directions in European Coastal Management*, European Union for Coastal Conservation, Leiden, The Netherlands, 1995, pp. 71-78.
- [7] Countryside Council for Wales, *Skomer Marine Nature Reserve Agreed Management Policy*, CCW, Bangor, 1993.
- [8] Nature Conservancy Council, *Loch Sween Proposed Marine Nature Reserve: Discussion Document*, NCC, Edinburgh, 1990.
- [9] J Greenfield, 'Divers: can you kiss St Abb's goodbye?' *Diver*, Vol. 40, No. 6, 1995, pp. 42-45.
- [10] S Welton and S Fowler, 'The Dorset Heritage Coast project with particular reference to the Kimmeridge project', *Recreation Ecology Research Group Report*, Vol. 10, 1984, pp. 32-39.
- [11] T Lauck, C Clark, M Mangel and G Munro, 'Implementing the precautionary principle in fisheries management through marine reserves', *Ecological Applications*, Vol 8, No 1, Suppl. pp. S72-S78.
- [12] L Warren and S Gubbay, eds, *Marine Protected Areas: a Discussion Document*, Compiled for the MPAs Working Group. WWF, Godalming, 1991.

- [13] Council of the European Communities, The European Community Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (92/43/EEC), *Official Journal of the European Communities* L206, 22nd July 1992, pp. 7–50.
- [14] The Conservation (Natural Habitats, etc.) Regulations. Statutory Instruments, No. 2716, Her Majesty's Stationary Office, London, 1994.
- [15] Department of the Environment and the Welsh Office, *Consultation Paper: Implementation in Great Britain of the Council Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (92/43/EEC)*, The Habitats Directive, DoE, Bristol, 1993, para. 2.3.8–2.3.15.
- [16] WWF (World Wide Fund For Nature), *The Habitats Directive: Time for Action*, WWF Godalming, UK, 1992, pp. 38–41.
- [17] L Warren, 'Marine protection under the EC Habitats Directive', *ECOS* Vol. 17, No. 1, pp. 29–33.
- [18] Scottish Natural Heritage, *Natura 2000: a guide to the 1992 EC Habitats Directive in Scotland's marine environment*, SNH Publications, Battleby, 1995.
- [19] SOAEFD (Scottish Office Agriculture, Environment and Fisheries Department), *Scotland's Seas and the Habitats Directive: Proposed Special Areas of Conservation in the Marine Environment*, Scottish Office, Edinburgh, 1996.
- [20] This argument is expanded upon in S D Edwards, P J S Jones and D E Nowell, 'Participation in coastal zone management initiatives: a review and analysis of examples from the UK', *Ocean and Coastal Management*, Vol. 36, No. 1–3, pp. 143–166.
- [21] S Wells and A T White, 'Involving the community', in Gubbay, *Marine Protected Areas: Principles and Techniques for Management*, Chapman & Hall, London, 1995, pp. 61–84.
- [22] S Kaza, 'Community involvement in marine protected Areas', *Oceanus*, vol. 31, No. 1, 1988, pp. 75–81.
- [23] C Donaldson, *Working in Multi-stakeholder Processes*, Environment Canada, Ottawa, 1994. Discussed by J P Ellsworth, L P Hildebrand and E A Glover, 'Canada's Atlantic Coastal Action Programme: a community-based approach to collective governance', *Ocean and Coastal Management*, Vol. 36, No. 1–3, pp. 121–142.
- [24] B D Causey, 'Enforcement in marine protected areas', in Gubbay *Marine Protected Areas: Principles and Techniques for Management*, Chapman & Hall, London, 1995, pp. 119–148.
- [25] M Sant, 'Environmental sustainability and the public: responses to a proposed marine reserve at Jervis Bay, New South Wales, Australia', *Ocean and Coastal Management*, Vol. 32, No. 1, 1996, pp. 1–16.
- [26] Ninth Report of the Environment, Transport and Regional Affairs Select Committee, *English Nature*, House of Commons, HC 790, para. 32, July 1998.
- [27]. G Hardin, 'The tragedy of the commons', *Science* Vol. 162, No. 3859, 1968, pp. 1243–1248. In this case with reference to incomers and new stakeholders not party to the voluntary MSAC management scheme and whose cooperation with it may require statutory enforcement.
- [28] D Laffoley and J M Baxter, 'Putting the concept of sustainability into practice for the management of MAC-PAs: the evolving approach in the UK', in M P Crosby, (ed) *Proceedings of the Second International Symposium and Workshop on Marine and Coastal Protected Areas: Integrating Science and Management*, NOAA, MD 20910 USA, pp. 56–66.