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Shellfishing, eider ducks and nature conservation on the Wash: questions raised by a fractured partnership

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Abstract

This article examines the state of current approaches to the governance of common pool resources (CPRs), the impacts of the recent emergence of the partnership paradigm and the consequences for the management of CPRs. These issues are explored through a case study of the Wash European Marine Site partnership, where a Public Inquiry recently upheld the refusal of the conservation agency to grant mussel cultivators permission to scare eider ducks off their lays using sonic bird-scaring devices. As a result, the relationship between the conservation agency and the mussel cultivators has been severely damaged causing a 'fracturing' of the partnership. Through this case study the paper explores the contradictions involved in statutory partnerships and asks if it is possible to use partnerships to empower local communities while the state remains in overall control.

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Introduction

This paper is focused on concerns about mussel harvesting on the Wash estuary on the east coast of England, the recent introduction of strategic biodiversity conservation obligations and the events that led to the 'fracturing' of the estuary management partnership. Using this case study, it explores some of the contradictions in the concept of statutory partnerships and the consequences for research on the governance of common-pool resources (CPRs) of the imposition through such partnerships of strategic biodiversity conservation obligations.

In June 2006 a Public Inquiry was convened in Boston, Lincolnshire to resolve a disagreement between the UK Government's nature conservation agency (English Nature) and mussel farmers working on the Wash. The previous year the mussel farmers had applied to English Nature for permission to scare eider ducks of their lays using sonic bird scaring devices. They argued that eider numbers had increased dramatically since 2003 and were decimating the mussel lays, rendering mussel farming on the Wash unsustainable. However, English Nature refused their request on the grounds that the Wash is an important foraging area for large numbers of birds and the use of bird scarers is likely to disturb them, to the detriment of the ecological integrity of the site and contravening the 1992 Habitats Directive. The Inquiry recommended that all the appeals be dismissed and the judgement was upheld by the Secretary of State.

Methodology

The investigation of this case study was primarily carried out using non-participant observation of the Inquiry proceedings and content analysis of the documents submitted by the parties involved and the inspectors report. In addition to subsequently analysing the documents arising from the Inquiry, actually observing the proceedings and informally discussing the evidence with the different actors made it possible to gain a much deeper insight in to the process, the perspectives of those involved and why they held such strong views.

Theoretical Background

The ever-increasing pressure placed upon natural resources has led to the development of a significant debate on how best to manage CPRs (Dietz et al. 2002). Many key studies have concluded that new institutional arrangements, such as local partnerships between different actors, can be effective in achieving strategic management objectives for CPRs (Ostrom 1990; 1998; 1999). It has become increasingly clear over the last two decades that local people affected by conservation initiatives should be involved in their planning and management to increase the fairness of decisions and promote local ownership and co-operation (Jones and Burgess 2005). This 'new paradigm' for protected areas was recognised at the IUCN's 5th World Parks' Congress (Phillips 2003).

The partnership approach to the management of CPRs has been promoted and adopted by governments and NGOs across the world as a democratic and fair way to manage such resources. However, many contemporary partnerships are statutory. Through legislation, central governments have instructed regional authorities and organisations responsible for environmental management to adopt the 'partnership approach', and to set up partnerships to manage resources.

This development in the concept of the partnership approach has significantly altered the paradigm of partnership from a truly bottom-up approach to governance to one which is ultimately controlled by the state in an essentially top-down manner, while still giving local actors the impression that they have a degree of control over local resources. As Koontz and Thomas (2006) propound, the decision to collaborate (or not) and to encourage collaboration (or not) has become a strategic choice made by public officials to achieve specific goals.

Jones and Burgess (2005) point out the majority of the case studies analysed by CPR analysts have focused on case studies purposefully selected to represent contexts where the emphasis is on self-governance by self-organised local actors (Ostrom 1990). Along with Jones and Burgess's work this paper focuses on a new dimension to the analysis of CPRs where the role of the state and the related potential for legal interventions are important contextual factors. The paper asks whether, under such contexts, new institutional arrangements are appropriate or even possible tools of governance.

Governing CPRs

The management of CPRs invariably requires conflicts between different user groups and interest groups to be addressed. There is no easy means of addressing these conflicts, which are referred to as collective action problems (CAPs). As Hardin (1968) illustrated with the metaphor of the prisoners' dilemma, some actors will be unwilling to co-operate with others for the long term collective good and instead focus their efforts on exploiting the resource for their immediate personal gain. For many years the response to such 'free riding' behaviour has essentially been focused on the regulation of resources by the state to ensure compliance, as the alternative, i.e. the privatisation of resources to ensure that users have a long term vested interest in maintaining the sustainable uses of resources, is often practically and politically unfeasible.

Over the last two decades there has been a growing recognition of the problems associated with such 'top-down' approaches to the management of CPRs, not least because it is often difficult to enforce strict rules and regulations governing resources that are often located in rural areas that are difficult to access. Increasingly, governments have realised that if the governance of CPRs is to be successful, it is necessary that local resource users are involved in the decision-making process. Not only does this enhance the fairness of the decisions, it also promotes feelings of local ownership of the resource and encourages co-operation between different user groups (Jones and Burgess 2005). This partnership approach to managing resources has become known as collaborative management or co-management (Borrini-Feyerabend et al. 2004) and is widely considered to provide a real alternative to the management approaches of state control or privatisation proposed by Hardin (1968) to avoid the tragedy of the commons. It is clear that the participation of local stakeholders can occur at a number of different levels, from consultation through to the full empowerment of stakeholders to produce and implement policies (Murphree 1994).

It has been argued by many commentators e.g. Rydin and Pennington (2000); Ostrom (1990); Ostrom et al. (1993), that the key to developing a successful programme of co-management lies in developing social capital within the community of resource users and interest groups. Social capital is essentially 'trust' as a basis for reciprocated cooperation within a society, community or organisation, and should be looked at as a method of exchange in the same way as human and physical capital, making possible certain ends that in its absence would not be possible (Coleman 1988). This idea has been further developed by Fukuyama (1995), who

argues that it is possible to explain patterns of regional and economic developments by examining the levels of social capital in a given region.

The social capital approach seeks to modify institutional design and policy processes so that incentive structures are developed that encourage and support actors in overcoming CAPs (Jones and Burgess 2005). Incentive structures are particular types of institution, including shared norms and enforcement laws, which encourage or require co-operation amongst resource users (Ostrom 1990; 1998; 1999). There is a growing interest in the modification of institutional design and the use of such incentive structures to achieve, *inter alia*, strategic nature conservation objectives. The primary means of developing these conceptual ideas into practice has been through the development of state-community partnerships.

Co-management through such partnerships offers significant potential for the successful governance of the marine environment (Kelleher 1999; Clifton 2003; Jones and Burgess 2005). A number of commentators have specifically identified the importance of social capital in the management of fisheries, e.g. Pomeroy et al. (2001). Kelleher (1999) emphasises the critical importance of deep stakeholder involvement through the development of partnerships based on trust in order to promote co-operation with marine protected area (MPA) initiatives. More explicit reference to the role of social capital in MPA management is made by Rudd et al. (2003).

Jones and Burgess (2005) focus on the potential of such 'new institutionalism' approaches (Ostrom 1990) to fulfil strategic marine biodiversity conservation obligations in the context of UK MPAs. They explored the initial CAPs that had to be overcome and looked at possible future CAPs that might arise. This paper takes their work as its starting point and, through the experience of the Wash MPA, explores the consequences and possible future implications of a partnership that has, to a certain degree and extent, become fractured.

The changing face of Community Partnerships

'Partnerships' have become a central plank of government policy in the 1990s and 2000s and such approaches are closely associated with the 'third way' philosophy that is prominent in contemporary UK politics (Wilson and Charlton 1997). However, the meaning of the term 'partnership' is somewhat ambiguous and has been used in a wide variety of contexts. In terms of partnerships for the purpose of improving governance, the aim is to create an initiative in which partners work together to achieve a commonly agreed set of goals and objectives and in so doing deliver more than they could do alone (Wilson and Charlton 1997.). The partnership approach (or co-management approach) has been advocated as a useful tool to address social and economic needs as it offers greater involvement by all sectors of society in the decision-making process and, as a result, an inherently more effective way of allocating public funds. For the purposes of environmental management the primary attraction of forming partnerships has been the scope to involve local people and interest groups in the management of environmental resources, the aim being to facilitate a bottom-up approach and help relieve tensions amongst local people, scientific 'experts', policy makers, etc.

However, partnerships are only beneficial if they have the full support of the local communities. If partnerships are imposed on communities to achieve strategic policy objectives this key principle is lost and there is a real danger of undermining local governance institutions (Jones and Burgess 2005). In this context Berkes (2002) discusses the importance of vertical linkages, whereby there are couplings or interactions between different levels of

the governance structure. Such vertical linkages are important as they ensure that stakeholders are involved at all levels of the process. However, when partnerships incorporate a large number of people who only have a limited consultative role rather than being actively empowered in the formation and implementation of policy, it is challenging to gauge the level of support amongst different sectors of the community.

Cooke and Kothari (2001) argue that such participation may be 'the new tyranny', imposing goals and institutions on local people, overriding existing legitimate decision-making processes, reinforcing the interests of the already powerful and displacing other potentially beneficial approaches. If a partnership is imposed on local communities of stakeholders, it is reasonable that they may regard the initiative as an authoritarian 'top down' institution which they are unwilling to engage with, rather than a true 'partnership'.

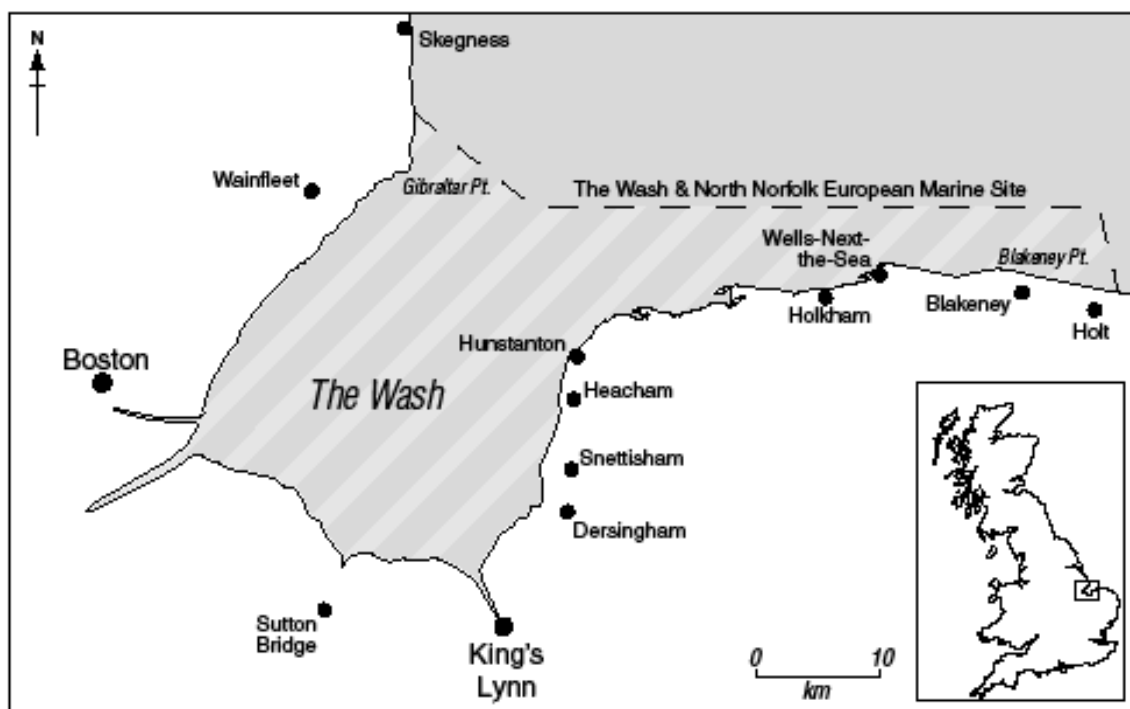
The Wash Context

To gain an understanding of the background to this story, it is necessary to briefly examine the geographical, legal and socio-economic contexts in which it unfolded.

Geographical context

The Wash is the largest marine embayment in Britain situated on the East coast, with the second largest expanse of inter-tidal sediment flats in the country, at 29,770 ha (Figure 1) (Mortimer 2002a). The Wash is also one of the most important areas for nature conservation in the UK as an internationally important habitat for shorebirds. During the latter half of the 1990s the Wash supported over 300,000 shorebirds, including 11 populations of international importance (Musgrove et al. 2001).

Figure 1 The Wash & North Norfolk European Site situated on the East coast of England



Legal context

The inter-tidal area of the Wash estuary is subject to a number of nature conservation designations under national (Site of Special Scientific Interest, National Nature Reserve) and international (Ramsar site) legislation. It is, however, the more recent European legislation that is of particular relevance to this analysis. In 1995 parts of the intertidal area were designated as Special Protection Area (SPA) under the European Councils Directive on the Conservation of Wild Birds (1979). However, this Directive was weakly worded and enforced, so the SPAs on the Wash did not lead to any major conflicts. The EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (1992, hereafter the Habitats Directive) is more ambitious in its obligations to conserve Special Areas for Conservation (SACs) and SPAs. In 1996 the Wash and North Norfolk coastline was submitted to the European Commission as a candidate SAC on the basis of its importance for several listed marine and estuarine habitats (Mortimer 2002b), including mudflats and biogenic reefs, such as those made up of mussels.

The UK Regulations that implement the Habitats Directive provide specific new responsibilities and measures in relation to intertidal and subtidal SPAs and SACs, collectively referred to as European Marine Sites (EMSs). They require relevant authorities to work together to establish and implement a management scheme for each EMS and it is expected that one authority will normally take the lead, this generally being the nature conservation agency. Certain powers are reserved to the UK Government to direct the relevant authorities to take specific actions in the event that the scheme is failing to conserve EMS features.

The partnership approach is clearly incorporated within the EMS policies, the guidance for which (DETR 1998) strongly recommends that other 'stakeholders', including owners/occupiers, marine resource harvesters, industry representatives, local people and other interest groups, be involved in developing the scheme. To achieve this, the guidance suggests the formation of advisory groups and regular stakeholder consultations during the development and operation of the scheme. Therefore the level of participation of stakeholders within the partnership is primarily restricted to what Borrini-Feyerabend (1999) describes as consultative, although it is clear that the relevant authorities are required to consult regularly with stakeholders on both the implementation of the schemes and future developments.

Although the nature conservation agency does not have any formal powers to enforce changes to the scheme, it can advise the Environment Minister to exercise his/her powers under the Regulations, forcing the relevant authority to make improvements. If this fails, the European Court of Justice can step in and require the UK government to take action to ensure the maintenance of favourable condition.

The underpinning message of the DETR (1998) policy guidelines is that the scheme should be agreed upon on a voluntary basis, and the nature conservation agency should take the lead role in facilitating agreements between the relevant authorities and EMS users. However, this does not necessarily detract from the fact that the nature conservation obligations and the scheme to fulfil these obligations have been imposed on the communities by central and European government. In particular, it is important to note that the impacts of any plan/project which may affect the integrity of an EMS are required to be assessed. If the impacts are found to be significant the plan/project can only go ahead if there are no alternatives and if there are imperative reasons of overriding public interest (IROPI), including those of a socio-economic

nature, subject to compensatory measures such as habitat creation. This paper concerns just such a plan/project: the application to employ wailers to reduce eider predation on cultivated mussels.

Socio-economic context

The economy of the Wash is dominated by agriculture, fishing and a few small ports. There is a limited tourism around the Wash, but it is very important to the town of Skegness (Mortimer 2002b). Traditional activities, including those based on common rights, such as samphire gathering, bait digging, wildfowling and shellfish farming/gathering, are widely recognised by English Nature and the other relevant authorities as a particularly important aspect of the local culture and economy (Mortimer 2002b.).

Traditionally, there has been a very strong local involvement with the coastline, which has helped to create a high sense of ownership regarding its management amongst the local communities. However, it is clear that the high sense of ownership has resulted in strong opinions regarding the management of the area. As a result, in the past there has been some resistance towards national and international policies, such as the Habitats Directive and the Regulations that implement them, designed to modify the activities of local users (Gardner 2005).

Mussel harvesting on the Wash

The Wash has supported important shellfisheries for cockles and mussels for more than a century. Two types of mussel fishery are supported: the harvesting of mussels from wild beds and the cultivation of mussels through transplanting stocks onto 'lays' on the lower shore. The cultivation of mussels in this way has been carried out since the early 1900s (Dare et al. 2004). Since the late 1980s, fisheries for cockles and mussels have declined sharply. These fisheries have always been subject to large and unpredictable natural fluctuations, but since the mid-1980s mussel spatfall on to inter-tidal beds has been negligible (Dare et al. 2004). It is only recently that the natural mussel beds have started to show signs of recovery.

There have also been significant changes in the methods used to exploit the shellfisheries. Prior to 1970 the fishery mainly relied on traditional methods, with much collection being carried out by hand. However, since the 1970s new equipment has been introduced, along with other mechanised and highly efficient fishing practices. Over the same period, there were also significant changes in the nature of mussel cultivation. According to English Nature's 'statement of case' at the Inquiry, following the collapse of the natural fishery in the mid 1990s, the number of lays and their stocking rates increased markedly from 1997 onwards in response to the lack of mussels on the natural lays. Since 1999 'seed' mussel has been gathered from outside the Wash and re-layed for cultivation. There has also been a considerable increase in the landing from the lays, the first sale value of which has been between £0.2 and £1.6 million per year since 2001 (Dare et al. 2004).

Collaborative management on the Wash

The poor state of the mussel and cockle stocks caused concern for a wide variety of Wash stakeholders, including mussel layers/harvesters, scientists, managers and wildlife conservation organisations. As a result, in 1996 the Wash Forum was formed to give all interested parties the opportunity to assess the situation, exchange information, and attempt to

find a solution. This was part of a national initiative to promote the integrated management of estuaries. The forum was chaired by a representative of the regional Sea Fisheries Committee (SFC). The first meeting in December 1996 was attended by representatives of the SFC, government research agencies, the Environment Agency, the Shellfish Association of Great Britain (SAGB), the British Trust for Ornithology (BTO) and the Royal Society for the Protection of Birds (RSPB), as well as representatives of local users of the Wash.

The Wash Forum represented the beginning of the official co-management of the Wash and its resources, although there was, of course, significant informal dialogue between the stakeholders pre-1996. Following a consultation in 1996, the EMS management scheme finally came into force in 2000, after a considerable period of public debate and consultation. It is considered an important tool aimed at conserving the Wash's delicate ecosystem whilst enabling local people to use its resources in a sustainable manner. In the past a number of researchers have looked at the collaborative EMS management programme on the Wash and assessed the effectiveness of the partnerships. Two key studies, Gardner (2005) and Jones et al (2001) concluded that although there were a number of strong opinions and conflicts between individual personalities, overall the partnerships were effective in delivering a sustainable management scheme on the Wash. The problems only started to arise when it became a formal partnership with legal obligations under the Habitats Directive.

Bird predation of the Wash shellfish stocks

Conflicts between shellfish harvesters and birds that feed on shellfish are by no means a new phenomenon or isolated to the Wash. However, the current eider problem has only really emerged in the last three years. The Wash Forum commissioned a number of studies to investigate potential causes of reductions in shellfish stocks (Dare et al 2004, Atkinson et al 2003). Interestingly, Dare et al's study concluded that while birds may have a limited effect on mussel stocks, they could not be blamed for the collapse of the fisheries (Dare et al 2004). Atkinson et al (2003) similarly concluded that the impact of eider predation on shellfish stocks was insignificant due to the relatively low numbers of these birds.

Arguments presented at the Public Inquiry

Outline of the case

Although it was agreed that the number of eiders feeding on the Wash has increased over recent years, the two sides disagreed on the degree and causes of the increase. The mussel cultivators did not point to a specific reason for the increase, while English Nature claimed it was due to the recent intensification of the mussel fishery, which attracted a greater number of birds.

A further complication is that both sides conceded that the wailers are ineffective in scaring eiders off the mussel lays. Therefore, without the success of both the application to use wailers and the separate application to shoot eider, the mussel cultivators maintained that they would have to abandon their lays. As a result, the inquiry was essentially investigating whether or not the mussel cultivators should be allowed to use wailers which they deem ineffective, and English Nature also consider ineffective, but which still constitute a significant risk to the favourable condition of the site. The arguments presented by both sides were focussed on the following points: the reliability and validity of the scientific data regarding the ecological importance of the mussel lays; the potential impact of them being

abandoned; and whether the continuation of mussel cultivation on the Wash represented an Imperative Reason of Overriding Public Interest (IROPI).

Reliability of Scientific Evidence

Both sides conceded that the reliability and validity of a significant proportion of the scientific information presented was questionable. However, they interpreted the data very differently and called for the precautionary principle to be invoked for conflicting reasons. The mussel cultivators argued that the wider ecological impact of abandoning the mussel lays was unclear as they had been in position for over 100 years and had become an essential feature of the ecosystem. Therefore, the scaring of the eiders, which they claimed would not significantly affect the integrity of the ecosystem of the Wash, was necessary to ensure the continuation of mussel farming, as an activity which had become integral to the Wash's ecosystem. English Nature claimed that there was little evidence to support the argument that the artificial lays had an important ecological function and that not enough was known about the wider ecological impacts of the wailers. Consequently, English Nature argued that the wailers should not be permitted, as they claimed that they would have significant impacts not only on the eider population, but also on other bird species and seals that are important components of the Wash's ecosystem, as well as being legally recognised features of the EMS.

This raises an interesting issue with regards to differing interpretations of the ecosystem approach. It is accepted that this concept can, like the related concept of sustainable development, be interpreted by different stakeholders in different ways (Mare 2005), often in a way that justifies the imperative of their vested interests in a given ecosystem (Corkeron 2006). In this case both the mussel cultivators and English Nature supported their case with differing interpretations of the role of mussel farming in the Wash ecosystem, the former arguing that mussel lays had become an essential element of the Wash's ecosystem, the latter arguing that the introduction of measures to reduce eider predation on mussel lays represented a threat to the integrity of the Wash's ecosystem.

This also raises an important question regarding the interpretation and implementation of the precautionary principle, which argues that preventative measures should be taken when there is a suspicion that activities may cause major and irreversible damage to the environment, even if there is no conclusive evidence that such damage will occur (Mirovitskaya and Ascher 2001). However, it does not help when it is unclear which of a number of activities may or may not cause damage to ecosystems, especially given the challenges of establishing cause-effect relationships in marine ecosystems (Jones 2001). Scientific uncertainty can become a major source of CAPs within partnerships working towards the sustainable management of CPRs, as it is a basis for challenging the case for use restrictions where cause-effect links are highly debatable. This is particularly the case for marine ecosystems, as they are complex and our scientific understanding of them is relatively poor (Jones 2001.), and is clearly the case with both the claimed impacts of wailers on bird and seal populations and, to a lesser degree, the claimed role of mussel lays in the estuary ecosystem.

Furthermore, the problem is significantly magnified when there is a conflict between unproven scientific evidence and local knowledge developed over many years. This conflict was exacerbated in the Wash case by the RSPB, who were giving evidence in support of English Nature's case. They claimed that in cases such as this, local knowledge was irrelevant and the decision should be based purely on objective information presented by 'experts'. However, where scientific evidence and local knowledge are at odds, the final decision is

often left to civil servants and politicians who are unlikely to have any significant scientific training or local knowledge.

Imperative Reasons of Overriding Public Interest (IROPI)?

The mussel cultivators made it clear that they thought their case strong enough without having to revert to the legislation regarding IROPI, but included it to add further weight to their case. They argued that the continuation of the cultivation of mussels on the Wash is in the public interest not only for ecological reasons, as discussed above, but also for socio-economic reasons, given its economic and traditional importance. The mussel cultivators also argued that the Wash is a unique environment for the farming of mussels which cannot be recreated elsewhere in the UK. They considered that, although mussels are farmed in small quantities in other locations around the UK, the Wash is seen as the principal site for such mussel cultivation. Furthermore, they argued that failure to protect the mussel lays would severely disrupt both the EU and UK government's policy to develop molluscan aquaculture. In particular, the mussel cultivators noted that, in terms of employment, the continuation of the mussel lays represents an IROPI as they claim that over 100 jobs would be lost if the lays were abandoned.

All these points were flatly rejected by English Nature, who again referred back to the lack of scientific evidence to support the mussel cultivators' claims that the abandonment of the lays would have a negative impact on the Wash's ecosystem. Furthermore, they argued that there is a strong possibility that if the present mussel cultivators abandoned the lays they would be taken over by others prepared to continue cultivating mussels in a less intensive fashion. English Nature disregarded the mussel cultivators' claims that failure to maintain the mussel lays would contradict UK and EU policy on molluscan aquaculture as irrelevant and minimal. They argued that there was no clear policy on molluscan aquaculture and that the policies referred to by the mussel cultivators were very general. Furthermore, they argued that when there is a conflict between law and policy, 'law trumps policy'.

In conclusion, English Nature referred back to a Department of Environment, Food and Rural Affairs, Government Circular (2005) which states that, "*there will be few cases where it can be judged that IROPI will allow a development to proceed which may have a potentially negative effect on the integrity of a European site.*" Accordingly, they urged the Inquiry to address issues of IROPI with caution. The subsequent decision of the Government to reject the mussel cultivators appeal demonstrates that English Nature's arguments were upheld, much to the frustration of the mussel cultivators.

Discussion

It is still too early to establish what the long term impacts of the verdict will be on the Wash mussel fishery. Furthermore, as it was accepted by both sides that the wailers were ineffective in scaring the eiders off the lays, it is unlikely that even if the appeal had been accepted the central issues would have been resolved. What is more interesting, and the central focus of this paper, is the wider implications of this decision for the EMS partnership.

In the light of the verdict, and more importantly the circumstances leading up to and surrounding the Inquiry, we turn to a number of issues which are likely to impact upon the future management and ultimately the social sustainability of the Wash and North Norfolk Coast EMS.

Has the State undermined its new role as facilitator and gone back to its previous role as controller?

In their paper, Jones and Burgess (2005) attempt to predict CAPs which EMSs are likely to have to overcome in the future. Their first concern is that management structures and processes may not provide a sufficient degree of power sharing for the state's role to shift from 'controller' to 'facilitator' (Ostrom 1990). They go on to predict that there is a risk that the conservation agency may end up adopting a controller role in order to ensure that the conservation obligations are fulfilled, instead of simply facilitating discussions between the different partners.

The Wash case study demonstrates that if there is a fundamental difference of opinion between the conservation agency and other partners it is difficult for the agency to fulfil its role as facilitator, as its primary concern is to ensure the fulfilment of biodiversity conservation obligations. Furthermore, questions have to be asked regarding the conservation agency's independence from the state. If a partnership is to be truly democratic, it is necessary that the voice of local people is not only heard but listened to and acted upon (Kapoor 2001; Leach et al. 1999; Scott 1998). This is only possible if the conservation agency is prepared to act independently and not simply to fulfil strategic biodiversity conservation obligations. However, the statutory nature of the partnership, driven by these obligations, makes this difficult. The externally derived strategic biodiversity conservation obligations imposed on the partnership means that the relevant authorities arguably cannot leave EMS management to self-governance by self-organised local actors (Jones and Burgess 2005). This brings into question whether EMS management regimes really fit into the criteria that Ostrom (1990) laid down for the management of CPRs, as Steins and Edwards (1999) argue that negotiations amongst actors on CPR platforms are obstructed if strategic narratives, such as those aimed at fulfilling conservation obligations, are adopted. It is impossible to come to any firm conclusions on this issue from one case study, but it clearly represents a tension where CPR governance must provide for such obligations to be fulfilled, as is common with both terrestrial and marine protected areas.

What were the fundamental causes of the fracturing of the EMS partnership?

Prior to the current disagreement, the Wash and North Norfolk SAC partnership was functioning relatively well, many of the criteria for successful co-management were in place, and a significant level of social capital had been developed (Jones 2001; Gardner 2005). However, the evidence submitted by both sides at the inquiry shows that previous trust and respect between English Nature and the mussel cultivators has been eroded. The mussel cultivators were angry at the lack of credibility attributed to their local knowledge and experience by English Nature, accusing them of making rash judgments based on only a few site visits and making up the data regarding the number of eider on the Wash. On its side, English Nature felt let down by the mussel cultivators' failure to follow voluntary agreements on the testing of the wailers. The relationships between individuals had also broken down on a personal level, and during the inquiry representatives from English Nature did not feel comfortable going into local public houses owned by fishing families. Furthermore, it is clear from press releases by groups representing the mussel cultivators that the failure of the appeal has created considerable animosity between the two sides.

Although it appears the eider issue was the catalyst in causing the fracturing of the partnership, it is also important to look at the bigger picture and to try and establish the

underlying causes of the problems. There is a strong case to suggest that the governance model in operation has itself contributed to the troubles. The concept of a 'statutory partnership' is in many ways contradictory; on the one hand the local resource users are being encouraged to work together with the relevant authorities to manage resources in a sustainable manner, while on the other hand, the state still retains ultimate control as it must ensure strategic obligations are fulfilled. Put another way, it would be somewhat naive to give resource users the power to manage their own resources and then expect them to always tow the government line. It is also possible that there are other hidden problems which have impacted upon the relationship between English Nature and the mussel cultivators, which this research has failed to reveal. Future research is being planned to further examine the degree, extent and causes of the fracturing of the partnership and to explore the wider implications of the breakdown of trust.

What impact is this likely to have on the Wash and North Norfolk Coast SAC partnership and its ability to manage resources?

The result of this breakdown has been the erosion of one of the most important components of co-management: social capital. Consequently, the EMS partnership participants, particularly English Nature, are left with the difficult task of regenerating social capital to strengthen the partnership and facilitate the future management of the Wash. It is clear that relationships have become fractured at both personal and professional levels. It is possible that English Nature staff will move on and new people will be brought in. However, the mussel farming industry is dominated by a small number of families who have lived and worked on the Wash for many decades, amongst whom there are high levels of bonding social capital (Rydin and Holman 2004), and these people are far less likely to move on. Furthermore, even if the personnel at English Nature changes, the suspicions associated with the organisation are unlikely to fade without significant evidence that they are willing to co-operate with the local community. This may well be difficult as English Nature continues to have a statutory responsibility to ensure that the conservation obligations for the site are fulfilled, and these are likely to conflict with the mussel cultivators' business objectives. As a result, it is quite possible that the Government will be called upon again to make judgements over future disagreements, further alienating the resource users.

It appears, in this case, that social capital may have become more of a hindrance than a useful partnership building tool. When the concept first emerged in the late 1980s it was embraced with a great deal of excitement and championed as a potential solution to a wide range of social and management problems. However, more recently a number of commentators have begun to question its usefulness. From the institutional rational choice perspective, adopted by Pennington and Rydin (2000), it is clear that the potential of social capital to manage environmental resources is highly dependent on the nature of the resource and the structure of incentives facing actors. Porter (2006) is critical of the manner in which social capital is hailed as a solution to a wide variety of social problems. She is sceptical of the value of the concept and emphasises the importance of assessing the context of the problem before attempting to solve it through the development of social capital. The key point to come out of this research is that social capital will only work in certain contexts. Evidence from this case study suggests that a statutory partnership which incorporates a large number of resource users with conflicting interests may not be the best context in which to employ social capital as a partnership building tool as it is likely to create tensions between different actors and frustration when consensus cannot be achieved.

Pretty (2003) points out it is unlikely that the development of social capital will allow a community to manage its resources independently without any long-term assistance from statutory bodies. However, it is equally clear that too much interference from statutory bodies may in fact render a partnership obsolete, as instead of facilitating 'bottom up management' it becomes a tool for 'top down management'. The key to success may well lie in the state finding the correct balance between providing partnerships with assistance and allowing them to get on with managing their resources, although, as the Wash case study demonstrates, this is problematic if the partnership is required to fulfil strategic obligations.

Conclusions

This paper has analysed the fracturing of a partnership in terms of CPR theory. The Inquiry provides a useful framework for considering the wider implications of using the partnership approach as a tool for managing resources when they are ultimately governed to fulfil externally derived obligations. It questions the logic of enabling local communities to self-govern their resource within the constraints of rigid European legislation, and asks whether developing a high level of social capital as a tool to build partnerships under these circumstances is desirable or even possible.

There have been significant changes in the ways in which environmental resources are governed in the last two decades. For many years, governance schemes were based on Hardin's models, which represented a rational choice between top-down control, privatisation or 'tragedy' through open access. However, over the last fifteen years such models have been subject to significant criticism, resulting in an increased interest in participatory methods. There was much excitement surrounding the use of partnerships and the development of social capital as tool of governance during the 1990s and early 2000s, and as a result they were adopted by many governments around the world as governance tools. However, government-initiated partnerships are in many ways contradictory. A fundamental principle of the partnership model of governance is that it is a bottom-up approach, initiated and controlled by the community. The process aims to help the community to develop a sense of ownership over the resource and therefore encourage them to manage it sustainably. If a partnership is initiated by government there is a danger that the community will not develop a sense of ownership which may encourage free-riding and related management crises.

The Inquiry has led to a number of important warning signs in this respect - there has been a breakdown of communication between key partners; the autonomy and authority of the partnership has been undermined by the intervention of the government; and there is currently no obvious way of taking the partnership forward. Unless these issues are addressed in the near future, there is a real danger that the partnership may collapse completely. It is highly debatable whether the management of the Wash estuary reverting to state control will be considered to be a cause or symptom of this collapse. However, this case illustrates the critical challenge of achieving a balance between local resource use and strategic conservation objectives, and supports the observation that "if this balance cannot be achieved, the potential of co-management to achieve strategic conservation objectives may be critically undermined" (Jones and Burgess 2005). This issue has the potential to seriously call in to question the validity of the new co-management paradigm, where protected areas are managed through partnerships between the state and local people, in order to deliver strategic conservation obligations. Such partnerships must be strong enough to resist fracturing through the tensions between local resource use and strategic conservation objectives. Further research will be conducted in relation to this case to see if the partnership was resilient enough to withstand

these fracturing forces, and it is argued that this may well emerge as a critical issue in many cases of protected area co-management

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