CHAPTER 1

The Coastal Zone Environment: A Place to Work, Rest, Play and to Manage

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ABSTRACT: Over time growing environmental awareness has made us regard coastal landscapes as nationally and internationally important areas of scenic quality and natural habitat. Unfortunately the relatively recent desire to defend and to protect these particular aspects of the coastal environment does not necessarily fit in with the need to maintain the human aspect of the environment, e.g. our industrial, economic, and leisure activities. Maintaining a coastal environment to suit all the possible user requirements and interests and is difficult to achieve. It is vital to strike a balance between the natural and the man-made activities that operate within a coastal environment in order to sustain them for the benefit of everyone. Unfortunately, to date, an integrated approach to coastal management has not really been undertaken. The result of this has been that more often than not the continued use of a coastal environment has resulted in conflict, the consequences of which have been damaging to other users and aspects. The main problem with coastal management in the past is that it has been very reactionary. There has been little in the way of a planned response, and new ideas have only come about with hindsight. Now is the time to take stock of the situation and to clarify positions.

Introduction

Coasts by their very nature have historically always offered a place for humans to settle, to work, and to play. In order to maintain our coastal settlements, our investments and our pleasure (i.e. our way of life) has necessitated the implementation of various forms of coastal defence and protection from the sea and with it a recognition of the need to maintain an element of environmental constancy and stability for us to survive.

Over time growing environmental awareness, however, has made us regard coastal landscapes as nationally and internationally important areas of scenic quality and natural habitat, amongst many other things. Unfortunately the relatively recent

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desire to defend and to protect these particular aspects of the coastal environment does not necessarily fit in with the need to maintain the human aspect of the environment, e.g. our industrial, economic, and leisure activities. For example, local property owners may wish to see their land and buildings protected against flooding and erosion. At the same time, however, the conservation of natural features and habitats may depend upon the continued operation of natural coastal processes, which themselves can be affected by defence structures. This has currently made the issue of coastal defence and protection a very contentious one (Lee, 1993). Maintaining a coastal environment to suit all the possible user requirements and interests is difficult and in reality is achieved only by compromise. And yet it is vital to strike a balance between the natural and the man-made activities that operate within a coastal environment in order to sustain them for the benefit of everyone. They complement one another. However, to date, an integrated approach to coastal management has not really been undertaken. The result of this has been that more often than not the continued use of a coastal environment has resulted in conflict, the consequences of which have been damaging to other users and aspects.

The Need for Better Coastal Management

It has been argued by Carter (1988) for example that "***accelerated erosion, disappearing beaches, increased frequency of flooding, progressive siltation, degraded ecosystems and so on***" (p. 431) are all symptomatic of the inability of people to provide competent coastal land management, defence and protection. If this is so, the dilemma faced by coastal zone managers is how to provide areas which are, for example, susceptible to flooding with ***"technically, environmentally and economically sound and sustainable defence [and protection] measures"*** (MAFF, 1993, p. 3) in the future, while trying to maintain those of the past, and to deal with the problems they may have caused.

The problem currently faced is one of being able to maintain the coastal environment in such a way that it supports both the interests of the natural and the man-made environment, so that both can co-exist in such a way that our economic, social and industrial livelihood can be maintained but set within a natural environmental context. Sustainability is the key word here. In essence management of the coastal environment is about sustaining the natural environment.

It is now recognised that past practices at the coast, such as the construction of harbours, jetties and traditional defence systems may have contributed to the deterioration of the coast. English Nature (1992), for example, have argued that if practices and methods of coastal defence are allowed to continue, then coastlines would be faced with worsening consequences, including:

- **The loss of mudflats and the birds which live on them;**
- **Damage to geological Sites of Special Scientific Interest (SSSIs) and scenic heritage by erosion, due to the stabilisation of the coast elsewhere;**
- **Cutting of sediment supplies to beaches resulting in the loss of coastal wildlife;**
- **Cessation through isolation from coastal processes, of the natural operation of spits, with serious deterioration of rare plants, animals and geomorphological and scenic qualities. (English Nature, 1992)**

Managing the Coastal Landscape in the UK

Coastal landscapes are a result of the natural forces of wind, waves and tides, and many are nationally or internationally important for their habitats and natural features. Whilst there are many different forms of coastal management, which are well documented in the literature, and many of which have been implemented over the years, there is a growing realisation that we do not fully comprehend the coastal processes involved and the consequences of our actions on the coastal environment, either with regard to the natural or the man-made aspects, the results of which are only seen in the effects and changes that we now see taking place.

Coastal zone management has become, in recent years, a very prominent issue in the UK for example. This is demonstrated by the current literature available, including the Department of the Environment (DoE) review of coastal management and planning (1993), Ministry of Agriculture, Fisheries and Foods publications to guide Local Authorities in shoreline defence, conservation and management (1993, 1995, 1996), and a study by Healy and Doody (1995) on coastal management in Europe, many of whose examples come from the UK.

The need to deal with the actual and potential changes in the coast has been recognised and many different approaches have been tried. For example, a number of designations, provided by national and international legislation do exist to aid conservation. One of the most important in Britain is the SSSI "widely considered to be the cornerstone of conservation in Great Britain" (DoE, 1993, p. 71). However, coastal conservation is contentious and problematic and is a much broader issue common to nearly all coasts, particularly those that are mainly undeveloped. The problem the coastal manager faces here is how to balance the needs of the local community and the wishes of conservation groups, within the current legislation.

Defence, protection, and conservation are all-important issues in their own right. However, they are in themselves not necessarily management. An integrated approach to coastal zone management would bring these three issues together, for example, in an attempt to use the coast wisely, provide sustainable development and maintain biodiversity. Yet, in Britain at least, this is still only a political ideal to which there is, at the moment, no perfect solution.

It is generally accepted within the literature that coasts around the UK are physically unique and distinct, and have their own problems and conflicts. An important part of coastal management is the interpretation of national policy at local level.

Although coastal management needs to evolve further, there have, within recent years, been "remarkable changes in attitudes and practices of management of the shoreline" (Hooke and Bray, 1995, p. 336). Perhaps the most significant of these changes is the realisation that management can be based on the concept of the sediment cell. Indeed, MAFF sees this concept as the linchpin of modern integrated coastal zone management because it offers the opportunity for administrative structures to be much more closely related to natural forms and process units along the coast.

The major advances made with sediment cells are the setting up of voluntary coastal defence groups, and encouraging Coastal Protection Authorities (CPAs) to initiate Shoreline Management Plans (SMPs). The coastal defence groups have been

able to provide a much needed regional contact for co-ordinating and exchanging information, so that the works of one CPA at the coast will not adversely affect the coast of an adjacent CPA. Likewise, SMPs have given Voluntary Management Groups the opportunity to develop sustainable coastal defence and conservation policies within a sediment cell, and to set objectives for the future management of the coast (MAFF, 1995).

The main focus of an SMP is on coastal defence and protection. It is recognised today that new defence and protection techniques must take account of natural processes, particularly sediment movement, which take place at the coast. The most successful of these techniques is arguably beach nourishment or recharge. Beach recharge appears to cause little disruption to natural processes, and evidence from the Netherlands, where nourishment schemes are actively used, suggest that the environment suffers few adverse effects.

As a nation, our awareness of conservation issues appears to have grown over the past fifty years. This view is justified by the numerous site designations that have been made to protect the environment, and the inclusion of the natural environment as an important consideration within SMPs. The growth of interest in these issues at the coast has caused controversy within coastal management, especially where conservation priorities have clashed with the needs and wishes of business and local residents at the coast. In many respects, such conflicts belie any advances in coastal zone management, as in essence, they are a consequence of poor planning, co-ordination, and hazard management, which have heightened the problems of flooding, erosion and threats to the built and natural environment. However, SMPs should provide a forum for all interests at the coast to arrive at an agreeable solution for all and it is important to recognise that it will be beneficial for conservation agencies, businesses and local residents, to discuss their concerns. At the same time, new defence and protection measures will be developed with respect to conservation priorities so that future conflicts may be avoided. In this way, coastal management is becoming properly integrated.

Some Problems with the SMP

There are, however, problems with basing coastal management solely on sediment cells. Hooke and Bray (1995) debate their usefulness, arguing that the cells are difficult to identify, and the concept hard to apply. This is especially true for finer sediment, as no one can be sure of its exact movements. Lee (1993) also argues that sediment cells will not be relevant to all aspects of coastal management, particularly where landward geomorphological systems are concerned. The ability of plans based entirely on sediment cells to integrate management strategies, may, therefore, be questioned; any framework not bringing all issues together is not totally integrating them.

Another dilemma faced by the SMP initiative is that it is non-statutory, although Jemmett (1995) argues that there are some advantages to this system. He suggests that it "places the responsibility for addressing individual issues on those affected by them and it fosters greater awareness and ownership" (Jemmett, 1995, p449). In other words, the plans, while based on national policy, can become very site specific, geared towards particular needs. However, he also acknowledges that some

conflicts will only be resolved by statutory control (Jemmett, 1995). Also, being non-statutory, Local Authorities and consulting agencies do not have to initiate them, and even if they do, they remain little more than advisory measures that can only be enforced if made law within planning documents. Coastal management still relies heavily on the planning system that is less than adequate to deal with all its intricacies.

There is still a lot of room for improvement before it can be said that Britain has a framework for the wise use of the coast, its sustainable development, and maintenance of its biodiversity. The formation of voluntary coastal groups and non-statutory management plans are certainly a start, yet it has been seen how, based only on sediment cells, these may not account for all coastal issues. The other problem is that SMPs are not the only type of management plan, in force, at the coast. There are also estuary, heritage coast, and AONB management plans, which may all overlap. For example, an SMP for cell number 11 will cover the same area as the Solway Firth AONB management plan. Thus, two different methods of management and planning will be applied to the same area. Ultimately, this gives the impression that coastal management still lacks a co-ordinating body with responsibility for all issues.

A Different Approach

The magnitude of the problems associated with coastal management embrace a wide variety of impacts on different temporal and spatial scales (Carter, 1990). To develop studies further, issues such as pollution, recreation and education would also need to be included. Coastal zone management (CZM), could be more holistic, providing a deeper understanding and appreciation of all coastal issues.

Lee (1993) concludes that effective management in the future should be able to resolve conflicts between alternative demands on resources, and ensure that human activity does not significantly affect coastal systems or ecosystems. Carter, (1990) argues that the best way of achieving this will be through a framework which provides consistency and ease of communications. He suggests imposing a new structure, lying across existing areas of responsibility, hence, providing a lead group through which all existing interest groups can be co-ordinated. This is, perhaps, the best way of bridging the gap originally created by the division of coastal defence and protection.

On the other hand, it is hard to see how one body could possibly control the shear volume of work, and conflicts, arising from the many interests at the coast. The main problem with coastal management in the past is that it has been very reactionary. There has been little in the way of planned response, and new ideas have only come about with hindsight. This is partly why there are so many voluntary groups, management plans and conservation designations in operation. Perhaps now is the time to take stock of the situation and clarify positions. It may be that there is now a need for Coastal Authorities based on the boundaries of sediment cells, with statutory powers to govern the coast, but in close liaison with existing Local Authorities and their planners. In addition, new Acts of Parliament should bring coastal legislation up to date, especially that concerning protection and defence; and conservation legislation could be condensed to reduce confusion. Integration between fewer groups would seem to be a far easier prospect.

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