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What is the future for marine protected areas in Irish waters?

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ABSTRACT

The UK and Ireland, in common with most other European states, are in the middle of a period of rapid expansion in the number of marine protected areas (generally as Special Areas of Conservation, SACs, to meet the EU Habitats Directive). This level of activity will dominate the future of marine protected areas in Irish waters, presenting opportunities for marine conservation and potentially bringing wider benefits to society. The success of SACs is likely to depend heavily on the attitudes and engagement of people that use protected sites ('stakeholders'). This article reports on a stakeholder workshop where the potential benefits, achievement of potential and possible improvements in marine protected areas were discussed. A lack of baseline data and inefficient communication of existing information were felt to restrict the perceived success of some existing reserves. Improvements seem possible in legislative coherence, public engagement and in the science base. Resources for monitoring and managing protected areas are always likely to be stretched. Ways have to be found to make use of whatever data are available, potentially leading to public access web sites for each SAC where stakeholders can upload information. There appeared to be a broad consensus on many points in the day's discussions. In keeping with the workshop format, individual participants were invited to emphasize areas of omission, disagreement or consensus in comments that follow the main body of this article.

INTRODUCTION

The theoretical and practical issues associated with marine protected areas (MPAs) are now a major preoccupation of the marine conservation community. Although marine conservation programmes are still considered to be less developed than terrestrial equivalents (Hendriks *et al.* 2006), there is an unprecedented worldwide level of activity in designing and designating MPAs. There have been an average of over 100 MPAs designated in each year of the last decade (Wood 2005). There has also been an exponential growth in scientific papers referring to MPAs or marine reserves, with over 200 such articles published in each of the last two years (figures based on an ISI Web of Science literature search). The level of activity reflects international commitments based on the Rio and Johannesburg summits: to produce an effective global network of MPAs by 2012.

The international programmes agreed as part of the Rio process make explicit reference to the need for stakeholder involvement if protected areas are to be effectively managed (Conference of the Parties decision VII/28). With the high level of activity relating to marine protected areas, there is a danger that the 'stakeholder involvement' aspects of the process will be overlooked. With this in mind a stakeholder workshop was organised on the 12th of September 2006 in Dublin. The workshop was funded as part of a Higher Education Authority (HEA) North-South grant on the function, design and monitoring of marine protected areas. The cross-border nature of the workshop offered an opportunity to compare issues as they occur in different legislative frameworks and to share examples of 'best practice'. Participants were drawn from universities, government agencies, and the fishery and tourism sectors. The aim of the day's discussions was to identify areas of consensus and disagreement with respect to the following questions:

- a) What are the potential benefits of marine protected areas?
- b) Are marine protected areas achieving their potential?
- c) What improvements can be made to ensure that marine protected areas reach their potential?

The authors of the main body of this manuscript acted as rapporteurs to discussions based on the questions listed above. With a wide variety of participants (see list below), unanimous agreement across all issues was not expected. As part of the workshop it was suggested that the rapporteur summaries would be circulated to workshop participants so that workshop participants had an opportunity to indicate areas of agreement or disagreement with the consensus views presented. These views are presented in a comments section at the end of this article.

BACKGROUND TO DISCUSSIONS

The main form of marine protection for European states in the near future will occur through the designation of Special Areas of Conservation (SACs, as outlined in the Habitats Directive, European Council 1992). Although certain marine areas had legislative protection before the Habitats Directive, the 'marine' features protected were often intertidal. Protected areas where the main purpose of the designation was marine conservation were uncommon (Hiscock and Breckels 2007). For example there are just three Marine Nature Reserves in the UK with a total area of 209 km² or 0.1% of the UK's territorial waters. The current phase of inshore SAC designation will result in over 80 UK sites that contain some marine habitat. The situation in Ireland is similar, with SACs due to make a major contribution to marine habitat protection. When all the proposed sites are designated, over two thirds of protected areas in Ireland with a marine element will be SACs.

An important point to note, and one that is a cause of much debate and misunderstanding, is that the term 'marine protected area' has a large number of different meanings. The IUCN definition of a marine protected area was arrived at by consensus and is broad in scope: 'Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment' (IUCN 1988). Marine protected

areas are rarely 'no take': where removal of any organisms is prohibited. Some researchers prefer to use the term marine reserve solely for examples of no take areas. This is inevitably a source of confusion as some legal designations that use the term reserve (such as the UK Marine Nature Reserves) do not necessarily refer to a no take provision. We have followed the convention of using reserve to mean 'no take' except where the term reflects legal designations. SACs are not in themselves no take: their main purpose is to conserve habitats and species deemed most worthy of protection across Europe. The exploitation of resources in an SAC is perfectly acceptable if it is sustainable and does not damage a feature for which an SAC was designated.

While the provision for marine conservation within SACs may appear to be limited in comparison to no take protection, the threat of infraction proceedings with the European Court of Justice compels member states of the EU to meet their conservation commitments. This contrasts with national legislation, where failure to conserve biodiversity may only have been censured by public opinion, particularly if the agent of habitat destruction were to be a government department immune from prosecution. Infraction fines for failure to comply with EU legal instruments such as the Habitats Directive are potentially large. For example, France was found not to have taken sufficient steps to restrict the sale of undersized fish (in contravention of the Common Fishery Policy). This non compliance with community legislation resulted in a fine of Euro 20 million in July 2005, with additional fines of Euro 57 million for any period of six months where undersized fish continue to be for sale.

Given that the future for marine protected areas for many European states is likely to be based on the proposed network of SACs, the workshop conclusions are presented in this context rather than in the wider context of all marine protected area types. The situation may change slightly where states, such as the UK, are considering legislation to cover marine spatial planning. However, spatial planning is likely to incorporate the existing SAC network,

so issues regarding the placing and management of SACs will still be central to discussions of marine protected areas.

WHAT ARE THE POTENTIAL BENEFITS OF MARINE PROTECTED AREAS?

There was a general consensus among participants that SACs can be an effective tool for the sustainable management of natural resources. This view reflects the general conclusions of the wider MPA literature (Halpern and Warner 2002; Barrett *et al.* 2007). SACs can be used to provide representation of surrounding habitats, can conserve areas of exceptional biodiversity and areas where rare species are found. In terms of values outside direct biodiversity conservation, SACs may help protect areas of high aesthetic value or distinctiveness. Scientific researchers may benefit from SACs as they can be suitable study sites, particularly if 'reference' conditions are needed to evaluate impacts elsewhere in the marine environment.

Although it is not a primary consideration in site selection, SACs may provide benefits to the surrounding marine environment. There is the potential for the protection of important spawning habitats, including those of commercially important fish species. Similarly, populations of species outside a site may be subsidized by 'spillover' from the protected area.

Workshop participants with experience of established reserves emphasized that protection can raise the profile of an area, promoting tourism and providing a source of pride in the local community. Protected areas can also act as a focus for educational activities and can increase communication between the scientific community and the general public.

From the point of view of conservation managers, SACs are the means by which legislative commitments can be met. Protected areas may act as 'banks' to sustain populations of native species, including a role in maintaining the genetic diversity of individual species. This

use implies that SACs may at some point be of value in restocking areas outside the protected area. If the SAC is relatively small it may be a site where a specific labour intensive management regime could be maintained over time – such as the removal of introduced species.

ARE MARINE PROTECTED AREAS ACHIEVING THEIR POTENTIAL?

When matched against the potential benefits, there was a consensus that marine protected areas within the UK and Ireland have not generally been reaching their full potential. The low number of ‘success stories’ may reflect two key features of marine conservation. Firstly, marine protection is still in the relatively early stages of site selection and consultation. There are few sites that have been established long enough for the benefits to be clear. A second issue limiting the apparent success of marine conservation is that it is difficult to identify and measure conservation benefits. Baseline data are often poor or lacking. The relatively long established reserve at Lough Hyne may be an exception to some of these conclusions, in that it is clearly felt to be an asset to the local community and for tourism. However, even at an extensively studied site such as Lough Hyne, it may be difficult to judge if conservation goals are being met.

In some circumstances, legislative issues limit the effectiveness of marine protected areas. There are unresolved issues in designating protected areas on the high seas. Even where the protected area falls within a single jurisdiction, the available legislation may not provide a suitable framework for site management. Cork *et al.* (2006) concluded that the Marine Nature Reserve designation for Strangford Lough was not an appropriate tool for managing such a complex multiple use area. Legislation has been successful in stopping perceived impacts on SACs (for example there is now a trawling ban in Strangford Lough to protect *Modiolus* reefs). However, this management has been reactive, resulting in a situation where neither the conservation targets nor the interests of the fishing community are currently being satisfied.

WHAT IMPROVEMENTS CAN BE MADE TO HELP MARINE PROTECTED AREAS REACH THEIR POTENTIAL?

Improvements seem possible in three aspects of marine protected area performance: legislative coherence, public engagement and in the science base. Given the competing pressures on coastal resources, nature conservation cannot be considered in isolation. Workshop participants, however, felt that different European directives, national legislation and byelaws were not always applied within a coherent framework. For example, it is not immediately clear how licensing for the 22 aquaculture sites in Strangford Lough has been cross referenced with conservation priorities. In many cases legislative responsibilities are carried out in separate government agencies or by other 'competent authorities'. This is perhaps inevitable, but at best this situation leads to a lack of coherence and at worst there can be conflicts between government agencies. There are two ways in which legislative coherence may be improved. In the first place, a statutory duty of care for nature conservation could be placed on competent authorities. Tyldesley *et al.* (2000) discuss how the duty of care would need careful wording as a responsibility merely to 'take account' of nature conservation would not be effective. A more ambitious approach to improving legislative coherence would be to have a government agency that could oversee all issues with respect to the marine environment, providing both a clearer planning structure and clearer point of reference for interested parties. This approach has been considered in consultations for the proposed UK Marine Bill. At the time of writing, however, the UK government has delayed putting a Marine Bill before parliament. For any state, there would clearly be many issues to be resolved before a marine planning agency could be set up.

Any conservation legislation needs enforcement. This is easier to achieve at the planning or sector level, where resource users have no option but to work with the system and individual states are accountable to European Directives through infraction fines. There are greater

difficulties in enforcing site-specific byelaws that relate to individual actions such as accidental or intentional killing and/or removal of fauna or flora.

Public engagement can increase the effectiveness of nature conservation legislation. When people are seen to be behaving in ways sympathetic to nature conservation, this can encourage others to do so. Workshop participants felt that more could and should be done to disseminate information about the locations and goals of marine protected areas. This would include signage at SACs, but there were also felt to be opportunities for increasing awareness through education programmes and public events.

Perhaps unsurprisingly, greater investment in the science base and in conservation agencies were felt to be important in meeting conservation objectives for SACs. Resources were thought to be relatively stretched in the Republic of Ireland where one ranger may cover approximately 10 times the number of SACs as the equivalent position in Wales. No equivalent position to SAC ranger or warden exists in Northern Ireland. These resource issues make it difficult to manage events at single sites, mean that less time can be spent engaging with the local community at each site, and reduce the scope for effective monitoring of site condition. There are issues to be addressed in deciding on consistent, robust and reliable means of monitoring the condition of sites. Individual scientific projects are not generally designed with monitoring in mind, resulting in inconsistencies when this information is used to try and identify site-specific changes. Beyond the limited resources available to conservation agencies, it is difficult to identify where support for long term site specific monitoring will come from. A stronger managerial culture in universities means that academics can no longer justify work-related involvement in conservation activities unless these are seen to generate grant income for the university. Many sources of such grant income are not intended to support applied conservation research.

If there are difficulties in legislative coherence, public engagement and in the science base in the predominantly coastal SACs proposed to date, these issues are likely to be more difficult to resolve as offshore SACs are designated. The 1999 UK High Court ruling made it clear that the Habitats Directive should apply throughout a state's Exclusive Economic Zone (200 nautical miles). An example of the legal difficulties is evident in the lack of appropriate legislation to enact the currently proposed draft offshore SACs within the UK EEZ. Further problems are likely to occur in monitoring and protecting offshore sites. These concerns are evident in discussions over the evidence base for the four candidate offshore SACs in Irish waters (ICES 2007).

Aside from increases in resources, one means of increasing the information base for managing marine protected areas is to involve the site users ('stakeholders') in generating information. There were felt to be many potential stakeholders, ranging from sectoral interests such as fishery and aquaculture, though clubs and societies (e.g., divers) and in the education system, including both schools and universities. The data available may be already being collected, but not collated with respect to conservation. For example, the yields from aquaculture sites and **the results of shellfish contaminant tests (Shellfish Hygiene Directive, European Council 1991)** supply information on water quality and potential stressors to the ecosystem.

Key to sustaining data gathering in the wider community is that participants should see that their efforts are of value. The worldwide web provides a means of collating and communicating information, with opportunities for participants to comment on posted material. The sense of ownership when subscribers can edit and amend material may be sufficient reward to sustain long-term involvement in an SAC-based site. Public bodies may host such sites, but the diversifying nature of the web means that other formats (so called 'wiki' web sites) could be used to collate and disseminate information about specific SACs.

This area merits investigation, although some consideration would be needed with respect to the ground rules for data quality and interactions with other users.

CONCLUDING REMARKS

The designation of large numbers of marine SACs marks a step change in the level of marine conservation across Europe (Johnson *et al.* 2007). Establishing an effective network of sites designated under the Habitats Directive is likely to represent the most important measure for marine conservation in Ireland in the near future. This situation creates many opportunities for the improved conservation of habitats and species and for wider benefits to society. The creation of so many protected areas also carries some risks. The SAC project may be seen as of limited value without better communication of the conservation aims, more coherent management across government departments, greater involvement of stakeholders and an improved evidence base for judging if conservation aims have been met. It may also be important to manage expectations attached to the SAC project. The processes for site selection within the Habitats Directive may not be sensitive to national conservation priorities: there will still be a role for protected sites outside the SAC network. There is also a risk if advocacy of marine reserves for fishery purposes is confused with the designation of SACs. The site selection process within the Habitats Directive is not primarily concerned with fisheries. Even with the habitat protection provisions within SACs, spillover of populations to adjacent fisheries seems unlikely. Management plans for SACs may achieve sustainable livelihoods for local fishermen, but this is likely to be held back by the sparse evidence base for evaluating the conservation status of SACs. Sustainable management plans for SAC resources are still in their early stages of development (e.g., McLaughlin *et al.* 2007). The gaps in site-specific data suggest that perhaps the most important priority is to ensure that all possible information should be gathered and evaluated to lay a suitable foundation for carrying the process forward.

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Workshop participants:

Ken Bradley	Department of the Environment (NI)
Joe Breen	Environment and Heritage Service
Tasman Crowe	University College Dublin
Patrick Graham	National Parks and Wildlife Service
Shawn Harradine	Russagh Mills Hostel and Adventure Centre
Dick James	Northern Ireland Fish Producers Organisation Ltd
Mark Jessopp	University College Cork
Mark Johnson	Queen's University Belfast
Terri Kearney	Skibbereen Heritage Centre
Marie Kennedy	Atlantic Sea Kayaking
Rob McAllen	University College Cork
Niall McDonough	Centre for Marine Resources and Mariculture
Caitriona McInerney	Queen's University Belfast
Olwyen Mulholland	University College Dublin
Francis O'Beirn	Marine Institute
Declan O'Donnell	National parks and Wildlife Service
Elizabeth Sides	National Parks and Wildlife Service

Participants' comments

Dick James: I would consider that closed or managed areas for fisheries management should be purpose specific. As a tool for general nature conservation, SAC's would not in most cases fulfil fisheries management functions. The article slightly avoids this issue.

Mark Johnson: Yes I agree with the point about SACs, they are not suitable tools for fisheries management. A recent review pointed out that the Habitats Directive has little power to manage fisheries (RCEP 2004): “there is a reactive, ad-hoc process by which protection has to be specifically invoked through local byelaws, Ministerial orders or measures under the Common Fisheries Policy. Action is thus usually only taken on the basis of proof of existing threats or damage, not in the interests of precaution.”

Dick James: More specifically I feel you need to research the legal authority and responsibility for marine affairs involving the many broad aspects you cover. As I understand it, the legitimacy is contained in the United Nations Convention on the Law of the Sea (UNCLOS 1982) text and is specific to Coastal States (with some words about Highly Migratory Species) I do not think the EU has any legitimacy in that area other than that it has usurped authority without responsibility.

Mark Johnson: My understanding, although not as a legal expert, is that the EU Common Fisheries Policy and other Directives are consistent with UNCLOS. The difficulty is in reconciling disputes over fisheries regulation as there may be some question over the nature and limits of national sovereignty within the context of EU treaties (It is the coastal states that have responsibility under UNCLOS but these responsibilities appear to be exercised by the EU). This seems to be the area where compromises occur and the rights of individual coastal states may be overlooked as part of larger agreements.

Terri Kearney: I would like to emphasize reserves as a tourism resource. As mentioned, they do raise awareness and provide a focus for educational activities. They also offer an invaluable resource to those in the locality involved in tourism.

The trend in tourism in Ireland is changing with much growth in urban areas and a significant decline in rural areas, prompting all sorts of rural tourism promotions. Many rural areas are

heavily dependant on tourism and this decline is resulting in people having to leave these areas to find work. The value of marine protected areas for tourism is not limited to education; they may also provide an economic and social advantage to otherwise disadvantaged areas.

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