

**TOWARDS AN INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF
COASTAL ENVIRONMENTS**

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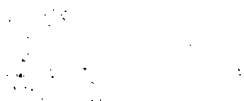
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ABSTRACT

The prospects for world population growth are presented. The importance of the world's coastal zone as a provider of the multitude of varying human needs is stressed. The global implications of a substantially larger population continuing to consume the resources of the coastal zone at today's rate are then considered. The requirement to maintain biological diversity and to plan for the needs of future generations is recognised. Coastal management in its widest sense is necessary on a global scale as a mechanism to balance conflicting uses and ensure an equitable allocation of scarce resources.

Within this wider context, the circumstances surrounding the planning and management of the coastal zone in the United Kingdom are considered. The procedures for planning the coastline, as presently undertaken by Local Planning Authorities throughout the country, cannot be viewed in isolation. They are linked to the administration and management of the many activities and uses of the coastal zone. The nature of these systems is analysed and the unique physical characteristics of the coastal zone considered. The extent and implications of the demands on coastal resources from a number of competing activities are then outlined.

Evidence from organisations with an interest in the coastal zone indicates that the lack of coordination and guidance in the existing system, if not remedied, will lead to further unacceptable losses to valuable habitat and wildlife. The concept of integrated Coastal Zone Management has been advocated as a potential means to balance demands for coastal zone resources, to promote their sustainable use and to resolve conflicts through arrangements based on natural coastal processes rather than administrative boundaries. Following examination of situations in which Coastal Zone Management, in a variety of forms, has been implemented, the benefits of such an approach for the United Kingdom are considered.



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CHAPTER ONE : . INTRODUCTION & OVERVIEW

1.1 THE GLOBAL CONTEXT

"The average European leaves, at the end of a lifetime, a monument of waste almost 1000 times their bodyweight. The average North American's waste mausoleum is 3900 times their bodyweight."

"A survey of sea-floor sediment off the coast of the United Kingdom found an average of 2000 pieces of plastic debris per square metre."

"Over their lifetime each person in Western Countries emits a balloon of carbon dioxide in which the carbon alone is 3500 times their bodyweight."

"Over the 1973-87 period, hailed for its growing 'energy efficiency', world energy use grew by 20 per cent. Gains in car fuel efficiency between 1973 and 1988 were wiped out twice over by the rise in car numbers."

"By the year 2100 the world population is expected to number 11.5 billion - an extra world, plus another China on top of today's."

"A world of 11.5 billion people would need roughly an extra 12.6 million square kilometres of land for farms, towns and roads. This amounts to almost a third of today's world forest area - and double the world's protected natural areas."

"The ocean is our garden pond: the annual fish catch already exceeds the sustainable yield of the world's seas."

"In the first five decades of the twentieth century, one bird or mammal species was becoming extinct every 1.1 years - 230 times faster than the pre-human rate. One mammal species in every fifty has become extinct in the past 400 years."

"Every year an area of tropical forest the size of two-thirds of the United Kingdom is cleared. Every ten weeks a Netherlands. Every day a Barbados."

[Taken from Harrison, 1992]

1.1.1. The quotations on the preceding page provide a gloomy picture. The world's population continues to escalate at an astounding rate. The demands of this growing population result in the increasing consumption of non-renewable resources and the consequent destruction of the planet. The serious implications of this mismatch between demand and supply have become more apparent and, over the last few decades, the focus of attention has increasingly been directed towards the problems occurring in the area of the world's surface which forms the interface between land and sea, the coastal zone. As we shall see, a number of factors have combined in recent years to focus attention in many countries throughout the world on the particular issues and conflicts arising in this locality.

1.1.2. On a global scale, an examination of human history shows how growth rates have risen. Thousands of years ago the growth of the species was curtailed by natural phenomenon such as disease, injury, predators, warfare and the availability of food. It is possible to divide world population growth into five distinct phases (Harrison,1992). The first two of these were characterised by additions of 63,000 and 677,000 people per year respectively. The third phase spans the years 1700 to 1950 where, spurred on by the Industrial Revolution, this figure rose to annual additions of 7,624,000 people. The fourth phase experienced growth of an hitherto unprecedented level, due to a combination of two factors in particular. The first was the gradual introduction of modern preventive and curative medicine, including immunisation, improved water, sanitation and antibiotics. The second was the agricultural revolution brought about by the development and use of chemical fertilisers, irrigation and improved seeds. During this phase, in the 1960's, the annual growth rate reached its highest level ever of 2.05 per cent. An average year during this period resulted in an extra 64 million people to feed. The third billion in total came about in 1960, thirty years after the second, whilst the fourth took only fourteen more years.

1.1.3. 1980 marked the beginning of the fifth phase. The growth rate had slowed slightly to 1.74 per cent per year but, since the starting figure was higher, so were the numbers added each year. Consequently the fifth billion took just thirteen years and was passed in 1987. It appears that the trend is destined to continue. The United Nations expects that 969 million people will

have been added to the total by the end of this decade which is the equivalent of the population of the whole world around 1810 (U.N. Dept of Economic and Social Affairs, 1990). If these figures are correct, the growth of population expected in the 1990's will result in "two whole Europe's, East and West, added in just ten years. An extra United States every two and a half years. Two United Kingdoms every fourteen months. A Sweden or two New Zealands every month. A Birmingham every four days. Every twenty-four hours a town the size of Walsall or Wolverhampton. A school class of thirty every ten seconds" (Harrison, 1992).

1.1.4. Such figures give a frightening picture of the future. Their relevance to this study is to provide an indication of the resource implications involved. It is clear that a world population of 10 to 16 billion cannot continue to use up resources at current Western levels. Therefore, something must change. At some time the scarcity of minerals could begin to limit population or economic growth, or both, and the world could face a resource crisis. We have experienced such shortages before and this, in reality, leads to adaptations, substitutions and, in some cases, reductions in consumption (World Resources Institute, 1990). However it is likely that, long before lack of resources becomes the restricting factor, the problems of pollution and destruction created by the current population will have to be dealt with. In such a situation it is therefore vital that sustainable methods of land use and production are promoted and that every effort is employed to protect the remaining areas at risk from permanent destruction. The world's coastal zone has increasingly been identified in recent years as one such area.

1.2 THE WORLD'S COASTAL ZONE

1.2.1. The coastal zone is a region of intense physical, geological and geochemical activity and, as a region, exhibits one of the highest levels of biological diversity and productivity. It is heavily used by man for residential, agricultural, commercial, transportation, waste disposal, recreational and military purposes, as well as for fishing, mariculture and the extraction of energy and mineral resources. More than 50 per cent of the world's human population lives on coastal plains and another quarter within 60 kilometres of the sea (Ray, 1989). With this proportion increasing, it is also the focus for much of the global investment into agriculture and

industrial development (Holligan and Reiners, 1991). It therefore follows that much of the pollution and destruction caused by human activity is taking place in this zone and conversely that pollution in these areas therefore has an impact on a large number of people.

1.2.2. The inter-tidal area of the coastal zone is an immensely important link in the world's ecosystem, where a large proportion of food production takes place. The tidal areas such as coastal mangrove forests, seagrass beds and coral reefs are as productive as rainforests and far more productive than the open ocean since they provide the spawning grounds for the majority of fish to reproduce (Linden, 1990). Coastal wetlands also provide an important buffer, reducing the effects of floods and cyclones on the land and protecting the sea from the pollution generated on land. It is estimated that since 1900 the world may have lost half its wetlands due to drainage for agriculture, clearance for forestry, urban and tourist development. Asia is thought to have lost up to 60 per cent of its original wetland, Africa nearly 30 per cent (Malby, 1990, Mackinnon, 1986).

1.2.3. Malaysia is estimated to have lost half its coastal mangrove forest in the last twenty years and, in all, Asia is thought to have lost 58 per cent of its mangroves (Mackinnon, 1986). The figure for Africa is 55 per cent, much of which has been destroyed by up-stream irrigation, allowing salt sea-water to go inland. Similarly coral reefs, which protect 15 per cent of the world's coastline, are systematically being destroyed by destructive forms of fishing, by coral collection and pollution from agriculture, industry and sewage. As an extreme example, reefs in the South China Sea are reported to have lost 95 per cent of their live coral (Linden, 1990, UNEP, 1990a). These coral reefs are second only to tropical rainforests in terms of biological diversity and are under even greater threat. Their destruction has severe consequences not only for other species, due to their place in the natural ecosystem, but more practically in terms of their contribution to feeding the growing population of the world. Thus, fishermen in Indonesia who depend on the coral reef communities supply up to 90 per cent of fish production and in the Philippines the equivalent figure is 55 per cent (World Resources Institute, 1990).

1.2.4. These are just some of the many examples of man's destructive impact on the world's coastal zone. This destruction is one facet of a wider global crisis which affects every level of the global environment, from forests, rivers and oceans to the atmosphere and climate. The effects of pollution and wasteful use of resources will inevitably come full circle, through the other species and systems we damage, back to us.

1.2.5. In disposing of this waste, the oceans have taken on the role of a large, seemingly indestructible, dustbin to which everyone has access, yet over which no-one has complete ownership or control. On land, where these systems of ownership and control do exist, the sources of pollution can often be identified and political pressure brought to bear on those responsible. However, the absence of boundaries where the rivers, oceans and atmosphere are concerned means that they are consequently much harder to govern and police. Their nature is such that the effects of a polluting substance in one location may be felt in another town, country or even continent and the polluted may have no political influence over those responsible.

1.2.6. It is only since the 1960's, with the population of the world increasing as never before, that we have begun to be aware of man's impact on the atmosphere. The first evidence appeared in the discoloration and shedding of needles and leaves of trees in the Black Forest in Germany (Harrison, 1992). By the late 1970's a third of the forest's firs were dead and other species were beginning to exhibit the same symptoms. The major cause of this destruction was acid rain from the gases emitted by burning fossil fuels. Sulphuric and nitric acid in the rainfall were destroying vegetation and many forms of wildlife. The effects are now increasingly being felt in the developing countries since acid rain is not only a product of industrialisation, but is also caused by the rapid burning of forests and grasslands.

1.2.7. The appearance of a hole in the thin ozone layer in the stratosphere came as the next warning of man's impact on the environment. In 1982, British scientist Dr Joe Farman first discovered the ozone hole over the Antarctic. Four years later the hole covered 14 million

square kilometres and surveys in 1991 showed that ozone levels over Europe were 8 per cent down on a decade earlier (UNEP, 1990b).

1.2.8. The breaking of various climatic records and events such as the severe gales experienced in Britain in the 1980's provided evidence of the third symptom of man's impact on the environment - global warming. Man's activities are altering the chemical make-up of the atmosphere, causing an unnatural stoking of the natural greenhouse effect. By projecting current trends, the International Panel on Climate Change predicts that global average temperatures could rise by an average of 0.3 C each decade over the next century. By 2025 they could be 1 C warmer than now. By the year 2100 they could have risen by 3 C. This means that half-way through the twenty-first century temperatures will be higher than at any time in the last 150,000 years. This speed of increase is unprecedented - fifteen to forty times faster than at the end of the last glaciation (Houghton, 1990, IPCC, 1990). The full extent of these changes on the planet is unknown. Scientists, however predict that in every continent there will be evidence of climate change and that sea level will rise, necessitating adaptation in crop-growing and placing new pressures on coastal zones. Wetland habitats will be squeezed between rising seas on one side and farming and urban areas on the other and any coastal defences which are built will alter wetland ecology. Some coral reefs will also suffer as they become submerged at depths to which they are unaccustomed and will eventually die (Commonwealth Secretariat, 1989).

1.2.9. The increasingly visible effects of human behaviour have prompted growing concern in many countries throughout the world. The pollution problem is just one aspect of man's impact on the planet. Population growth, consumption growth and technology change work together to increase the human impact. There are many activities which have this 'knock-on' effect, whereby action taken in one locality affects both other people, wildlife and natural habitats. The effects of global warming, potentially the biggest impact of all, are not however yet visible, only predicted. History has shown that it is rare for effective environmental controls to be imposed before the consequences of actions are plainly visible. Furthermore, costs and damages tend to be higher if action is taken only when it is forced. The evidence already available should tell

us that action is required now in order to reverse, or at least stall, the destruction of biological diversity and natural, irreplaceable habitats.

1.2.10. Many of the causes of these effects on the environment are outside the scope of this study. There are various organisations already in operation which currently concern themselves, at the global level, with activities taking place on land and at sea. These have resulted in the formation of a number of agreements (Table 1.). The need to control development and activities on land and particularly at sea, to minimise conflicting uses is increasingly being recognised as is the requirement to address the problems on a global scale, if any real progress is to be made.

TABLE 1. EXAMPLES OF INTERNATIONAL AGREEMENTS

- * The United Nations Convention on the Law of the Sea 1982 - (UNCLOS) III
- * London Convention on the Prevention of Marine Pollution by Wastes and other matter 1972
- * Oslo Convention for the Prevention of Marine Pollution by Dumping from Ship and Aircraft 1972
- * Paris Convention for the Prevention of Marine Pollution from Land-based Sources 1974
- * North Sea Ministerial Conference Declarations

1.2.11. This background puts the issue of coastal management, the purpose of this study, into its widest context. It has been established that, if population projections prove correct, the world will have a very different composition in 2150 as 98 per cent of population growth will be concentrated in the developing countries. This means that for every person in the Northern countries there will be sixty in the South and in the twenty-second century Southerners will outnumber Northerners by nine to one (Motor Vehicle Manufacturers Association, 1990). It is vital therefore that coordinated action is taken in the developed world to protect the coastal zone from further destruction and that knowledge and expertise is passed on to prevent the

problems from simply being transferred to another area of the world. The European Community as a collection of individual countries, as well as its constituent member states, has a responsibility to work towards such aims and to put into place the necessary frameworks to enable and ensure cooperation between the conflicting activities and uses taking place in the coastal zone.

1.2.12. The past decade has seen a raising of the level of awareness of environmental issues. In the next decade action will need to be taken. This will necessarily require political commitment and the allocation of funds and manpower, so improving our understanding of natural processes. This will enable us to effectively monitor changes in the environment so as to shorten delays in perceiving and acting on environmental problems. The report of the Brundtland Commission (World Commission on Environment and Development, 1987) first advanced the idea of sustainable development as an essential element of future strategy. The phrase "sustainable use" is defined by the Biological Diversity Convention which was agreed at the World Summit in Rio in 1992 as: "...the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations". The recent recognition of the importance of sea use management and the move towards the concept of integrated coastal zone management have an important part to play in this process of reaching a sustainable balance with the natural environment.

1.3 THE COASTLINE OF THE UNITED KINGDOM

1.3.1. The United Kingdom has also experienced the effects of increasing pressure on resources brought about by an, albeit slowly, growing population with all its associated demands for a better standard of living. The United Kingdom's coastline is approximately 15,000km in length and is much larger in relation to its land area than that of many other European countries. Furthermore, nowhere in the United Kingdom is more than 135kms from the sea (House of Commons, 1992). A large proportion of the population therefore either live close to the sea or are affected in some way by the activities taking place in the coastal zone. Coastal issues are

consequently of particular significance to many people. In this country, a number of factors have combined to bring coastal issues to the forefront of political debate in recent years.

1.3.2. The United Kingdom has a unique coastline which varies in character from cliffs, estuarine marshes and mudflats to coastal lowlands, enclosed harbours and sand dune systems. This coastline is one of the most diverse in Europe and its variety of landscapes form distinctive features in different parts of the country. The complex of coastal and inshore marine habitats form part of an interdependent international network of sites supporting important fauna populations, especially waterfowl and seabirds. The estuaries of the United Kingdom make an outstanding contribution to this network (House of Commons, 1992, Rothwell & Housden, 1990, English Nature, 1993). Many of these habitats also provide a home for internationally important plant species.

1.3.3. The coastline is dynamic and has been shaped both by powerful natural forces and, to a large extent, by a variety of forms of development and activities which have taken place along its length. Much of the English coast comprises low-lying land having a gently sloping inter-tidal zone. Such areas are net receivers of sediment from various sources (Carter, 1988), both offshore and from neighbouring coasts. Many of the sand and shingle bars, dune systems and saltmarshes which develop in such areas provide a high degree of coast protection. If such features are starved of their sediment supply they will gradually erode and their nature conservation and coast protection value will diminish. Wild plant and animal communities have accommodated these changes over thousands of years. However, the retention of present coastal defences, coupled with an anticipated rise in sea level, will bring high and low water marks closer together (Bray et al., 1992), so destroying huge areas of habitat (Williams, 1990).

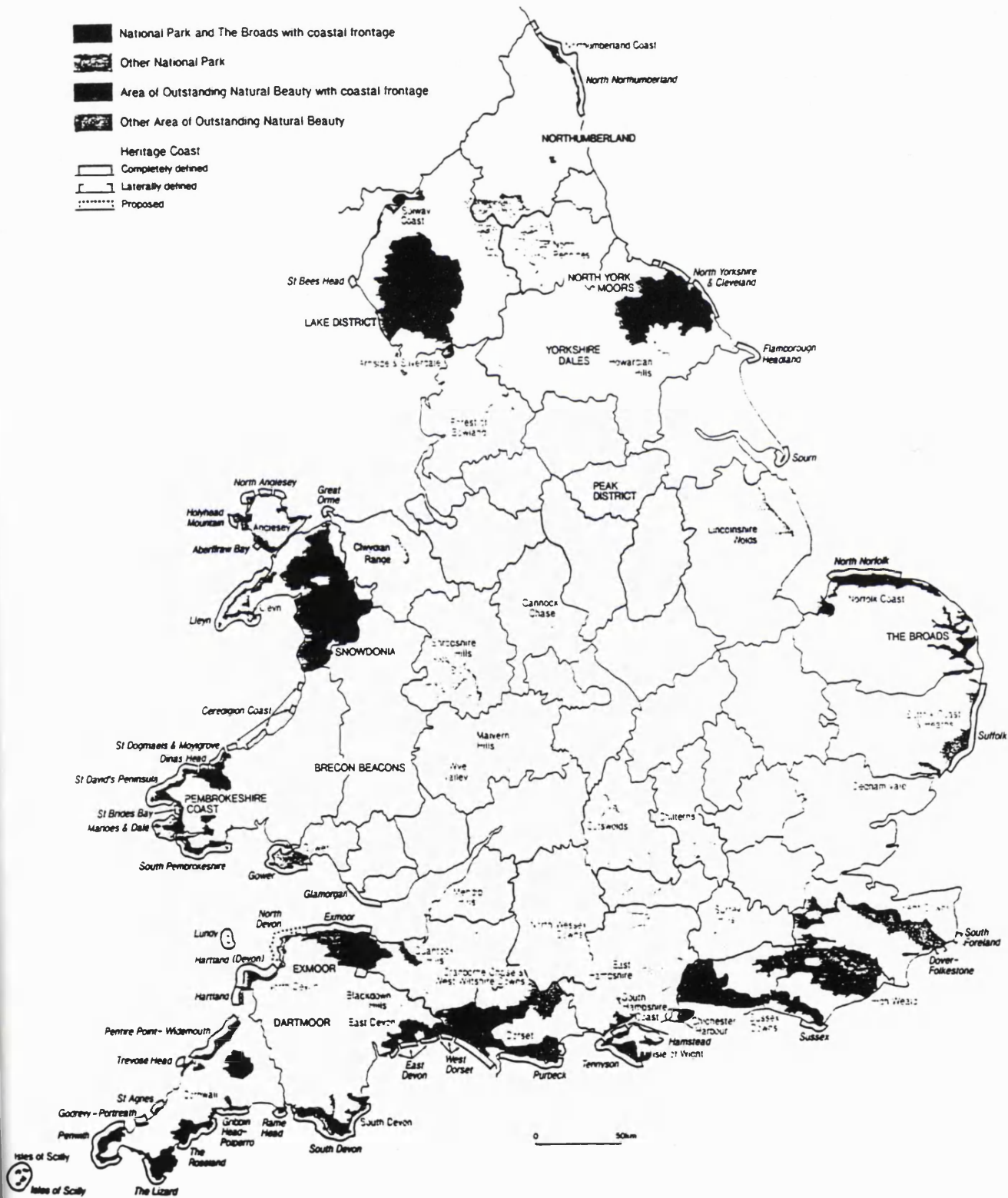
1.3.4. The coastline has great value in a number of ways in addition to the wealth of wildlife and natural habitat which it sustains. The resources provided by the coastal zone are of tremendous importance to the nation's economy (DoE, 1992b). Many types of industry and business activities ideally require a coastal location. Historically, the coast has also been an attractive place to live, to work and to visit. The south and south-east in particular, with its milder temperatures, comparatively more prosperous economic climate and easy access to the

continent, continues to attract both visitors and new inhabitants, particularly the elderly wishing to retire to a seaside location. Furthermore, the structure of the labour market is constantly changing leaving increasing numbers of old and young alike with more time to enjoy leisure pursuits. A large variety of these recreational and sporting activities utilise the resources offered by the coastal zone.

1.3.5. Approximately 30 per cent of the coastline of England and Wales is developed (DoE, 1992b) with much of this development taking place prior to the introduction of planning controls under the Town and Country Planning Act 1947. The introduction of these controls has allowed significant lengths of the coastline to be specifically designated for its high landscape value or nature conservation or scientific interest. The application of special policies to the nearly 2,000 kilometres of the coastline which fall under such designations is intended to preserve the remaining unspoilt areas (Figure 1.)

1.3.6. However, despite the variety of controls it is apparent that the natural characteristics of the coastline and the wildlife it harbours continue to be destroyed as a result of increasing pressure from development and from a variety of conflicting uses. For example, in 1991, the Nature Conservancy Council published a report concerned with the nature conservation aspects of estuaries in Great Britain (Nature Conservancy Council, 1991b). This report was based on the Council's "Estuaries Review", established in 1988, in response to widespread concern about the threats to British estuarine ecosystems. The review found that despite being of great national and international wildlife conservation importance, "...the existing conservation safeguards are not effective at maintaining and enhancing the wildlife resource as required under international conservation commitments" (Davidson, 1991). This is one of many examples cited by specialist organisations of the inadequacy of current arrangements. It is becoming apparent that the resolution of these conflicts requires a wider approach than that which has so far been possible under the land-use planning system.

FIGURE 1



1.3.7. The wider implications of climate change, global warming and sea-level rise, as described above, are of concern, particularly the implications for the south and south-east parts of the country which are most likely to be affected. In recent years we have also seen an increase in awareness of environmental issues on the part of individuals and communities and this is reflected in a growing number of organisations and their increasing membership. It is clear that a shift in values has begun as people become more aware of the impact of waste and realise the need to cooperate with nature rather than to oppose it. This sense of duty towards future generations recognises the need to preserve other species and the ecosystems of which they are a part and forms the basis of the report by the Brundtland Commission (World Commission on Environment and Development, 1987).

1.3.8. The planning system has had to adapt to such outside influences and, as a result of changes in legislation, is required to take into account the views of many organisations when considering development proposals. Additionally, the Government itself is obliged to make provision within our legislative arrangements, to carry out and fulfil its obligations under EEC law. This applies to a growing number of areas. For example, EEC Directives now cover many areas such as bathing waters, environmental assessment and wildlife and habitat protection (appendix A lists the principle legislative instruments applicable to the coastal zone in the U.K. and relevant EEC Directives). As agreements are reached at higher levels to which we are party, so arrangements must be put into place at home to ensure that in reality these measures are fully implemented.

1.4 THE SPECIFIC PROBLEM

1.4.1. Coastlines around the world have become a focus for intensive human use and Britain's coastline is no exception. The need for integrated coastal and sea use management has been recognised in many of these countries although, as yet, there has been no response in the United Kingdom as to how to address the problem at a national scale. The absence of any integrated strategy for the planning of the coastline on a national level raises a number of concerns, given the issues discussed above. Many problems have been identified within the current systems. These include the inability to balance the conflicting demands on coastal

resources, the difficulties of working in a situation where policy and legislation are fragmented, where organisational boundaries are inappropriate and where a local rather than a national perspective to planning means that development decisions are not taken within the wider, strategic, framework.

1.4.2. In a number of countries the concept of integrated "Coastal Zone Management" has been adopted in an attempt to address these problems in a comprehensive manner. However, despite clear indications that the present system is inadequate to deal with the complexity of issues involved and the advice of numerous specialist bodies of the benefits of such an approach for the United Kingdom, evidence suggests that the Government intends to take only tentative steps in this direction.

1.5 APPROACH OF THE THESIS

1.5.1. Chapter one has set the issue of coastal planning and management in the United Kingdom in its wider global context and illustrates the need for coastal issues to be considered on this larger scale. Chapter two sets the scene through an examination of the existing legislative and policy frameworks within which the agencies which have responsibility for coastal matters in England currently operate.

1.5.2. Research undertaken by individual organisations inevitably tends to examine the issues from one particular perspective. It is the intention of this study to bring together the work which has so far been carried out so as to provide an overall view of the situation. Chapter three therefore reviews some of the previous research which has been carried out in the individual fields of expertise. Chapter four examines the background to the development of the concept of Coastal Zone Management and looks at how other countries have attempted to implement these ideas. Chapter five then identifies progress with the debate surrounding coastal zone management in the United Kingdom.

1.5.3. 1992 was a significant year for coastal planning in terms of the amount of debate taking place and the publication of both research and policy guidance on the part of the Government. Chapter five progresses with an examination of the major documents produced during this year, on which the planning of the coastal zone will be based in the coming decade. Due to the topicality of this subject at the present time, there is much on-going research and the results of new studies are continually being published. The end of this year was therefore taken as an appropriate cut-off point for the purposes of this work.

1.6 SUMMARY

1.6.1. The aim of this work has been to bring together some of the previous research which has been carried out within the many different areas which are relevant to coastal planning and management. The extensive nature of the subject is such that there must necessarily be some element of selection involved in order to produce a document which is of an appropriate size. Analysis of the findings of earlier research points to the widely held opinion that present arrangements for decision-making are extremely complex and will require rationalisation if the abundant natural heritage of the coastal zone is to be adequately protected from increasing development pressures for the benefit of future generations. This study therefore draws together previous work on the subject to provide an up-to-date picture at a particular point in time and examines most recent government proposals for the future planning of the coastline.

CHAPTER TWO: THE PROBLEM IN CONTEXT

2.1 INTRODUCTION

2.1.1. There are numerous bodies with varying responsibilities to regulate, manage and coordinate the many activities which take place in the coastal zone (Gubbay, 1990). This situation has evolved over many years in the absence of any specific legislative or policy framework, at a national or local level, to deal with coastal issues in an integrated manner. The resulting systems deal with the three different elements of the coastal zone, the land, sea and sea bed, independently. The impact of human activities on these three elements has also given rise to three main mechanisms to protect coastal resources, namely conservation, coastal defence and pollution control (DōE, 1992f).

2.1.2. Planning legislation encompasses only a small proportion of these activities and it is therefore necessary to look at the wider management of the coastal zone to assess and understand the relationship of the planning system to these other mechanisms. In the first instance however, it is useful to look back briefly at the pattern of development and the evolution of planning legislation in relation to the United Kingdom's coastal zone.

2.2 HISTORICAL BACKGROUND

2.2.1. The development of the railways in the early to mid nineteenth century greatly increased the mobility of the population and this, coming at a time of national economic growth, revived interest in coastal locations for recreational and retirement purposes. In many areas of the country, the population generally began to move away from inland, rural areas towards the coast. From about 1840 until the outbreak of the second World War a period of intensive activity resulted in the development of much hitherto undeveloped land.

2.2.2. The comparative increase in the level of wages, the introduction of paid holidays ("**Holidays with Pay Bill**" of 1938) and the increasing availability of motor cars fuelled the demand for accommodation by the seaside and consequently the value of land. Thus, pressure also increased on the remoter, more inaccessible areas in addition to the traditional resorts which had hitherto been served by the railways. Much of the coastline, particularly in the south-east, was destroyed. Military action during the war removed many of the eyesores but the need for greater controls to prevent the situation from re-occurring became apparent.

2.2.3. The coast also began to attract an increasing number of permanent residents and, in many ways, coastal developments simply highlighted the more general problems of town and country planning, these problems being exacerbated by the shortage of coastal land. In the face of these escalating pressures, the importance of preserving the heritage of the coastline was recognised by the Council for the Protection of Rural England (CPRE), the National Trust (NT) and the Commons, Open Spaces and Footpaths Preservation Society which joined together to form a Coastal Preservation Committee. The initial response to the problem was to acquire the areas of land most at risk, this being the most effective way to manage and control its use. However, rising land prices meant that in reality only the most outstanding tracts could be acquired.

2.2.4. The only legislative means open to Local Authorities at this time to combat the threats to amenity was through the adoption of by-laws, a procedure which was protracted, difficult and expensive. The government was subsequently persuaded to introduce a general measure, the **Public Health Act of 1936**, to help improve the situation.

2.2.5. The earlier **Town and Country Planning Act of 1932** gave district councils the power to prepare a planning scheme for almost any area for consideration by the Minister of Health, making it necessary for any developer to obtain prior approval from the local planning authority. Such schemes were not however obligatory and a survey carried out by the Coastal Preservation Committee indicated an extremely slow rate of progress. Concern about the continued destruction of the country led to greater pressure from the Ministry of Health,

particularly on coastal authorities, to produce such schemes. An internal minute of the Ministry admitted, significantly, that planning legislation at that time was least effective in coastal districts (Sheail, 1976).

2.2.6. In 1938 the Ministry issued Circular 1750 which directed local authorities to preserve natural beauty, whilst allowing development where appropriate, and to provide public access to the coast and shore, using existing legislation to designate Coastal Zones where all development, except for agricultural purposes, would be subject to planning controls. The question of compensation however remained an obstacle and, given the threat of an outbreak of war, this particular objective was low on the scale of priorities when it came to claims for Exchequer assistance.

2.2.7. During the war, in late 1940, the Minister of Works and Buildings became responsible for initiating the physical planning of post-war Britain. However, in March 1942 all planning functions were transferred to a new Ministry of Works and Planning which was replaced, a year later, by a Ministry of Town and Country Planning which had responsibility to form and execute a national policy for planning the use and development of land in England and Wales. (Cullingworth, 1964). Whilst the renewal of urban areas was the first priority, the beaches and coastal areas generally had also suffered greatly during the war years since they were a first line of defence. Furthermore, it was expected that there would be a rush of holiday-makers as soon as the war ended which would threaten the remaining unspoilt parts of the coastline. The voluntary bodies saw coastal preservation as a component part of a national parks policy but the Ministry maintained that the two should be treated entirely separately for planning purposes.

2.2.8. In 1943, as adviser to the Ministry regarding scientific matters, J.A. Steers visited and reported on every stretch of coastline in England and Wales in order to provide an objective assessment of scenery. A series of optimum-use maps for England and Wales was produced (subsequently he went on to carry out the same task in Scotland over the next seven years). Steers' reports (Steers, 1944, 1946) were significant in that they stressed not only the

attractiveness of the coast but also its importance as a key research site and outdoor classroom, providing the government with positive reasons to plan for its protection and preservation.

2.2.9 The Coastal Preservation Committee had emphasised the need to preserve not only the coastline but also a landward strip which would vary in width according to factors such as erosion and the degree of visibility of inland areas from the coast (Sheail, 1976). Steers emphasised the need to think on a larger scale than that of the region, believing that a national policy was required in order to both preserve vulnerable areas whilst at the same time provide the necessary facilities for holiday-makers.

2.2.10. The **Town and Country Planning Act 1947** gave local planning authorities so far unprecedented powers to control and guide development, although it made it difficult to instigate special planning procedures in particular areas. It became increasingly apparent that the coast was an area in which such special procedures were required. However, having so recently awarded planning powers to the county councils, it was politically impossible to transfer them to any form of new non-elected body (Sheail, 1976). Consequently, the National Parks Commission was given only advisory, rather than executive, powers and the anticipated central coastal planning authority was never established. The county councils meanwhile were urged, in cooperation with their neighbouring authorities, to produce plans indicating their policies for the future development and protection of the coast (Ministry of Housing and Local Government, 1966).

2.2.11. The National Parks Commission held nine regional conferences to study the use of the coast and plan for its long-term preservation and enjoyment by the public. The Countryside Commission later designated 34 areas which were the best examples of coastal scenery, covering 1175km of coastline, as "Heritage Coasts" (Countryside Commission, 1970) on the basis of the information collected at these conferences.

2.2.12. Although the idea of purchasing stretches of coastline for preservation had earlier run into problems, the National Trust has nevertheless successfully managed to do just that through Enterprise Neptune which was launched in 1965. The campaign raised over 2 million and within eight years the length of coast owned by the National Trust rose from 301km to 573km. The organisation continues to promote public enjoyment of and access to the coastline.

2.2.13. This summary illustrates that the coast has consistently been identified as an area under pressure from conflicting uses, with particular characteristics which are important to retain. However, it has never been the subject of legislation or policies designed specifically for its protection. Since coastal issues have never been addressed in their own right, the control of development in these areas has simply been undertaken through the operation of the planning system as it applies to the remainder of the country.

2.3 CURRENT LEGISLATION

2.3.1. There are currently over 80 different Acts dealing with the regulation of activities taking place in the coastal zone. The main ones are set out in appendix A. Most of this legislation is aimed at specific activities and, whilst planning legislation does to varying degrees apply across the sectors, it nevertheless relates only to the landward part of the zone. In planning terms, therefore, the coastline represents a definitive boundary, the seaward side of which falls strictly outside of planning control.

2.3.2. The development control system thus operates within a framework which attempts to regulate land use but fails to take account of the natural physical processes taking place on the other side of the boundary and is unable to adequately control the activities taking place at sea. The coast is therefore not only a boundary between land and sea but also between different administrative units. As we have seen, there has been a marked reluctance on the part of the Government to introduce any single body to oversee planning and management of the coastal zone at a national level. Responsibility for dealing with these matters and implementing the

vast amount of legislation currently lies with numerous agencies. Many more must also be consulted and thus have a part to play in the regulation of activities. Chapter three examines evidence of the concerns of some of these organisations which suggests that in fact the system could be much improved. Appendix B provides an indication of the number of organisations involved.

2.4 GOVERNMENT POLICY

2.4.1. The preceding sections outline some of the background to the development of the planning system as it applies to the coastal zone. However, it is clear that a broader range of legislation is employed to deal with the numerous activities taking place in the coastal zone than the planning system, at the present time, can legitimately encompass. The following sections therefore describe the wider legislative instruments available to regulate and monitor particular activities and outline where responsibility for enforcing legislation and translating policy into practice actually lies.

2.4.2. The Department of the Environment (DoE) has general overall responsibility for environmental matters in respect of both the landward and seaward parts of the coastal zone in England. The Ministry of Agriculture, Fisheries and Food (MAFF) is responsible for coastal defence policy, fisheries and the dumping of waste at sea. Responsibility for matters relating to shipping, oil and gas and sport and recreation rest with the Departments of Transport, Energy and Education and Science respectively. In England and Wales, the Home Office is responsible for byelaws. In Scotland, Wales and Northern Ireland, the functions of the DoE and MAFF are mainly undertaken by the territorial departments (House of Commons, 1992b).

2.4.3. Within this overall framework, much of the responsibility at a local level rests with the local authorities who have powers under the Planning Acts, responsibility for coastal defence issues, statutory environmental regulation functions and powers to make byelaws. Many other agencies, such as the National Rivers Authority (NRA), English Nature (EN) and Her Majesty's

Inspectorate of Pollution (HMIP), are also obliged to consult and take into account the views of the local authorities before carrying out their regulatory functions.

1) LAND-BASED DEVELOPMENT

2.4.4. The coastal local planning authorities in England and Wales have powers under the Town and Country Planning Acts to control development on land above mean low water mark. The ability of land to be categorised and identified by ownership allows this system to take place. The mean low water mark denotes the end of all local authority's jurisdiction and consequently the planning system does not operate beyond this limit.

2.4.5. Planning legislation was reviewed in 1990 and the consolidating legislation, the **Planning and Compensation Act 1991**, requires local authorities to produce development plans. Separate arrangements exist for the National Parks. Taking account of appropriate regional guidance, it is intended that the development plans should include policies as necessary to deal with the range of issues taking place in the coastal zone. These policies must however be relevant to planning considerations if they are to be used as a basis for development control decisions. Subject plans are specifically excluded from the development plan system in England and Wales although local authorities are encouraged to work together if further guidance is needed on issues which cross administrative boundaries. Coastal plans therefore fall very firmly within this category and do not have statutory status.

2.4.6. Applications for planning permission to develop land are therefore decided primarily on the basis of the policies contained within these plans, after taking into account all material considerations. Furthermore, the Planning and Compensation Act introduced a new section 54(a) into the **Town and Country Planning Act 1990** which effectively gives the policies contained in any up-to-date development plan considerable weight. Consequently, determinations should in all cases be made in accordance with such plans, unless material considerations indicate otherwise.

2.4.7. The government produces supplementary guidance for local planning authorities, and others, in the form of Circulars and Planning Policy Guidance Notes. Up-to date guidance in the form of PPG 20: "Coastal Planning" (DoE, 1992b), was introduced in September 1992, thereby cancelling the advice contained in the long-standing Circular 12/72 "Planning of the Undeveloped Coast". The new guidance will be considered in more detail later. Further recent advice includes that regarding development in flood risk areas (DoE Circular 17/92) due to increasing concerns about the implications of rising sea levels. This is obviously of direct relevance to the planning of coastal areas. The Government maintains that much of the other general guidance available applies equally to development in this zone.

2.4.8. There are no planning powers or statutory designations applicable specifically to the coastal zone. However, a significant proportion of the coast is covered by one or more of a number of general designations which apply to many areas throughout the country (see Figure 1. in chapter one). These include the National Parks, Areas of Outstanding National Beauty and Conservation areas, policies for which are defined in Development Plans to enable local authorities to exercise greater control over development.

2) CONTROL OF DEVELOPMENT BELOW THE LOW WATER MARK

2.4.9. Below low water mark it is not possible to clearly delineate boundaries within which particular activities or uses may occur. The government believes that in this location it is therefore impractical to control these uses by means of an overall planning system such as that in operation on land (House of Commons, 1992b). Additionally there are other factors to be taken into account when attempting to impose a system of control in respect of the use of the sea, which do not apply to the land, such as the right of free navigation. Furthermore, since the variety of uses is considered to be more limited than that occurring on land, giving rise to less conflict, a system based on regulation according to activity rather than ownership or area has developed.

2.4.10. The complexity of coastal development proposals means that works in tidal waters may require the consent of up to eight different organisations. The Government recognises the need for rationalisation of these procedures and is undertaking a review in order to simplify the system (House of Commons, 1992b). The requirement for environmental assessment forms part of these procedures where development is likely to have a significant effect on the environment (Haigh, 1987). Consent is required from the Crown Estate Commissioners for almost any activity on the seabed, (between Mean Low Water Mark and the limit of territorial waters) or the half of the foreshore (between high and low water marks) which forms part of the Crown Estate. The two activities which have generated the greatest amount of concern are marine aggregate extraction and marine fish farming.

2.4.11. **Marine aggregate extraction** is controlled through the non-statutory Government view Procedure which was revised in 1989 and incorporates environmental assessment. The Commissioners consult with all interested parties and advertise applications for production licences. All responses are passed to the Department of the Environment which formulates the Government View of the proposal, so determining whether the Commissioners issue, subject to relevant conditions, or refuse the licence. It is Government policy to encourage the use of such aggregates provided that unacceptable coast erosion or damage to sea fisheries and the marine environment does not occur.

2.4.12. In respect of **marine fish farming**, the Crown Estate Commissioners lease some 600 sites, mainly for salmon in Scotland but also for shellfishing around the U.K. coast. The procedures for issuing such licences involve wide consultation and incorporate the Commissioners' responsibilities for environmental impact assessment under EC rules. However questions have been raised regarding the dual role of the Commissioners in that they have the regulatory power to make decisions about the environmental effects and at the same derive an income from the granting of such leases. The system was examined by the House of Commons Select Committee on Agriculture (HC 141 1989-90) and no evidence of serious environmental damage found. The Government agreed in its response (HC 116 1990-91) that some areas required further investigation. There is a substantial amount of research being

undertaken, some by the industry itself, into various matters, including environmental effects. Physical works on land required for fish farms are subject to planning control.

2.4.13. Development affecting navigation: Under the **Coast Protection Act 1949**, proposed works in tidal waters which would endanger or obstruct navigation require the consent or approval of the Secretary of State for Transport. The Secretary of State may refuse consent or grant it subject to conditions but in doing so may only take into account navigational considerations. Those likely to be affected must be informed and other parties are invited to comment on the proposals.

2.4.14. Ports: Local Acts or Orders made under the Harbours Act 1964 provide the statutory framework for controlling the commercial and recreational use of the 300 harbours in Great Britain. The nature and function of Harbour Authorities varies widely. They all require statutory powers to construct and maintain harbour works below the high water mark, applying to the Minister for Harbour Orders where their powers are insufficient. They also need a licence under the **Food and Environment Protection Act 1985** for such construction work. An environmental assessment must accompany any application for a Harbour Order involving significant works. Changes in the Regulations in 1989 brought within the environmental assessment regime those works which are not authorised by a Harbour Order and where planning permission is not required (since the works are below low water mark).

2.4.15. Oil and gas extraction: A licence is required under the **Petroleum (Production) Act 1934** to carry out such work. Such licences may carry conditions, restrictions or inhibitions on certain activities, reflecting environmental, fishing, defence and transport interests.

2.4.16. Renewable energy sources: Research and development of a number of technologies utilising tides, wind and wave power and use of seaweed and other marine plants as fuel, are still taking place. None has as yet been established to be economically viable. As such there is no system of control yet in place, although the Government is mindful of the need to ensure

some system of obtaining consents is in place before development is begun. Clearly, such schemes could potentially have a considerable impact on the coastal environment.

2.4.17. Recreational craft: Under the **Public Health Acts of 1936 and 1961**, local authorities can make byelaws to control such activities up to 1000 metres beyond the low water mark. These byelaws apply to the use of all craft used for recreational purposes within the area specified and can therefore be used to regulate speed and hence nuisance caused by some of the noisier types of modern vessels such as jet skis.

2.4.18. Coastal fisheries: The twelve Sea Fisheries Committees in England and Wales make byelaws, having powers under the **Sea Fisheries Regulations Act 1966**, to regulate the taking of fish and shellfish in the interests of fisheries management. These regulations include limiting the length of vessels and specifying the type of gear which can be used, minimum landing sizes and areas of restricted fishing. Their jurisdiction extends to three miles from the coast. The NRA also has the power to make byelaws to protect stocks of migratory fish although such byelaws require the approval of the appropriate Minister, as do those made by the fisheries committees.

2.4.19. The EC's Common Fisheries Policy, through EC Regulations, limits the proportion of stock which may be caught, the type of gear which must be used and the size of vessels operating within twelve miles of the coast in order to conserve stocks and ensure they are maintained as a renewable resource. Closed or limited fishing areas are also defined and may be strengthened by stricter national measures. The **Sea Fisheries (Shellfish) act 1967** allows the granting of Orders, of which there are 24 operating in Great Britain, creating the exclusive right to cultivate shellfish in specified waters. Release of non-native fish and shellfish into the wild is controlled by licensing arrangements under the **Wildlife and Countryside Act 1981**, following consultation with the conservation agencies.

3) PRIVATE BILL PROCEDURE

2.4.20. This procedure applies to certain types of development both above and below low water mark and as of the 1991-92 Parliamentary Session, must include an environmental statement unless the Secretary of State decides otherwise. It is proposed to introduce legislation so that authorisation will be via Ministerial Order rather than private Act and the procedure will incorporate environmental assessment where this is required by EC law (House of Commons, 1992b).

4) PROTECTION OF LANDSCAPE AND WILDLIFE

2.4.21. Landscape and wildlife conservation are the responsibility of the Department of the Environment and the territorial Departments. In England, policy is largely implemented through the Countryside Commission and English Nature respectively. These functions are combined in the Countryside Council for Wales, Scottish Natural Heritage and the DoE in Northern Ireland.

2.4.22. **Landscape :** Much of the undeveloped coastline lies within five of the ten National Parks and almost half of the thirty-nine Areas of Outstanding Natural Beauty which were designated under the **National Parks and Access to the Countryside Act 1949**. Such designation allows stricter control over new development where specific policies are incorporated into the relevant development plans. The Countryside Commission is responsible for promoting public access to the countryside through designation of long distance footpaths and bridleways. It also introduced the non-statutory designation of 'Heritage Coasts' which now covers the third of the coastline of England and Wales which is considered to be of sufficient quality in terms of scenic beauty and opportunities for enjoyment by the public. Whilst most of these Heritage Coasts lie within the other statutorily designated areas, the emphasis is intended to be on management. 540 of the 770km of coastline under the protective ownership of the National Trust has Heritage Coast status (Lucas, 1992).

2.4.23. **Wildlife:** There are over 5,600 Sites of Special Scientific Interest (SSSI'S) covering some 7,800 sq kms of land and intertidal water in England (Barton & Buckley, 1987). 2,800 sq

kms, or 38 per cent of the total area designated occurs within the coastal zone (NCC, 1991). Designation of such areas by the conservation agencies is the main method of wildlife conservation, although they can only extend to the boundaries of local authority jurisdiction which is the mean low water mark. Local Planning Authorities are required to consult the agencies and take their views into account when considering applications for certain types of development. Within each SSSI certain activities known as 'potentially damaging operations' (P.D.O.'S) may not be carried out unless a management agreement has been entered into or the consent of the agency has been obtained.

2.4.24. National Nature Reserves (NNR'S) are established by the conservation agencies and Local Nature Reserves (LNR'S) by local authorities. Most are in private ownership although some reserves near the coast are managed by voluntary organisations such as the Royal Society for the Protection of Birds. Areas of Special Protection, which under certain circumstances may extend beyond the low water mark, can be designated under section 3 of the **Wildlife and Countryside Act 1981** (these provisions were formerly contained within the **Protection of Birds Act 1954**). Section 36 of this same Act allows for the designation of Marine Nature Reserves for conservation or research purposes.

2.4.25. In 1986 the then Nature Conservancy Council identified 14 Marine Consultation Areas (MCA'S). The NCC then published a document in 1990 which identified a further 15 sites and outlined the particular distinctions of each in terms of their contribution to the marine environment. A consultation paper was issued in February 1992 containing a list of proposed areas in England and Wales where pressures on conservation are strong (DoE, 1992g).

2.4.26. EC Directive 79/409/EEC on the Conservation of Wild Birds requires the designation of Special Protection Areas (SPA'S) which should extend to the limits of territorial waters. Forty have so far been designated, twenty-seven of which are on the coast. They are also SSSI'S and derive their protection through this parallel designation. A possible further 182 have been identified. Wetlands of international importance are also required to be designated under the Ramsar Convention (Ramsar Convention on Wetlands of International Importance especially

as Wildfowl Habitat, 1971) extending to marine water up to six metres in depth and, similarly, their existing SSSI status is designed to give them protection. Of the forty-five Ramsar sites so far listed, twenty-one are on the coast. Two further international agreements to which Britain is signatory are the Berne Convention on the Conservation of European Wildlife and Natural Habitats, 1979 and the Bonn Convention on the Conservation of Migratory Species of Wild Animals, 1979.

5) POLLUTION CONTROL

2.4.27. Under the **Water Act 1989** water quality objectives must be established and met for all coastal waters. EC Directives on Shellfish (79/923/EEC) and bathing Waters (76/160/EEC) impose a further requirement for coastal waters to achieve certain pollution control standards. This latter Directive is implemented through the Water Resources Act 1991. Over 450 areas have been identified under this Directive, 77 per cent of which met the standards in 1990 compared with 51 per cent in 1986 (House of Commons, 1992B). Further Directives attempt to control input of dangerous substances (See appendix A). International agreements also exist to protect the quality of the marine environment, to which we are party. The North Sea Conferences of 1984, 1987 and 1990 reached agreements to regulate offshore activities, limit pollution from ships and to protect certain marine species.

2.4.28. **On land**, the statutory basis for pollution control in England and Wales is provided by the **Water Act 1989** and the **Environmental Protection Act 1990**. Integrated pollution control by Her Majesty's Inspectorate of Pollution (HMIP) applies to certain processes and requires the application of the "BATNEEC" principle (best available techniques not entailing excessive cost) in order to control the creation and discharge of wastes. It applies to the substances which are the most harmful to the environment and are on the United Kingdom's "Red List". HMIP must consult the National Rivers Authority (NRA) before granting discharge consents and must take into account their water quality objectives. All other discharges into water are controlled by the NRA in England and Wales.

2.4.29. Local authorities are responsible under the 1990 Act for regulation of waste disposal, discharges to air and land and control of nuisances such as noise, to the landward side of mean low water mark. Thus local authorities, amongst others, must ensure that publicly accessible areas, such as beaches above the level of the mean high water tide, are cleaned to the standards set out in a Code of Practice. The Government is considering setting up a new Environment Agency for England and Wales, bringing together HMIP, related functions of the NRA and responsibility for waste regulation.

2.4.30. **At sea**, disposal of waste is controlled by MAFF under the **Food and Environment Protection Act 1985**, in England. The Act requires account to be taken of the need to protect the marine environment and public health and to prevent interference with legitimate uses of the sea.

2.4.31. International cooperation is the method employed to prevent pollution from vessels. Regulations to control sewage from ships and to limit air pollution have not yet come into force. Regular inspections take place to ensure that standards relating to tanker operation, design and equipment are complied with. Whilst bearing in mind the international right of innocent passage around our coasts, improvements are sought in navigation procedures as a way of reducing the chances of an accident and hence pollution. Two Areas To Be Avoided (ABTA's) have been established, which certain vessels may not enter, in order to protect particularly ecologically sensitive areas. Where this is impractical the Department of Transport relies on establishing advisory routes.

2.4.32. Major spillages arising from vessels at sea are handled by the Marine Pollution Control Unit (MPCU) of the Department of Transport which carries out regular air patrols to detect and deter illegal discharges. When pollution threatens the United Kingdom's beaches, fisheries, seabirds or ecologically sensitive areas, it is the job of the MPCU to take counter pollution action. Colour maps showing the distribution of wildlife habitats along the coast, particularly those areas falling within the designations outlined above, have been sent to all coastal county

and regional authorities and government departments. English Nature advise the MPCU on the implications of pollution on wildlife.

6) COAST DEFENCE

2.4.33. In England and Wales, responsibility for coast defence policy lies with MAFF and the Welsh Office respectively. This combines coast protection, the protection of land from erosion or encroachment by the sea, with the sea defence element of flood defence, which relates to the prevention of flooding by rivers or the sea.

2.4.34. **Coast protection:** Under the **Coast Protection Act 1949**, the relevant district councils may carry out works approved by the appropriate Minister. In respect of all works, other than maintenance, repair and emergency operations, prior consultation is required with the NRA, neighbouring district councils, the county council, harbour, navigation and conservancy authorities, fisheries committees and MAFF. Following receipt of submission for such works, MAFF consult other Government Departments, the Crown Estate Commissioners, the Countryside Commission and English Nature. Schemes must also be advertised and a local inquiry or hearing held if objections are not resolved or withdrawn.

2.4.35. **Flood defence:** The **Land Drainage Act 1976** and the **Water Act 1989** provide the legislative background for the construction, maintenance and improvement of defences against inland and coastal flooding in England and Wales. This is undertaken by the ten Regional Flood Defence Committees of the NRA, by local authorities and by the 250 Internal Drainage Boards which operate in areas with special needs. Authorities are responsible for identifying coastal defence requirements and carrying them forward. The NRA is responsible for supervising all matters relating to flood defence and the district councils are required to consult them about coast protection works. A coastal defence forum, set up by MAFF and the Welsh Office encourages discussion of technical matters and strategic planning of coastal defences.

2.4.36. Environmental considerations: MAFF's strategy for dealing with global warming involves replenishing existing defences to enable them to withstand the expected conditions and encouraging designs which allow adjustments when the extent of the problem is more clearly appreciated. Research into these areas is currently under way. The engineering of coastal defences has moved a great deal in recent years towards an emphasis on natural solutions and it is now recognised that beaches perform the important functions of absorbing energy in storms and self-rehabilitation (Bray et al., 1992).

2.4.37. New defence works on land are subject to planning control and environmental assessment procedures apply to improvement works where they are likely to have significant environmental effects. Below low water mark the consent of the Crown Estate Commissioners is required. Under the **Coast Protection Act 1949** and the **Land Drainage Act 1976** the relevant Minister is able to pay grant for coast protection works. Priority is given to flood warning and urban inland and coastal defence work. Schemes are not however approved for grant aid where English Nature object to the proposals. Extra grant available for the repair of defences damaged in the storms of 1989-90 will take the mean grant for NRA flood defence schemes from 21.6 million in 1990-91 to 40.4 million by 1993-94 (House of Commons, 1992).

2.4.38. MAFF funds the national research and development programme in respect of coastal defence issues and the Storm Tide Warning Service which provides advance notice of storm surges. MAFF works closely in England and Wales with the NRA which is responsible for issuing flood warnings and coordinating local arrangements to deal with flooding.

2.5 SUMMARY

2.5.1. The above sections set out a wide range of Government policies of relevance to the coastal zone. The implementation of these policies clearly involves a large number of un-related organisations. However, the Government considers this to be inevitable, given the range of issues involved, and does not believe that such a situation has led to any conflict between development and the protection of the environment (House of Commons, 1992).

2.5.2. The next chapter sets out the views of some of the many organisations which are involved directly, either in terms of a research capacity or in the implementation of these policies or are affected by the outcomes of such policies. Some specific examples are included of instances where such conflict has occurred.

CHAPTER THREE. ADMINISTRATIVE AND ORGANISATIONAL FRAMEWORK

3.1 INTRODUCTION

3.1.1. The political circumstances surrounding the government's inability and unwillingness in the 1940's to introduce any single statutory body to deal with coastal issues at a national level were discussed earlier. Despite increasing pressure from a variety of sources in recent years to reconsider this stance, the position has not changed. The government considers that the existing system is "working well" (House of Commons Environment Committee, 1992) and therefore continues to rely on numerous organisations and agencies to implement its policies and to provide specialist advice on matters within their own particular spheres of interest, through a regulatory framework which incorporates extensive consultation procedures.

3.1.2. This chapter examines some of the research undertaken by a number of the more prominent organisations which highlights inadequacies in the current systems. The variety of organisations which have an interest in the coastal zone include an increasing number of non-statutory, private and voluntary agencies whose memberships are swelling due to growing awareness of the issues involved and who increasingly have a part to play.

3.1.3. The number of statutory agencies involved in the planning and management of development and activities taking place both on land and at sea is enormous. Appendix B lists the agencies concerned with both land and sea based uses, grouping them according to the activity in question.

3.1.4. The role and responsibilities of these statutory bodies is such that they necessarily deal with activities taking place on the land and at sea separately. The diversity of these agencies and the complexity of arrangements for coordination on specific issues has been raised as a significant weakness in the current system as discussed below. However there is also a multitude of other non-statutory specialist organisations which have grown in number and size

in recent years. These organisations do not necessarily observe the land/sea divide and consequently, where appropriate, view the coastal zone as an entity which requires consideration as such.

3.1.5. There is a great deal of ongoing research in addition to that which has already been completed. The following paragraphs select some of these research efforts, grouping them into the relevant specialist fields. A number of areas are identified which, in particular, illustrate how current arrangements have been unable to provide adequate protection to sites of nature conservation importance.

3.2 ORGANISATIONS WITH PLANNING EMPHASIS

3.2.1. The **Royal Town Planning Institute** has recently set out its views on the planning and management of the coastal zone (House of Commons, 1992). The Institute supports the contention of other organisations that existing arrangements are not preventing the loss of valuable areas of coast and sets out its principles for future planning policy in coastal areas. These call for an extension of local authority controls below low water mark, a national planning policy and a rationalisation of the decision-making process, rather than the creation of new authorities or any one overall body to deal with matters in the coastal zone. The Institute considers that the existing agencies should continue to fulfil their role in the various aspects of coastal zone management, although coordination should be improved and professional knowledge transferred across specialisms.

3.2.2. The **National Coasts and Estuaries Advisory Group** was set up in 1990 to spread knowledge and ideas about good practice concerning the coastal zone and comprises officers of local authorities who are active in coast protection and planning matters. It considers that the absence of an integrated framework within which the complexity of relationships in all areas of the coastal zone can be properly considered, has led to "overlap, confusion, omission, piecemeal action and a lack of longer-term planning" (House of Commons, 1992). A large

number of inadequacies in the present arrangements are identified. Whilst some of these may be overcome within the existing system through Government guidance, advice and backing for initiatives already under way, a full review of both systems and legislation is called for.

3.2.3. More specifically, the Group would argue for a number of measures. These include a national perspective, with Government support and regional guidance for the development of a strategy for each coast and estuary; the setting up by Government of standing fora which would be responsible for preparing non-statutory management plans for each stretch of coast (particularly where the coastal zone lies within the jurisdiction of more than one local authority) and would be overseen by a designated 'lead agency'; the extension of statutory planning powers below the low water mark, to an extent to be agreed on an area by area basis, coupled with a review of the permitted development rights of harbour and port authorities; a review and rationalisation of responsibilities; a speeding up and extension of existing designations to ensure adequate protection to particularly sensitive areas; additional research, particularly in respect of the marine environment where a national database is required to enable information to be readily accessed.

3.2.4. The **South East Regional Planning Conference's** general land-use and transportation strategy for the south-east identifies the organisation's primary objective to be to "...ensure an enhanced quality of life... by seeking to create and conserve an ecologically sound, aesthetically pleasing and pollution-free environment.." (SERPLAN, 1989). In issuing for consultation in December 1992 a draft of a report by its Coastal Policies Working Party, the organisation further reinforced the high priority it places on environmental considerations (SERPLAN, 1992). Following consultation with the local authorities, the final version of the document is intended for incorporation into Regional Planning Guidance, to be issued by the Secretary of State.

3.2.5. The paper sets out the Group's recommendations on coastal planning in both environmental and economic terms. SERPLAN acknowledges the increasing pressures being placed on coastal resources, from both recreation and demand for economic growth and recognises that the coastal environment has hitherto suffered from uncoordinated

decision-making and lack of cooperation between the many bodies responsible for implementing policy. Consequently it views the adoption of an integrated approach to coastal issues as a positive new challenge which must be tackled by the planning system at national, regional and local level. In summary, the main components of the strategy are;

"..to protect the undeveloped coast from development; locate new development within the developed areas of the coastline; promote a healthy marine environment; and, maintain coastal defence for the protection of life and property and irreplaceable habitats and elsewhere promote managed retreat including those areas where the cost of maintaining sea defences outweighs the property and environmental costs of flooding. The theme of sustainability is addressed within the strategy and the need for environmental assessment is re-iterated as a prerequisite for a sustainable approach."

The guidelines conclude with a section on implementation which lists the activities required from the organisations involved with planning and managing the coast.

3.3 PROTECTION OF WILDLIFE, LANDSCAPE & HABITAT

3.3.1. Chapter one identified an increase in the awareness by the public of environmental issues. The evidence for this can be found in the increasing number of pressure and interest groups concerned with the protection of wildlife and natural habitats, both in the wider countryside and the coastal zone, which have sprung up around the country. Appendix C gives an indication of the extent of these groups.

3.3.2. The **Nature Conservancy Council (NCC)** is a statutory organisation. One of the most detailed reports in recent years is the NCC'S publication Estuaries, Wildlife and Man (NCC, 1991b) which provides a comprehensive summary of nature conservation issues affecting estuaries in Great Britain.

3.3.3. This report highlights the main features of British estuaries and the wildlife they support based on the findings of the Nature Conservancy Council's "Estuaries Review" which was established in 1988 in response to widespread concerns about the threats to British estuarine ecosystems. The report identifies the main findings of that review, one of the most important

for this study being that "It appears, from the continuing widespread destruction of British estuarine ecosystems, including internationally important areas, that the existing safeguards are not effective at maintaining and enhancing the wildlife resource as required under international conservation commitments".

3.3.4. The report identifies a number of threats to the conservation of these habitats and concludes with four key issues for the future;

(1) The need for a national policy to sustain the estuarine resource;

(2) The adoption of statutory site safeguard mechanisms on estuaries to ensure that effective conservation of estuarine ecosystems, including both terrestrial and marine features, is in line with international requirements;

(3) The need to work with individuals and organisations whose activities affect the health of estuaries and their wildlife, so as to ensure a greater awareness and acceptance of the value of estuarine and conservation needs;

(4) The need to work with local interests at the level of individual estuaries to develop integrated management and development strategies, in line with the international and national estuarine network and its conservation needs.

3.3.5. The Nature Conservancy Council sees estuaries as one of Britain's most natural valuable assets which need to be protected from further destruction by a wide variety of activities and development. Their concerns are borne out by a further survey (Davidson, 1991), which indicated that 0.5 per cent of all estuarine habitats are being permanently lost to development or waste disposal every year. A review of existing arrangements and procedures is therefore urgently required if this destruction is to be halted.

3.3.6. The **Marine Conservation Society** (MCS) is a non-governmental organisation which promotes sustainable and environmentally sensitive management as a means to protect the marine environment, both for wildlife and for future generations. The **World Wide Fund for Nature** aims to achieve the conservation of nature and ecological processes and has a specially

established marine unit in its conservation department reflecting the high priority of the marine environment in its work.

3.3.7. The two organisations have jointly undertaken a number of pieces of research into marine conservation issues and, more extensively, into the wider issue of coastal zone management and thus their views on the measures needed to improve the current situation coincide. The latter research will be covered in more detail in a later chapter. This research identifies a number of concerns which the MCS believes can only be properly addressed by taking an overall perspective of the integrated use of the coastal zone, rather than looking at any specific users. The example of Marine Protected Areas is used to illustrate that the conservation of the marine environment cannot be achieved within the framework which presently exists: progress, in establishing just two Marine Nature Reserves in over ten years, has been extremely slow. Their success depends on maintaining the overall quality of the marine environment which is impossible under current arrangements since local planning authorities have no jurisdiction below low water mark (Gubbay, 1988). The legality of SSSI'S which cross the land/sea divide is also questioned. This is linked to the ability of the United Kingdom to fulfil its obligations under EEC Regulations and international agreements which require protection to extend beyond the current boundary of mean low water mark. The government is currently investigating these matters and intends to publish a discussion paper (House of Commons, 1992b).

3.3.8. The **National Trust for Places of Historic Interest or Natural Beauty** was founded in 1895 as an independent charity which, under the National Trust Acts, can acquire land for permanent preservation with a legal presumption against development or acquisition by other bodies. It is the largest conservation organisation in Europe with over 2.1 million members (Rowell, 1991). Under its 'Enterprise Neptune Appeal' launched in 1965 it had acquired 473 miles of coastline by 1990, of which 356 miles is defined as Heritage Coast, representing 38 per cent of the total designation at that time. The Trust works at a practical level with a variety of other, statutory and non-statutory, organisations and carries out surveys of its own properties to promote better understanding of the coastal resource.

3.3.9. In conjunction with a number of the other conservation bodies, the Trust called for a review of policy, legislation and administrative arrangements in its submission of evidence to the House of Commons Select Committee. It advocates an integrated national policy framework to deal comprehensively with existing problems and threats: the establishment of a lead agency to take overall responsibility for matters affecting the coastal zone: and the extension of local authority planning controls to the three mile limit. The National Trust also believes that the activities of the Crown Estate should be brought under planning control and that consideration must be given to further designations which span land and sea, as proposed by the MCS in respect of Marine Protected Areas.

3.3.10. The **Royal Society for the Protection of Birds (RSPB)** is Europe's largest voluntary wildlife organisation with a membership of around 900,000. The RSPB concurs with many of the other conservation organisations in finding the existing planning and management arrangements in respect of the coastal zone to be inadequate to resolve conflicts and protect flora and fauna. It advocates action at local, regional and national levels where a separate unit should be established within central government to take the lead on coastal matters, to coordinate and integrate the activities of various sectors of government and develop comprehensive consultation and implementation mechanisms. The RSPB cites the NRA as a body well placed to oversee the implementation of a national policy at regional and local levels since it already has key areas such as fisheries management, recreation, water quality, sea-defence and conservation within its remit and operates on a national level.

3.3.11. The RSPB considers that local authority powers should be extended to enable them to control the management of intertidal and adjacent water areas and that they should work together towards regional coastal management strategies. It also considers that the legislation relating to wildlife is inconsistently applied, failing to protect important intertidal areas or deal with marine species or habitat conservation effectively (Cadbury, 1987). An overall review of the existing system is therefore called for in order to achieve a coastal planning and decision making process which has clear policies, an integrated national strategy and central guidance to ensure the sustainable use of the coastal zone.

3.3.12. The RSPB has undertaken considerable research on which to base its recommendations. In 1990 it published a document which extensively reviewed the conservation interest and problems facing the United Kingdom's estuaries (Rothwell & Housden, 1990). Estuaries constitute a significant proportion of the coastline, are subject to some of the strongest development pressures and also support a rich variety of plant and animal species. The conflicts in these areas will be further heightened as a result of global warming and the expected rise in sea levels. A survey of 123 estuaries, revealed that 80 were considered to be under some threat, with 30 in imminent danger of permanent damage (Rothwell, 1989). Of particular concern is the size of estuaries which often means that they fall within the jurisdiction of many local authorities which are not equipped to look at the problems on a larger scale.

3.3.13. The RSPB has carried out its own internal study of the impact of sea level rise on birds (RSPB, 1989) which concluded that 26 Red Data Bird species were threatened. A previous study (DoE, 1988) also identified threats to wintering wildfowl and waders on estuaries where loss of inter-tidal areas was predicted due to an increase in erosion of soft shores coupled with the sea rising up against hard sea defences.

3.3.14. One of the most serious threats to coastal ecosystems comes from the transportation of oil around the world. Oil pollution has an extremely visible, damaging and lasting effect on wildlife, land and seascape and amenity. Furthermore, the number of incidents of oil pollution rose from 116 in 1985 to 395 in 1989 (National Audit Office, 1991). The Marine Pollution Control Unit in the Department of Transport does not have the capacity to respond to major incidents such as have occurred recently in other parts of the world (Nature Conservancy Council, 1991a).

3.3.15. **WildlifeLink** have produced a document (Wildlife Link, 1991) which contains 22 specific examples illustrating the types of problems caused by multiple jurisdiction in the coastal zone. The paper concludes that there is an urgent need for a clear lead from government at a national level to ensure that the coastal zone is considered as an entity and given specific attention.

Without such attention it will always be regarded as a boundary "on the edge of everyone's concern and the responsibility of no-one".

3.3.16. English Nature (EN) is the statutory adviser to Government on nature conservation in England. Its functions are to provide advice and information, designate and manage nature reserves, notify SSSI's and conduct and support research relevant to nature conservation. Its stated objectives in respect of the coastal zone are to "(1) conserve irreplaceable coastal features of wildlife and earth science interest (2) ensure the natural heritage passed on to future generations is as rich and varied as that which we have inherited and (3) encourage the enjoyment and appreciation of our natural heritage by all" (House of Commons, 1992).

3.3.17. Studies have shown that over the last two hundred years, British estuaries have lost between 0.2% and 0.7% of their mudflats, sandflats and saltmarshes every year (English Nature, 1992). These areas contain habitats which are not found inland and comprise their own particular composition of plants and animals. Together they support 48 nationally rare and 65 nationally scarce plants. Britain's estuaries and soft shores, which provide important food sources for fish and birds, make up 28 per cent of the estuarine area of the European Atlantic and North Sea coastal states (English Nature, 1993).

3.3.18. English Nature perceives one of the biggest threats to coastal habitat to be the upsetting of the balance of nature due to coastal and flood defences. The prevention of cliff erosion and sediment transportation interferes with the natural systems which are themselves effective defences. The maintenance of the present man-made defences will bring low and high water marks closer together when sea levels rise, resulting in a substantial reduction in the area of intertidal land. Whereas in the past we have been unaware of the full extent of such interference, current information suggests that damaging changes have occurred all around the coast and to every kind of coastal feature. English Nature consequently undertook research to explore the various options available in pursuit of its objective of reversing damage wherever possible so as to maintain habitats and natural features "at least equivalent to their present distribution (1992) and in a sustainable condition" (English Nature, 1992).

3.3.19. Recognising the pressures on the coast, English Nature consider that, in order to plan future use of the coast in such a way as to maintain and enhance natural features, planning mechanisms need to be supported by a general policy advocating the wise and sustainable use of coastal resources. In its evidence to the House of Commons Committee, English Nature therefore put forward three broad policies which it considered should be adopted. These policies are derived from ten more detailed recommendations. They argue that decisions should only be taken after the environmental consequences have been fully assessed, that further legal and administrative measures are required in order to effectively conserve important marine sites and that a national and regional policy framework is required, backed up by local strategies to ensure that the coast is appropriately and sensitively managed.

3.3.20. The **Countryside Commission** is an independent public body established, under the Countryside Act 1968, to promote the conservation and enhancement of the natural beauty of the English countryside. It has a special responsibility for advising government and Parliament on countryside issues.

3.3.21. The Commission identifies a number of pressures on the coastal zone which have previously been mentioned and draws particular attention to some of the new issues raised by proposals to exploit renewable energy resources at coastal locations, such as for tidal barrages and wind farms. These pressures threaten the Commission's principal aim of conserving the undeveloped coastline and it therefore considers that new approaches are required in three main areas. These are "The provision of a national strategic policy framework; improved procedures for the control of development in the coastal zone; a review of responsibilities among the many organisations with an interest in the coastal zone to reduce any unnecessary duplication of responsibilities and with a view to improving co-ordination" (House of Commons, 1992). Furthermore, establishment of local fora for each coastal unit is advocated, with a national committee of all key interests to ensure effective co-ordination at this level. The Commission considers that, with regard to coastal protection and sea defence issues, a simplification of current arrangements is the best way to achieve better coordination. In this

respect it is suggested that the NRA is given all responsibility for such matters so that the works required for extensive stretches of coastline can be planned on a wider basis.

3.4 RECREATION

3.4.1. Many organisations have acknowledged that the demand for recreation facilities is a major pressure on coastal zone resources, particularly in estuaries where the result has been a considerable loss of characteristic areas of upper tidal flats and saltmarshes. Rising affluence, greater mobility and more leisure time have increased participation in all kinds of water sports and activities (Sports Council, 1991b). Whilst the ecological effects of recreation have been acknowledged for a considerable time (Speight, 1973), these factors have led to increasing conflict between marine uses, between recreation and conservation, different recreation activities, fisheries and recreation and between commercial and leisure craft.

3.4.2. The many governing bodies of the sports and other activities involved have therefore been concerned to support their members interests. The resulting research has indicated the importance of identifying the particular problem areas and establishing a mechanism which will involve all interested parties in discussions to achieve a balance between conflicting uses.

3.4.3. The **Sports Council**, as a statutory body, works to provide facilities and promote participation in and enjoyment of sporting activities throughout the country. It operates through regional councils and is concerned with the whole range of land and water based pursuits. The process for re-notification of SSSI'S required by the Wildlife and Countryside Act 1981 brought to light a number of concerns about the impact of sporting activities on wildlife. The Sports Council and the Countryside Commission, with the support of the Nature Conservancy Council, therefore sponsored research to assess these impacts and also to investigate instances of cooperation between sports and conservation interests (Sports Council, 1988). This research indicated that the main pressures were in the south and east of Britain, involving water recreation where the conflicts were localised and needed to be put into the wider perspective

of total habitat loss. However, the need for an overall framework for balancing conflicting uses, especially where the sites were of particular value to both sets of interests, was clearly identified.

3.5 POLLUTION/WATER QUALITY

3.5.1. The **National Rivers Authority (NRA)** has ten regions in England and Wales and was established under the Water Act 1989 as a Non-Departmental Public Body sponsored by the Department of the Environment. The Water Act (Section 8(1)) requires the NRA to promote conservation and enhancement of the natural beauty and amenity of inland and coastal waters and of land associated with such waters in carrying out its responsibilities. In addition to its important functions under flood defence and water quality legislation, the NRA undertakes important research into coastal dynamics to improve understanding of coastal processes. The legislation and number of monitoring bodies is extensive and therefore informal working arrangements have been developed to promote cooperation. Last December the government published Circular 30/92 entitled 'Development in Flood Risk Areas'. This addressed one of the NRA'S main concerns in that it imposes the requirement for local planning authorities to explain their reasons if they intend to reject or ignore advice given in respect of particular types of proposed development.

3.5.2. The NRA is required to work closely with many other organisations in carrying out its functions, particularly with the maritime authorities and is a statutory consultee under the Coast Protection Act 1949 in respect of some coast protection works. However, in other areas where it has responsibilities, for instance maintaining and improving water quality in controlled waters, it has no powers to control many of the activities which take place. The NRA considers that the extension of local authority jurisdiction to the limit of controlled waters would be beneficial in this respect. It also supports the zoning of sea uses as a way of reconciling the different uses and achieving water quality objectives.

3.6 COAST PROTECTION / SEA DEFENCE

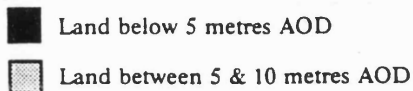
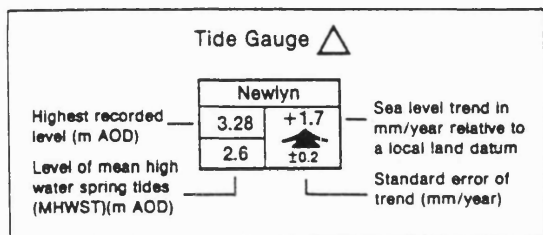
3.6.1. In July 1989 The Ministry of Agriculture, Fisheries and Food circulated to the relevant authorities a strategy to respond to the impact of the Greenhouse Effect. This strategy put forward best practice for coastal defences on the basis of the current predictions of sea level rise, whilst acknowledging that future modification would be required as better predictions became available. The Intergovernmental Panel on Climate Change (IPCC), which was established by the United Nations Environmental Programme (UNEP) and the World Meteorological Organisation (WMO), have since predicted global sea level rise for various scenarios. The IPCC "Best Estimate trend" is widely accepted as being most appropriate at this time. Predictions are also available of earth crustal movements in Great Britain. MAFF has issued allowances for the design of coastal defences based on a combination of these predictions, as follows:

NRA REGION	ALLOWANCE
Anglian, Thames, Southern	6mm/year
North West, Northumbria	4mm/year
Remainder	5mm/year

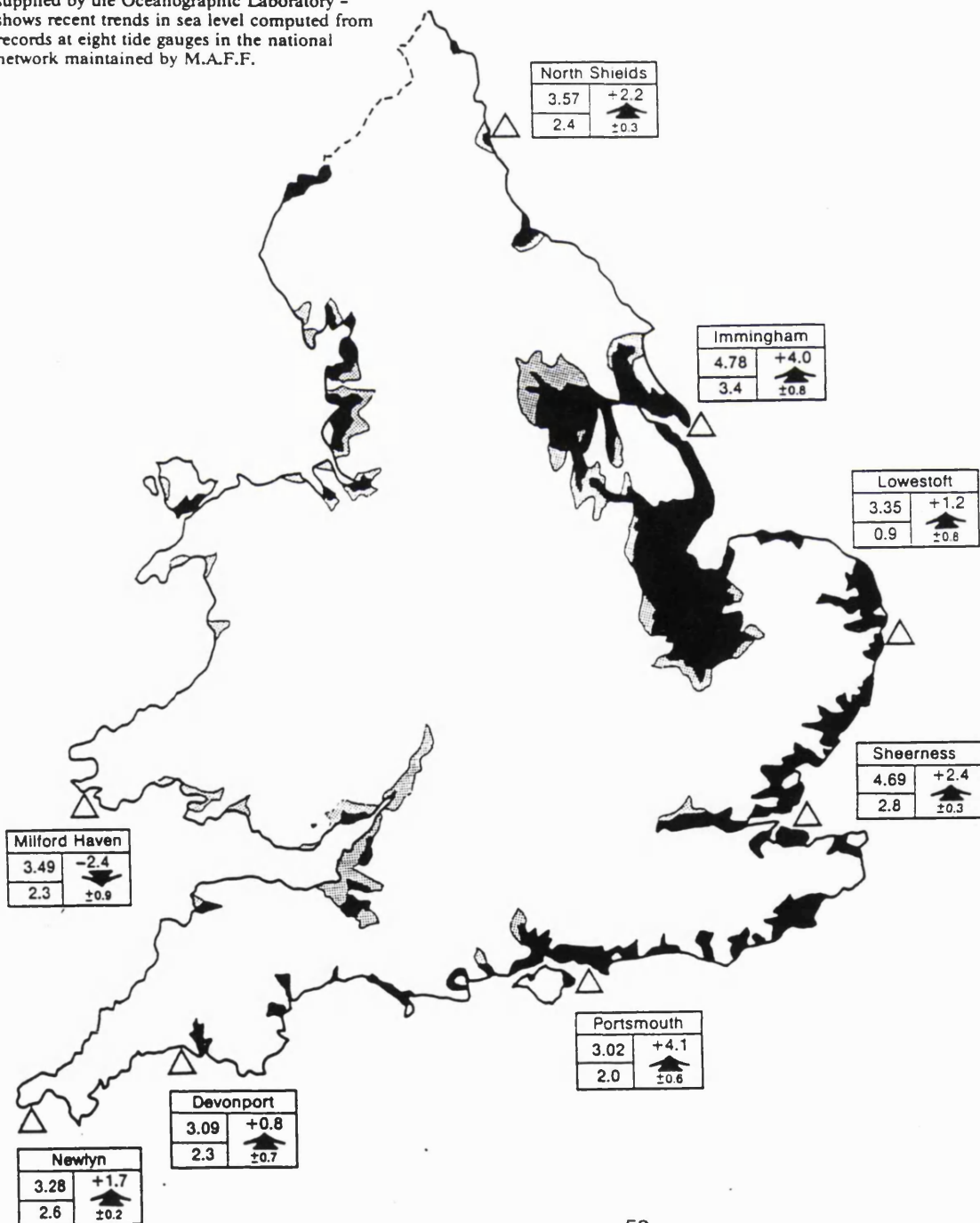
Where defences have an expected life beyond 2030, the design will be required to allow for changes in these predictions in the future. Figure 2 gives an illustration of the areas most at risk.

FIGURE 2

High Risk Areas



The boxed information on this map - supplied by the Oceanographic Laboratory - shows recent trends in sea level computed from records at eight tide gauges in the national network maintained by M.A.F.F.



3.6.2 In its recent publication referred to earlier, English Nature (English Nature, 1992) looked at various alternative scenarios, such as managed retreat, which may be possible alternatives to maintaining existing defences, in order to protect natural habitats.

3.6.3 The **Institution of Civil Engineers** is a body with considerable expertise in coastal engineering which has recognised a growing need over a period of five years or more for research in a number of areas regarding coordination of the present arrangements for protecting the coastal zone. Several reports in recent years have highlighted the problems facing engineers (Institution of Civil Engineers, 1990, 1991). The survey on storm damage concluded that more than 50 per cent of the defences had proved to be inadequate to resist the attack of the four major storms occurring in the winter of 1989/90. Considerable damage was also caused to roads, land, property and possessions. The NRA'S Sea Defence Survey (Phase 1, 1990-1991) also states that 29 per cent of their defences are fronted by an eroding foreshore.

3.6.4. The Institution views the coastal zone as comprising the foreshore and the nearshore area, together with areas where leisure activities, construction or industry has an impact on the shoreline and, on the landward side, areas likely to be either directly or indirectly affected by coast erosion or inundation. Within this whole area there is a need for long-term planning and management through liaison between engineers, planners, developers, conservationists and environmentalists in order to avoid or resolve conflicts of interest. The Institute considers that a national strategy is required and that "steps should be taken to coordinate the many diverse interests in the coastal zone, and to rectify a number of anomalies which operate against the development of comprehensive coastal plans" (House of Commons, 1992). The initiative should be taken by a central government lead authority, whilst the Regional Coastal Groups which are already established in many areas of England and Wales, if recognised and supported as such, are best placed to provide regional management. An essential pre-requisite to effective planning and management is a sound knowledge of physical processes such as that undertaken in the Anglian Sea Defence Management Study which looked at 750km of coastline in south-east England with a view to developing a strategy for coastal protection and sea defence (Fleming & Townend, 1989).

3.6.5. The **Natural Environment Research Council (NERC)** aims to advance understanding of the natural environment and the processes of environmental change and to predict future change. It supports much strategic research and survey in the coastal zone in its own Institutes and Higher Education Institutes and undertakes strategic and applied research on commission from private and public sector bodies. Recognising that the coastal zone is a dynamic and interactive system, the NERC believes that the key to effective coastal zone planning lies in an accurate and up-to-date understanding of the processes at work and our ability to predict the scale and rate of the biological changes which are a result of the exploitation of living resources and recreational activities. At the present time, "The lack of a focused strategic approach to geological survey of the coastal zone has resulted in a sparseness of geological and geoscientific data for the nearshore region. Surprisingly little is known of the geology of many vulnerable coasts" (House of Commons, 1992). Further research requirements therefore need to be identified to avoid gaps and duplication and the results of such research added to existing knowledge in a coordinated fashion through being brought together within structured and accessible data bases.

3.6.6. The main threats to settlements and ecosystems are flooding and coastal erosion, vertical land movement and sea level rise, pollution and changes to natural habitat through exploitation of both living and non-living resources (National Audit Office, 1992). In all of these areas the NERC considers that a better understanding of the interactions of physical, chemical and biological changes in scale, space and time is required as a basis on which to build effective policies for the planning and management of activities taking place in the coastal zone. The NERC also identifies the complexity of present administrative arrangements, the inappropriateness of political boundaries where natural ecosystems are concerned and the lack of a planning system for sea areas, comparable to that on land, as factors which are prohibitive to effective planning of the coast.

3.7 PHYSICAL OPERATIONS

3.7.1. The British Aggregate Construction Industries (BACMI) and the Sand and Gravel Association (SAGA) are trade associations which represent all the major sand and gravel

dredging companies, covering approximately 98 per cent of dredging for aggregate purposes in United Kingdom waters. It is their view that the current Government View Procedure for licensing marine dredging, which was revised in 1989 following extensive consultations, has failed in that the pre-consultation is unnecessarily complicated leading to delays in issuing licences (House of Commons, 1992b).

3.7.2. Marine aggregate extraction is an area of concern both in this country and in the Netherlands where its impacts on coastal sediment movement are being considered. The Dutch Government has prohibited aggregate extraction within 20km of the coast (Carter, 1988). At home there is concern about the role of the Crown Estate Commissioners in managing this resource, particularly given the large quantities which are removed from the sea-bed each year, at least 25 million tonnes in 1990/91 (House of Commons, 1992). The possible long-term, cumulative effects are a significant cause for concern and it is recognised that a great deal more research is required in order to fully assess the environmental implications of marine sand and gravel extraction.

3.8 SUMMARY

3.8.1. The research has identified a number of common concerns. The most widely cited criticism is that the existing arrangements, contrary to the views expressed by the Department of the Environment, are not preventing the continued loss of valuable areas of the coast. Various reasons are given to explain this situation. It appears that the problems stem from a combination of factors. Firstly, decisions are being made on the basis of inadequate knowledge of the physical processes taking place in the coastal zone. For instance, inappropriate coastal defences can upset the balance of nature over a widespread area which, over a period of time, can lead to the permanent destruction of irreplaceable habitat.

3.8.2. Secondly, no framework exists to ensure that decisions are made in any coordinated manner, or that all relevant factors have been taken into account. Instead, the complexity of

the administrative arrangements is such that there is overlap, confusion and a lack of cooperation between agencies. The point of overriding concern is the lack of a comprehensive, national perspective to guide the planning of the coastal zone in the long term. The absence of a sense of direction and objectives from central government to guide local authorities means that there is no method for integrating the local Coastal Zone Plans which have been produced and no consistency between them.

3.8.3. Many organisations have suggested that a clear national strategy is urgently required. These include the Royal Town Planning Institute, the Marine Conservation Society, the National Trust, the Royal Society for the Protection of Birds, English Nature and the Institution of Civil Engineers. There appears to be agreement that the development and implementation of such a strategy will require an identifiable "unit" responsible for coastal matters. The options for such a unit range from simply adapting existing structures to establishing an entirely independent organisation.

3.8.4. The lack of a planning system for sea areas is a further major cause for concern and the extension of local authority jurisdiction beyond low water mark is seen as a positive measure in this respect. Opinions differ however, as to where the seaward extent of this jurisdiction should end. Implicit in these requirements is the understanding that the definition of the coastal zone should be taken in its widest sense to include all areas affected as a result of the activities described in chapter two.

3.8.5. Whilst opinions vary as to the extent of changes necessary, a unifying feature is the unanimous call for, at the very least, a review of legislation and administrative arrangements in order to rationalise existing procedures. Table 2 lists some of the organisations which have expressed support for the rationalisation of coastal zone planning and management;

TABLE 2. ORGANISATIONS WHICH ADVOCATE A RATIONALISATION OF EXISTING PROCEDURES IN RELATION TO THE PLANNING AND MANAGEMENT OF THE COASTAL ZONE

Association for the Protection of Rural Scotland
Campaign for the Protection of Rural Wales
Centre for Environmental and Economic Development
Council for the Protection of Rural England
County Planning Officers Society
Greenpeace
Heritage Coast Forum
Institution of Civil Engineers
Marine Conservation Society
Marine Forum
National Trust
National Trust for Scotland
Nature Conservancy Council
National Rivers Authority
Royal Institute of Chartered Surveyors
Royal Town Planning Institute
Royal Society for the Encouragement of Arts, Manufactures and Commerce
Royal Society for the Protection of Birds
Tidy Britain Group
World Wide Fund for Nature

CHAPTER FOUR. COASTAL ZONE MANAGEMENT

4.1 HISTORY / DEVELOPMENT OF COASTAL ZONE MANAGEMENT

4.1.1 We have seen in the preceding chapter that the conflicting uses and consequent impact of various activities on coastal resources has increasingly become of concern to a variety of organisations, particularly since the mid 1980's. These problems are not however a recent phenomenon. Throughout history Man has tried, with varying degrees of success, to either control or adjust his behaviour in order to live in harmony with the coast and the different approaches adopted have all been attempts in one form or another at coastal management. It is only comparatively recently however that the management of the coast has been tackled in any coherent or scientific manner. Notwithstanding the re-emergence of increasing concerns in the United Kingdom in the 1980's, the emergence of "coastal zone management" as a concept can be traced back to about 1970 (Mitchell, 1982)

4.2 INTERNATIONAL POSITION

4.2.1. In chapter one the worldwide nature of the problem was highlighted. In 1987 the report of the Brundtland Commission (World Commission on Environment and Development, 1987) warned of the resource implications of failing to adopt an integrated and sustainable approach to the management of both coastal land and waters : "Looking into the next century the Commission is convinced that sustainable development, if not survival itself, depends on significant advances in the management of the oceans". Sustainable development is defined as development which meets present needs without compromising the ability of future generations to meet their own needs. Implicit in this notion is a concern for social equity between generations which must logically be extended to equity within each generation. The major objective of development is to satisfy human needs and aspirations and yet clearly, many developing countries are unable to meet the most basic needs of their populations. The oceans provide valuable resources on which many people depend for their existence. The conservation of these resources through some means of regulating sea use and the many other activities which have an impact on the marine environment, is clearly imperative on a global scale if we are to achieve these aims.

4.2.2. In 1992 we can see that the framework for the international community's programme into the twenty-first century has been set by specific legal measures such as the treaty on biological diversity (UNEP, 1992) and, more recently, by an agenda for action which was established at the UN Conference on Environment and Development (UNCED) held at Rio de Janeiro in June 1992. 'Agenda 21' requires new integrated and precautionary approaches to marine and coastal area management and development at national, subregional, regional and global levels. Charter 17 of UNCED Agenda 21, 'Protection of oceans, all kinds of sea including enclosed and semi-enclosed sea, coastal areas and the protection, rational use and development of their living resources' has the following major programme areas:

- (1) Integrated management and sustainable development of coastal and marine areas, including exclusive economic zones;
- (2) Marine environmental protection;
- (3) Sustainable use and conservation of marine living resources of the high seas;
- (4) Sustainable use and conservation of marine living resources under national jurisdiction;
- (5) Addressing critical uncertainties for the management of the marine environment and climate change;
- (6) Strengthening international (including regional) cooperation and coordination;
- (7) Sustainable development of islands.

4.2.3. The Agenda sets out the objectives which each coastal state should achieve under each programme area. To fulfil these objectives, states will need to consider establishing or strengthening appropriate national coordinating mechanisms, improving their capacity to collect, analyse and use information for sustainable resource use, cooperating in the development of coastal systematic observation, research and information systems, promoting and facilitating the organisation of education and training in integrated coastal and marine management.

4.2.4. In the last two decades, considerable research has been undertaken into the management of uses taking place at sea (e.g. Gubbay, 1989, & Juda and Burroughs, 1990) and, on the international scale, we have seen evidence of increasing activity designed to establish agreements between nations regarding the use of the oceans and the coastal zone. For instance, the United Nations Convention on the Law of the Sea was opened for signature in 1982. The Convention makes it clear that the oceans must be actively managed, although the capacity to do so in offshore areas under national jurisdiction is often lacking. The main purpose was to provide for a balanced allocation of ocean resources between nations, although it is apparent that this approach has not been universally welcomed. When the Convention closed in 1984 it had been signed by 119 coastal nations, but not the USA, UK or West Germany (Juda, 1986).

4.2.5. A system of parallel zones, designed to control and manage national resources has achieved wider acceptance. Thus states exercise complete judicial and legislative control over Territorial Waters which are the innermost zone and are usually three nautical miles wide (about 5.5km). Some states have extended this boundary by imposing a 'contiguous zone', up to 21 nautical miles (38.5km) wide in order to impose various sovereign and legal rights over activities such as smuggling, fishing and waste disposal.

4.2.6. In the 1950's and 1960's these limits began to be extended, up to 200 nautical miles, as nations tried to claim sea-bed mineral and fishing rights, leading to many boundary disputes. The 1982 UNCLOS agreement allows for 200 nautical mile Exclusive Economic Zones (EEZ's) which gives countries the right to control resources over the continental shelf, but allows sharing where applicable. EEZ status gives rights to fly or sail across these areas (Ngantcha, 1990). In Western Europe the position is complicated by the EC's Common Fisheries Policy (1976) which provides for Exclusive Fishing Zones (EFZ's) within which member states control fish resources but on a quota basis (Couper, 1985). The location of the exact boundaries has been a source of dispute between some member states.

4.3 EUROPEAN ECONOMIC COMMUNITY AND COASTAL ZONE MANAGEMENT

4.3.1. The objectives of the European Community as stated in the amended Treaty of Rome are to preserve, protect and improve the quality of the environment; to contribute towards protecting human health; and to ensure a prudent and rational utilisation of natural resources. In 1981 a first tentative step in respect of coastal issues was taken with the publication of the European Coastal Charter and ensuing action programme, although this was not followed up by any specific action in practice. In the ensuing period the Commission of the European Communities has issued a number of Directives (appendix A) which, whilst they do not relate specifically to the coastal zone, nevertheless have force within that zone. However, despite statements alluding to the threats to the European coastal zone over the last twenty years, until last year the European Community had achieved little coordinated action on coastal matters and responsibility for coastal issues remains split between the Directorate Generals.

4.3.2. Pressure over the last year to consider a coastal zone strategy was evident in the organisation of two major workshops at Poole and in the Netherlands. The first, in April 1991, produced a further definition of the coastal zone (appendix D), agreed by delegates from 11 member countries of the European Community, together with Sweden at a European Workshop held at Poole. The definition of what constitutes the coastal zone has been a source of considerable debate. This particular definition does not employ precise geographical limits, as it was concluded that the range of socio-economic issues and natural processes affecting the coastlines of Europe prohibit a standard definition which could be applied to any coastal zone. The purpose of the workshop was to prepare and agree upon a proposal of priorities and an agenda for action within the European Community and its neighbouring countries. The Workshop resulted in an agreed "Communication" from the participants with proposals for action at the European and National levels. At its meeting in June 1991 the Commission endorsed the Communication.

4.3.3. On 25th February 1992, the Council of the European Commission issued a Resolution regarding future community policy concerning coastal zone management (92/C 59/01). This Resolution invites the Commission to (1) propose for consideration a Community strategy for

integrated coastal zone management which will provide a framework for conservation and sustainable use and (2) incorporate this initiative into the Fifth Environmental Action Programme. Throughout the Resolution there is a predominant theme of conservation, linked by implication with sustainable use, although reality has shown that in the highly dynamic coastal zone this is not always the case.

4.3.4. Whilst it has long been predicted that the European Community would take a lead in promoting initiatives towards integrated coastal zone management, since the announcement of the Resolution, there has been little observable movement towards a strategy at the European level. Obviously, other EC policies such as the economic, transport and fisheries policies have relevance to the coastal zone and provide a context for any integrated strategy. However, there is an immense variation in the level and intensity of development along the European coast which adds considerably to the complexity in producing an integrated strategy. The contrast is extremely apparent between the northern countries in which planning systems have been established and where the emphasis now lies on quality enhancement and the southern states where development and urbanisation are rapid and require financial assistance. The recent seminars have established that there is a long way to go before such a strategy is agreed and then implemented in the member states. The U.K. has a great deal to offer in promoting and refining any such strategy based on experiences gained here.

4.4 NATIONAL INITIATIVES

4.4.1. In the light of increasing demands on coastal resources, several countries have devised their own methods of coastal management. In many of these countries it is apparent that, in the past, coastal management has been weighted towards exploiting economic opportunities at the expense of environmental considerations, which have received low political priority (Carter, 1988). Clearly, the position is changing in many countries as environmentalist concerns attract more votes.

4.4.2. In many nations, crossing the boundary between land and sea involves a change in jurisdiction, control of activities on land often being vested in regional or provincial authorities,

whilst that of the sea usually rests with the State for strategic reasons. A common consequence is therefore inconsistency in the aims and objectives of neighbouring authorities. Coastal Zone Management is seen as a possible way to achieve an integrated national policy and frequently results in the agglomeration of several authorities to form one overall agency, empowered to act in all situations. A common variation is to have one 'lead agency' to coordinate and sanction all activities. A unifying feature is that coasts traditionally have not been recognised as entities legally and their management has therefore been undertaken by many different agencies on the basis of mostly non-specific legislation and powers.

4.4.3. The management programmes which have been developed can mostly be classified as either positive or negative in nature (Carter, 1988). Restraint, imposed directly through legislation or indirectly through disincentives, forms the basis for negative control systems where the developer generally must show that there is a need for a particular development before it can proceed. The more positive systems are designed to encourage development, within a highly regulated framework, whilst attempting at the same time to impose specified standards of management. In this way positive systems of coastal management try to allow developments to create demand rather than simply satisfying it. In most 'developed' countries coastal management initiatives fall into the former category.

4.4.4. The approach used in Britain, which is often one of reaction to change and problems as they occur, is commonly found throughout the world. Some essentially negative programmes have positive elements, such as zones set aside for development, which aim to provide a focus for development opportunities thereby reducing pressure on other, more sensitive, areas. Examples of the purely positive system are only found in developing countries, such as Sri Lanka where the tourism potential of the coast to generate foreign exchange is the overriding economic consideration (Mitchell, 1982). The American and French programmes follow the combination approach (Carter, 1988).

4.4.5. Given that the problems encountered in managing coastal resources throughout the world are often substantially similar, it is unsurprising to find that there are similarities in the way that

management issues are tackled, although emphases and objectives vary widely. Many of the differences in approach are determined by the requirement of any new system to fit into existing frameworks. Table 3 illustrates the wide variation in the way that landward and seaward boundaries are defined for the purposes of coastal zone management programmes. The British and U.S. approaches have been contrasted, particularly coastal erosion aspects (Ricketts, 1986). It appears that the methods adopted in these countries are the two dominant models. The American model involves "specific CZM legislation, and the formation of cost-centred decision-making agencies" and the British model "concocts policy and practice out of existing procedural structures" (Carter, 1988). The following sections look briefly at the initiatives undertaken in a number of countries.

TABLE 3. LANDWARD AND SEAWARD BOUNDARIES OF COASTAL ZONE MANAGEMENT PROGRAMMES

<u>COUNTRY/STATE</u>	<u>LANDWARD BOUNDARY</u>	<u>SEAWARD</u>
California	Variable depending on issue	3nm from Baseline
Costa Rica	200mm from Mean High Tide	Mean Low Tide
China	10km from Mean High Tide	15m depth contour
Ecuador	Variable depending on issue	
Israel	1-2km depending on resources & environment	500m from Mean Low Tide
Queensland	400m from Mean High Tide	3nm from Baseline
South Africa	1000m from Mean High Tide	
South Australia	100m from Mean High Tide	3nm from Baseline
Spain	500m from highest storm or Tide Line	12nm
Sri Lanka	300nm from Mean High Tide	2km from Mean Low Tide
Washington	Inland boundary of coastal Counties	2nm from Baseline

(From Sorensen & McCreary, 1990)

4.5 THE UNITED STATES

4.5.1 Early attempts at coastal zone management were predominantly interventionist and came as a result of increasing pressure on coastal resources due largely to increasing population concentrations at the coast since 1950. Private ownership of much of the foreshore, coupled with over-eager developers led to the loss of much of the natural habitat to make way for new building. The larger population in turn caused a number of related environmental problems, relating to water and air standards, sediment pollution, shoreline erosion and loss of aesthetic quality which unbalanced the fragile ecosystem and gave rise to increasing public concern (Mitchell, 1982). This concern resulted in the passing of a variety of legislation at both federal and state level which addressed particular issues rather than coastal management as a whole. Legislation to protect marine species, habitats and water quality includes the Clean Water Act, the Marine Protection, Research and Sanctuaries Act of 1972, the Ocean Dumping Act, the Marine Mammal Protection Act 1972, the Fishery Conservation and Management Act 1976 and the National Ocean Pollution Planning Act.

4.5.2. Prior to 1970 some States had long-established legislation governing coastal management, although equally many did not. However, the need for consistency between States to deal with the increasing complexity of problems of resource degradation and user conflict generated political pressure to rationalise and improve the situation and resulted in the passing of the Coastal Zone Management Act 1972. The Act contained recommendations on public participation and urban waterfront renewal, authorised and funded the establishment of coastal zone management programmes in all coastal states and had four main objectives:

- (i) To protect fragile coasts (reefs, wetlands, lagoons etc);
- (ii) to minimise life and property loss from coastal hazards;
- (iii) to create better conditions for coastal resource use, especially in terms of access for recreation; and
- (iv) to promote inter-governmental cooperation through policy and procedural standardisation, leading, hopefully to a reduction in bureaucracy.

4.5.3. The Act formalised these four objectives, setting the scene for a higher priority to be given to coastal management issues and put in place the means by which to take action. In 1983 the United States also declared its Exclusive Economic Zone, further demonstrating the importance being placed on marine resources (Gubbay, 1989). Both these initiatives have resulted in increased management of human activities in all parts of the coastal zone.

4.5.4. The Coastal Zone Management Act (CZMA) divided responsibilities between the federal and state governments, the former setting the general policies and management guidelines and the latter, in conjunction with local governments, developing and implementing local plans. Thus the agreement of a national policy provided the wider framework within which detailed consideration could be given to the specific policies and methods of implementation required in order to address the particular issues of each locality. The Act was administered by the Federal Office of Coastal Zone Management (OCZM) set up by the US Department of Commerce. Federal government grants could be allocated to assist States in devising their own CZMA programmes which were submitted to the OCZM for evaluation and approval.

4.5.5. Some critics of the Act viewed it as a conservation measure which failed to achieve its stated objectives through trying to appease all parties (Elipoulos, 1982). Others felt that too much power had been passed down to the local level, resulting in inconsistencies (Chamberlain, 1979). Alterations made during subsequent amendments aimed to correct some of these deficiencies. The programme came under increasing pressure when the incoming Reagan administration proposed to remove Federal support, partly on the basis that the objectives had been met, but ostensibly to save money (Galloway, 1982). Congress re-authorised the CZMA in late 1985 for a further five years.

4.5.6. However, progress has been made and the Act served the vital purpose of making an integrated approach to the management of the coastline, incorporating both control of development and protection of natural resources, a priority. The purpose of such a strategy was to provide an understanding of a wide range of issues such as multiple uses, resource management, waste management, coastal mineral resources, agricultural development and

environmental management. The ensuing programme for coastal management was required to take account of the action and interaction of physical, social, economic, environmental and ecological factors in terms of their effect on the functioning of the overall environment.

4.5.7. A number of commentators have written accounts of the practical successes of the system (Knetch, 1979, Elipoulos, 1982, Mitchell, 1982 and Chasis, 1985). These clearly show the level of both practical and procedural activity which the Act has generated, evidenced in the fact that all 35 coastal states have been involved, although some have since withdrawn. The State plans which have been approved exhibit a mixture of old and new legislation, coordinated through a central executive or a lead agency. Each plan is necessarily targeted to address the issues relevant to each particular state and some critics have claimed that, as a consequence of this and the differences in interpreting the provisions of the CZMA, there is little overall consistency at the Federal level (Carter, 1988). The Californian Coastal Commission and the Massachusetts State Office of Coastal Management provide examples of situations where emphasis has been placed on land-based resources with limited attention being given to sea-related issues. The recognition of some of these limitations has prompted more recent inter-state initiatives which relate to agriculture, facility siting, marine sanctuaries, offshore energy requirements, minerals activities and minerals pollution (Hampshire County Council, 1992).

4.5.8. Concurrently, several other government initiatives have been tried in particular fields. Whilst none have had as wide an effect as the CZMA, some complemented and some conflicted with its objectives. One response to this increased level of central activity has been the increase in the number of pressure groups whose function tends to be the monitoring of Federal and State activities, in contrast to the situation in Britain where similar groups are involved in the practical aspects of coastal management (Carter 1988). This rise in 'environmentalism' as a reaction to the degradation caused by economic activity has been well documented (O'Riordan, 1977) and is likely to play an increasing role in the twenty-first century as increasing public awareness plus growing scientific knowledge has a continuing influence on management. In terms of coastal projects, the US National Environmental Policy Act in 1970 is a significant

milestone and led the way for the requirement for major development proposals to be accompanied by an assessment of their environmental implications.

4.6 THE NETHERLANDS

4.6.1 The Netherlands Government has carried out an extensive policy analysis and adopted a national strategy in relation to the maintenance of the coastline. Legislation lays down national standards for coastal defence systems and requires the setting up of a technical advisory board. Due to its particular physical characteristics, large areas of this country are subject to flooding and this has given coastal management, particularly in relation to coastal defence issues, a high priority with a great deal of time and money being invested in preserving the shoreline (Gubbay, 1989).

4.6.2. The Dutch CZM programme is based on strong government control with almost all vulnerable coastal areas being State owned and managed. A long-standing central body is responsible for policy coordination and implementation, integrating all the many diverse aspects of water management, from domestic water supply to navigation and shoreline erosion. Responsibility is placed on the relevant Minister to monitor, plan, finance and execute these policy measures. The approach has been to harmonise policies by using inter-departmental groups, appeals procedures and participation by non-government interest groups (Hampshire County Council, 1992). Increasing emphasis has been placed on operational coordination and the national perspective provides a top down framework for management policies to be implemented at lower levels.

4.6.3. Operations to reclaim land and provide protection from the sea have been taking place since the Middle Ages (Knights, 1979), although with increasing intensity this century. The successful completion of extensive schemes, such as that to construct an encircling coastal barrier in the North Sea and close the mouths of the Rhine/Scheldt estuary involved close cooperation between engineers and ecologists. In recent years attention has turned to the Wadden Sea in the north where considerable research was undertaken, following the appointment of a Commission in 1970 (Vruegdenhil, 1984), to prepare a CZM master plan for

the area. The Dutch Government extended judicial boundaries seaward, so bringing the sea under statutory control, in order to facilitate this process.

4.7 FRANCE

4.7.1 The situation in France is not dissimilar to that in Britain to the extent that what has evolved over a long period of time are numerous different agencies at various levels with different powers and responsibilities to operate a system which has many different designations (Carter, 1988). Accusations of excessive bureaucracy have inevitably arisen and critics have concluded that the legal and judicial systems are ineffective (Harrison and Sewell, 1979, Ardagh, 1982).

4.7.2. The coast of France has been subject to a great deal of pressure from development over the last thirty-five years and consequently the primary aim of policies has been to protect the remaining undeveloped areas. Preservation is sought through designation of National or Regional Park status, non-development strips on certain shorelines and laws to allow purchase of some areas of land by the Departements. Two major initiatives have come forward in this time. The first was similar to the 'Heritage Coast' concept in Britain in that it proposed intensive, integrated management to provide and sustain large areas of "natural" coastline for leisure activities. The second was the establishment of the "Conservatoire Cotier" in 1975, a government funded organisation which acquires land, by a variety of methods, for conservation purposes. Whilst it does not have charitable status, it is similar to the National Trust and owns and manages a significant length of the coastline.

4.7.3. A somewhat unique feature of the management of the French coast is the large-scale intervention of the government, for economic reasons, in coastal recreation management. In response to increasing competition the government has attempted to expand and diversify coastal tourism through the construction of new resorts, such as has happened in Languedoc, on the western Mediterranean coast. The exercise is to be repeated in the Landes on the southwest Atlantic coast where another inter-ministry initiative has set up nine coastal management units along the shoreline.

4.8 AUSTRALIA

4.8.1 Eighty-three per cent of Australia's population lives near the coast, twenty-five per cent within three kilometres (Carter, 1988). The six States have tackled the increasing pressures which this has brought individually, since there is no national programme for the management of the coast (Cullen, 1982), although a central coastal data base is available. State laws to allow the establishment of councils to coordinate integrated coastal management programmes have occurred in four States. The councils are able to undertake research and analysis, formulate policy and monitor progress in practice, although the decision making functions are largely retained by the State Governments.

4.8.2. The New South Wales Coastline Hazard Policy 1989 is one initiative. It was approved by Cabinet in 1988 and one of its key elements is a manual which provides guidance to local government and others involved in coastline development and the management of coastal hazards.

4.8.3. Another example is in Queensland where the Beach Protection Authority was set up in 1969 to look at problems of shore erosion due to tropical cyclones (Gale, 1979). This is a positive lead authority and its duties include giving advice, carrying out investigations and disseminating information, conducting programmes to collect data on national resources, implementing long term wave recording programmes, carrying out consultations on any proposed planning scheme in erosion prone areas and defining buffer zones in erosion prone areas. Thus the Authority advises the State in designating erosion control districts which are the subject of a strategic planning process aimed at tackling the erosion problem. Whilst these indicate that a definite policy is being followed, the only influence the Authority has on decision-making is through the quality of its technical advice since it has limited financial or regulatory powers.

4.8.4. Also in Queensland, the Great Barrier Reef Marine Park is an example of joint administration between the federal and State Governments with the State Government holding the role of lead agency. The Marine Park Act established a Marine Park Authority and sets out

guidelines for the management of the park. Zoning plans are prepared for sections of the reef and these override any conflicting state or commonwealth legislation, except where navigation is concerned (Hampshire County Council, 1992). Coastal initiatives are often based on experiences imported from abroad and, without an overall national strategy, they vary greatly from state to state in their enthusiasm and commitment.

4.9 NEW ZEALAND

4.9.1. The Resource Management Act came into force in 1991, incorporating 45 existing pieces of legislation, and now integrates all the necessary controls for coastal planning, based on the principle of sustainable management. The new system of coastal plans covering the entire coastline and national waters replaces the previous non-statutory harbour plans and statutory maritime planning schemes for selected areas (Hampshire County Council, 1992). Regional government agencies are responsible for the preparation of regional plans and the control of development within that area, extending from the line of mean high water springs to the limit of the territorial sea.

4.9.2. The Act requires national and regional policy statements to be prepared. Regional plans must also be produced by the regional coastal planning authority, which is responsible for activities below mean high water springs, to coordinate its actions with those of the district planning authority responsible for land-based activities.

4.10 CANADA

4.10.1 Canada has no national programme to manage its long and diverse coastline, which ranges from vast and inaccessible wilderness to areas highly pressurised by a number of activities which are extremely important to the nation's economy. Some studies have been undertaken into specific issues, such as coast erosion around the Great Lakes whilst considerable time has been spent analysing the procedural difficulties in implementing an integrated system of coastal management (Parkes, 1980). The Canadian Council of Resource and Environmental Ministries (CCREM) held a national conference in 1979 and identified five

priorities for instigating such a system which consisted mainly of clearing legal and judicial obstacles and identifying lead agencies.

4.11. ISRAEL

4.11.1 The coastline has a major role to play in the life of this nation. Both the Mediterranean and Red Sea coasts have experienced considerable development in recent years as the tourist industry has flourished. The National Board for Planning and Building ordered an integrated coastal plan in 1970, which was finally approved for the Mediterranean coast in 1981. Many of the ensuing coastal problems derive from the inconsistencies which have resulted from the fact that this plan only concerns the landward part of the coastal zone, with the sea being administered separately, and to a lack of coordination between those responsible (Brachya et al., 1984). The coastal management structure which has evolved incorporates both American and British practices, whilst the nature of the planning system is predominantly British in that local authorities implement strategic plans (Amiran, 1978).

4.12 SUMMARY

4.12.1. In the past there have been no firm guidelines at an international level to provide a common emphasis to the way individual nations approach the management of their coastal zones. Whilst agreements have been reached on various specific issues, such as the objectives agreed by the European Community on water quality, it has generally been left to individual nations to implement and monitor the situation in practice. We have seen that, on the whole, the coastal management initiatives of many nations can be placed into one of two categories which can be identified as exhibiting the primary characteristics of either the American or British approaches.

4.12.2. The former model places coastal issues within a single legislative, procedural and administrative system, although it is not dominated by any single agency. This involves stepping outside existing structures to solve complex, multidisciplinary problems. The British approach, conversely has been to simply tackle coastal issues within established frameworks and offices,

with several uncoordinated agencies being interested in each stretch of coast which has inevitably led to conflicts. The similar system adopted in France has suffered from the same criticisms as those levelled at the British approach. In these countries, commentators have observed that, whilst there is a great deal of legislation covering coastal issues, little has actually been achieved in practice (Carter, 1988)

4.12.3. Various other options have been pursued which combine some of the features of the two extremes, introducing coordinating councils or lead agencies to provide a central focus. However, their influence has tended to be in the realms of policy deliberation and the provision of technical knowledge and skills since their lack of statutory or even executive decision-making powers means that they are unable to provide funding. Lack of adequate finance, bureaucratic inflexibility and absence of cooperation and consistency between agencies and projects have characterised many of these initiatives. Political backing and the support of the general public has been absent.

4.12.4. It will be noted that the majority of coastal management programmes discussed relate to developed nations since the developing nations commonly have insufficient time or resources to devote to such issues, responding instead to problems as they arise. Nevertheless research suggests that a number of these countries have an awareness of the issues involved (Mitchell, 1982) although where some evidence of management exists, it is directed towards issues affecting human health and economic prosperity.

4.12.5. In a number of countries, the provision of a basic framework forms the first step in the process, accompanied by techniques to implement planning and management initiatives. In many of these countries a first vital step in this process has been the passing of specific legislation requiring agencies to coordinate on coastal issues. This clarifies the legal position and provides the incentive for the consideration of detailed, often non-statutory, policies to provide guidelines for local or regional initiatives. Zoning, to separate conflicting uses, has been one of the most widely used tools in attempting to achieve a balance between activities along the coast.

CHAPTER FIVE: COASTAL ZONE MANAGEMENT IN THE UNITED KINGDOM

5.1 COASTAL PLANNING AND MANAGEMENT DEFINED

5.1.1. Whilst much has been written in general terms which clearly links these two processes, coastal planning and coastal management are in fact entirely separate phenomena. It is as well at this stage to differentiate between the two.

5.1.2. Coastal planning is controlled specifically through the operation of the statutory planning system, the legislative background for which comes principally from the Town and Country Act 1990, as subsequently amended by the Planning and Compensation Act 1991. This system attempts to guide the development and use of land on the basis of countrywide development plans which set out policies in respect of various types of development. Applications for planning permission to develop land are considered against such policies and after taking into account all material considerations, including supplementary guidance from central government, commonly in the form of circulars and planning policy guidance notes. The planning system can therefore play a part in the management of activities along the coastline by influencing the manner and location of new development.

5.1.3. However, this represents only a part of the overall **management** of the coastal zone which is necessarily much wider in scope than simply land use considerations. Management involves many other activities, which may have a basis in other local authority functions and powers or may be controlled by some other agency or authority. Table 4 lists a number of tasks necessary in the fields of planning, regulation and management on a wider scale which illustrate that many of the requirements lie outside the scope of the planning system.

TABLE 4 : TASKS RELEVANT TO THE PLANNING, REGULATION AND MANAGEMENT OF THE COASTAL ZONE

A) CONSERVATION AND PROTECTION OF FRAGILE AND/OR RARE ENVIRONMENTS -

through legislation and/or purchase such as the British National Trust or the French Conservatoire du Littoral, especially of estuaries, wetlands and dune areas.

B) PROMOTION OF 'NON-DESTRUCTIVE' USES OF THE COASTAL ZONE

which enhance its quality and attractiveness to visit, such as educational and recreational uses through the establishment of natural parks, trails and footpaths and information centres.

C) ELIMINATION OF WASTE DISPOSAL OPERATIONS

D) PROTECTION AGAINST EROSION IN CRITICAL AREAS

includes actions to stabilise beaches and dunes and a range of methods to counteract erosion, from managed retreat to newer forms of sea defences.

E) EXPLOITATION OF MINERAL RESOURCES

determination of appropriate on and off-shore areas and regulation of these activities.

F) REGULATION OF NEW DEVELOPMENT ALONG THE COAST

especially marinas and other constructions which affect the dynamics of the whole coast.

G) PLANNING AND DEVELOPMENT OF MARICULTURE

H) DETERMINATION AND REGULATION OF ACCEPTABLE FISH CATCHES IN THE DIFFERENT FISHING GROUNDS

I) EVALUATION OF NATURAL HAZARDS

organisation of preventive and corrective actions to minimise damage.

J) PRESERVATION OF HIGH QUALITY SOILS FOR AGRICULTURE

K) ENVIRONMENTAL IMPACT ASSESSMENT

before permitting new works and development and monitoring during and after implementation.

L) INFORMATION AND EDUCATION

programmes to promote awareness in the general public of the need to protect this vital and delicate zone and to promote cooperation in conservation and management actions.

5.1.4. The planning system is therefore only one system of control operating within this zone. A complex legislative and procedural framework exists to tie it in with other systems which aim to control and regulate the many other activities as discussed in chapter two. Whilst these systems operate independently of each other it is apparent that they are inextricably linked in that policies formulated and decisions made in one sphere can have a direct effect on another.

5.1.5. Local authorities have become increasingly aware that activities taking place at sea or on the sea bed, which are currently outside their jurisdiction, are causing conflict between different interest groups and between the organisations which carry the responsibility for the regulation of such activities. These conflicts have been fuelled by the growing number and diversity of developments and their capacity to affect the whole range of resources in evidence in the coastal zone. These increasing pressures have prompted many of the organisations to question the manner in which the coastal zone is presently managed. Chapter three illustrated the diversity of these agencies and outlined the nature of research undertaken by them, within their own specialist fields.

5.1.6. Chapter four described how the ideas behind coastal zone management have been investigated and researched in a number of countries throughout the world, in the last twenty years. In this country also, concern about the management of activities taking place in the coastal zone has been evident for some time (appendix E identifies key dates for coastal planning), although this concern has not been translated into action on the ground. Growing development pressures in the 1980's brought to light many instances of the inability of the current system to adequately protect some of the more sensitive sites, as discussed in chapter three. These pressures gave fresh impetus to the growing body of opinion which advocated an integrated system of planning and management as the only way to satisfactorily achieve a balance between conflicting requirements in the coastal zone.

5.1.7. Since this time, a small number of research projects have been carried out in an attempt to further the debate and identify the circumstances necessary for effective coastal zone management in the United Kingdom. A considerable amount more is currently in progress. Much of that which has so far been completed has been undertaken by one organisation in particular, the Marine Conservation Society. The need for some form of planning or management framework to deal with conflicts and protect the marine environment is seen as a matter of urgent concern. The importance of an appropriate regime for controlling activities taking place at sea was stressed earlier and has been addressed at the global scale (World Commission on Environment and Development, 1987). The next section describes some of the recent work undertaken by this organisation and highlights the major issues. The British Association for Nature Conservationists have also produced a critique of current management practices (BANC, 1991).

5.2 PREVIOUS RESEARCH INTO CZM

5.2.1. In 1990, a paper was presented at the Marine Forum for Environmental issues which summarised the Marine Conservation Society's view of the situation at that time (North Sea Report, 1990). This paper acknowledged that, whilst the need for integrated coastal and sea use management had been recognised in many countries, the U.K. had not in practice achieved any progress in this area. The absence of any such progress and the adoption of "a local rather

than national perspective to planning, fragmentation of policy and legislation, and inappropriate boundaries for planning" were all identified as areas of concern. These shortcomings have hindered the provision of a comprehensive framework for development which would allow a balance to be struck between different uses of the coast.

5.2.2. It was concluded that, whilst progress was being made in terms of research, there was an urgent need to translate theory into practice and move towards implementing some of the concepts behind Coastal Zone Management. Such moves are essential in order to provide a national perspective of the region and to ensure the best possible maintenance of its value and diverse benefits. Given that increased use of the coastal zone in the future is inevitable, the article recommended the following action:

"i) The idea of a 'coastal zone' comprising land, the intertidal zone, and inshore waters, should be recognised as a discrete unit, requiring special consideration and should be viewed from a national perspective. ii) The U.K. Government should anticipate and support the idea of a national coastal and sea use management plan and work towards the drafting and implementation of such a plan".

5.2.3. In pursuance of these aims the Marine Conservation Society, in conjunction with the World Wide Fund for Nature, published later in 1990 the results of an ongoing research project which aimed to identify the problem areas and investigate where and how the planning and management of the coast could be improved (MCS, 1990). The outcome of interviews with more than forty individuals directly involved in coastal activities, to assess their concerns, formed the basis of a subsequent questionnaire. This questionnaire identified seven different types of activity: coastal engineering and industry, marine recreation, navigation and communication, nature conservation, waste disposal and pollution, fisheries and aquaculture and mineral and energy extraction. Several hundred were sent to individuals working in local and national government, non-government bodies, specialist interest groups and research organisations. The subsequent report was based on an analysis of over two hundred responses, few of which came from government departments.

5.2.4 The report claims to be the first of its kind to address the concerns of a wide range of interests. The trends were identified to give an overall impression of the kind of issues which needed to be addressed, and the urgency required in doing so, in order to improve planning and management in the coastal zone. Whilst the respondents obviously brought up specific issues of relevance within their own fields, it also emerged that there were wider considerations which were common to many interests.

5.2.5 The most widely expressed was the **lack of a national policy or strategy for use of the coastal zone**. A strategic overview to provide some direction in the long-term was widely considered to be required as a matter of urgency. The second major area of common concern was the **lack of a planning regime for areas of sea**. The early introduction of such a regime was considered to be crucial to help balance conflicting uses and demands currently being made on the marine environment and to open up the area to wider public debate. The need for such a system stemmed from the dissatisfaction with the current method of dealing with the marine environment, involving numerous government agencies (appendix B) and the absence of any integration in dealing with coastal activities which affect both land and sea. The report provides examples of problems which have occurred in each of the seven different areas thus highlighting the inadequacies of the current arrangements.

5.2.6. Having identified the principal areas of concern, the document goes on to develop a set of guidelines to provide a framework for a Coastal Zone Management Plan for the United Kingdom which is considered essential to tackle the problems. Strategic planning and an integrated approach to planning and management, based on the principal of environmentally sensitive use, are cited as essential prerequisites and are evident in plans introduced in other countries. The recommendations made (Table 5), taken as a whole and not viewed in isolation, are considered vital ingredients of an effective and successful system.

TABLE 5 : RECOMMENDATIONS FOR A PRACTICAL AND EFFECTIVE SYSTEM OF COASTAL ZONE MANAGEMENT IN THE U.K.

A. **PROMOTION** of environmentally sensitive use of the coastal zone

B. **INTRODUCTION** of primary national legislation for coastal zone management

C. **ESTABLISHMENT** of a coastal zone management unit

D. **IMPLEMENTATION** of national strategic planning for the coastal zone

E. **PREPARATION** of regional coastal zone plans

F. **PROMOTION** of public involvement in coastal zone management, including the formation of a coastal forum in counties and districts

G. **EXTENSION** of local planning authority jurisdiction beyond low water

H. **IMPROVEMENTS** in coastal water quality using national water quality standards and zoning of coastal waters

I. **PRIORITY** for physical planning in intensively used sea areas

J. **RATIONALISATION** of legislation relating to the coastal zone

K. **ESTABLISHMENT** of formal liaison procedures between the coastal management unit and relevant organisations operating outside the coastal zone.

(From Gubbay, 1990)

5.2.7 Subsequent discussion papers (Gubbay, 1991 a,b,c) highlight three major areas of concern where agreement is necessary before progress can be made towards a national approach. Opinions currently differ on what constitutes the "coastal zone"; whether a central coastal zone management unit is required to provide a central focus; and what should be the scale and geographic coverage of coastal planning regions throughout the country.

5.2.8 Appendix D gives an indication of the diversity of definitions in respect of the coastal zone and coastal zone management. There appears to be agreement that the coastal zone should be taken, in its widest sense, to include coastal land, the foreshore comprising the intertidal area and the adjacent coastal waters within which activities have a direct impact on the landward element of the zone. There is clearly no commonly accepted view of how much land and how much sea this should include.

Figure 3 gives an indication of the variety of limits which have been applied. It has been suggested by many that the extent of the zone will vary in order to meet the needs and according to the issues paramount in each individual area. In some countries, for instance Sweden, the situation is further complicated by the establishment of a number of interrelated zones. However, none of these countries has, as yet, produced a framework for integrating all five of the areas identified by the Brundtland Commission as requiring integrated planning and management as part of a wider strategy to promote the sustainable use of the world's resources (World Commission on Environment and Development, 1987). The five areas in question are:

- i) inland areas (inputs via rivers)
- ii) coastal lands
- iii) coastal waters
- iv) offshore waters
- v) high seas

5.2.9. Previous research has indicated the benefits of establishing a particular body with responsibility to liaise and coordinate progress and provide a stimulus for developing and implementing policies in other countries (Gubbay, 1989b). Such a focus provides continuity and evidence of firm commitment in the long term for the aims of coastal zone management. At home a number of local and regional authorities have produced management plans relating to particular sections of the coast. A number of these and other initiatives are listed at appendix G. However, responsibility for coastal matters is split between a huge array of agencies, as seen in chapter two, and no overall strategy exists to determine the criteria on which these plans are produced. Consequently there is no consistency between plans and no formal method of integrating them.

EXAMPLES OF BOUNDARIES WHICH MAY BE USED TO MARK THE LIMITS OF "THE COASTAL ZONE" IN CZM PROGRAMMES

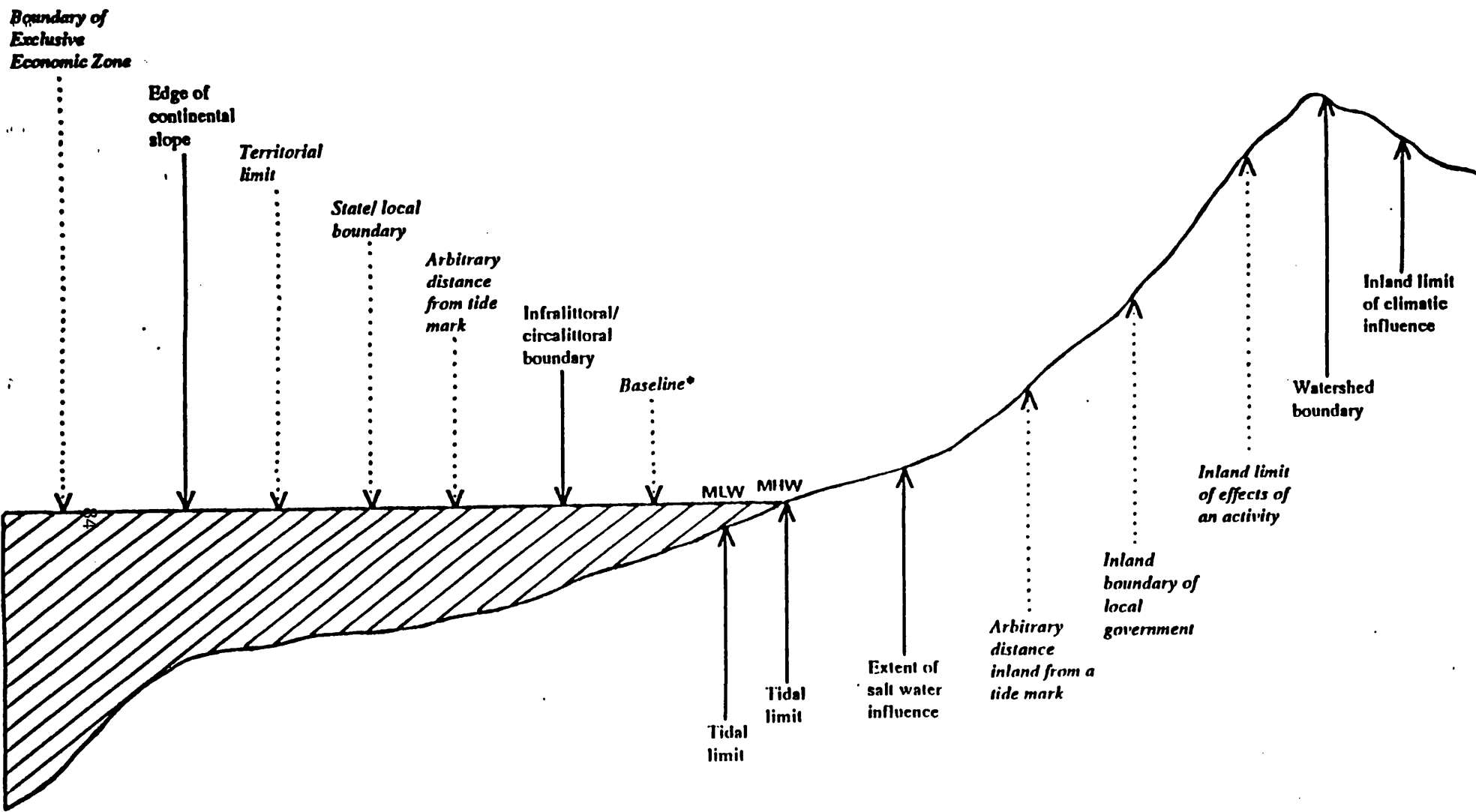


FIGURE 3

←····· Administrative/practical boundaries

← Environmental boundaries

* This often coincides with an environmental boundary

5.2.10. A number of solutions have been put forward and are supported by various bodies. The most popular of these, which have decreasing levels of autonomy, are as follows;

(A) a completely new, independent unit

(B) a separate unit operating under the umbrella of the DoE and possibly created by expanding the responsibilities and remit of an existing agency.

(C) a unit within the DoE. [In fact there is already a standing inter-departmental group comprising officials from various departments which the government relies on for a national overview of coastal issues. It would appear however to be too limited in size and scope to play "a key role in developing coastal policies and overseeing the establishment of local management plans" as anticipated by the government.]

5.2.11. An overall framework for coastal zone management based on the first two elements requires implementation at regional and local levels. If this is to be effective, careful consideration needs to be given to the nature, scope and interrelationships of these regions. Management boundaries are defined for a number of reasons depending on what is to be achieved. The administrative boundaries which exist in this country in relation to land-use planning have been deemed inappropriate by many to effectively control sea use.

5.2.12. Furthermore, landward boundaries of local authority jurisdiction are in the process of being reviewed by the Local Government Commission in order to establish the appropriate level of government for each part of the country. We therefore have a situation where local government is entering a further stage of reorganisation which may provide a good opportunity for focusing attention on coastal issues. It may also enable the necessary structures to be put into place to ensure that all factors are taken into account in making decisions which affect the coastal zone including environmental, economic, physical, cultural, administrative and, in some cases, wider European considerations. The problems, needs and characteristics of each locality will again determine the appropriate extent of the region. Undoubtedly, there are advantages and disadvantages in adopting both small and large regions. In the U.K. regional

bodies do exist but tend to be issue specific, for example the fora which consider coastal defence matters.

5.3 SUMMARY OF POSITION

5.3.1. It is the view of many organisations and individuals that some integrated form of planning and management is long overdue. There are many examples of implementation of some or all of the principles of coastal zone management in other countries which have achieved varying degrees of success. Much of the research in respect of the situation in the United Kingdom has been carried out in the last few years. It criticises current arrangements and policies and the lack of response from the Government in terms of introducing any new policies or procedures to deal with the perceived inadequacies in the present system.

5.3.2. 1992, designated "The Year of the Coast", has been a significant year for coastal planning. For the first time a comprehensive account of Government policies was set out by the Department of the Environment in its evidence to the House of Commons Select Committee (House of Commons, 1992b). Draft policy guidance initially set out the government's views for the future. There followed consultation, publication of the Government's response to the Select Committee's report (DoE, 1992e) and the emergence of a draft report produced by consultants for the DoE as part of a wider research project into coastal management and responsibilities (DoE, 1992f). The resulting, amended document cancelled Circular 12/72 'Planning of the Undeveloped Coast', the last guidance to specifically address coastal issues nearly twenty years ago. Planning Policy Guidance Note (PPG) 20 : 'Coastal Planning' (DoE, 1992b) now finally sets out for, amongst others, those charged with the responsibility for implementation, the government's policies for the future planning of the coastline. It is to this sequence of documents that we now turn our attention.

5.4 POLICY UPDATE

5.4.1. In March 1992 the Department of the Environment published **draft policy guidance** on coastal planning for consultation. In the face of growing speculation and criticism from a number of sources about the inadequacy of existing arrangements, this document attempted to set out, for the first time, comprehensive guidance as to the Government's views and intentions with respect to coastal planning.

5.4.2. The coast was identified as a vital national and natural resource, with unique characteristics, which is likely to come under increasing pressure from the threat of rising sea levels. However, the need to protect this resource must be balanced against the need for development. The Government's stated position and guidance to local planning authorities considering development proposals contained in other advice must also be borne in mind (PPG1: General Policy and Principles, cites the need to strike a balance between the legitimate needs of development and the protection of the environment).

5.4.3. The document made it clear that, above mean low water mark, local planning authorities should be able to control development through the existing planning system, using special policies where applicable in respect of the particularly sensitive areas of the coast. 44% of the coast was stated to be covered by special designation which will entail conservation issues being given a higher profile when determining applications to develop land (Figure 1 in chapter one illustrates the extent of these designations). It was recognised however, that problems exist when considering proposals, such as for marinas, which span the mean low water mark. In such instances environmental assessment may be required where Private Bills or harbour revision orders are used.

5.4.4. The Government considered that the areas of the coastal zone which were particularly sensitive and therefore required protection were already adequately covered by these existing landscape and/or nature conservation designations. The Note renewed support for such designations. Heritage Coast designation and initiatives by local authorities and the National

Trust in owning and managing land were seen as evidence of the successful protection of the remaining undeveloped areas of the coast. New development, where it required a coastal location was directed to other, less sensitive areas and to places where development had already taken place. Such locations, already 'spoilt' by development, were seen to provide ideal opportunities to improve the environment and regenerate local economies.

5.4.5. For the first time the need was recognised for local planning authorities to consult across administrative boundaries regarding coastal issues. (This requirement already existed however in relation to the preparation of structure and local plans). This followed acceptance of the fact that the coastal zone is subject to natural forces which dictate that actions taken in one area will inevitably have effects in another. Recognising that insufficient was known about the nature of these forces, it was announced that research had been commissioned to identify their true extent (DoE, 1992f).

5.4.6. Local plans provide an opportunity to define those areas to which coastal policies apply. The coastal zone for planning purposes should;

"..include areas affected by off-shore and near-shore natural processes, including areas of potential tidal flooding and erosion and those areas directly visible from the coastline. It should also include enclosed tidal waters, such as estuaries and surrounding areas of land. In many places, the coastal zone is likely to be a narrow strip, except where there are substantial areas of low-lying land".

This represents a more limited area than that more widely taken to represent the coastal zone which would involve all areas where land and marine influences interact.

5.4.7. No reference was made to the establishment of any new administrative arrangements to deal with coastal issues. Recognising the fact that the coast is a strategic planning issue, support was expressed for initiatives such as the Coastal Defence Forum which encourage cooperation on technical matters of common interest, although support for similar local authority groupings was limited to those areas around estuaries. No guidance was put forward to suggest the appropriate scale or composition for such groups. The Government made it clear that it wished to see environmental improvements along the coast but proposed no mechanism for the planning system to incorporate positive management policies. It remains for others, such

as landowners, perhaps in conjunction with the Countryside Commission, to bring forward proposals to be considered in the light of development plan policies.

5.4.8. Finally, coastal planning was located in the overall statutory framework for land use planning and advice offered as to how it should be incorporated into local and structure plans and, on a wider level, into regional guidance. The PPG was initially welcomed since it represented long-awaited recognition of the existence of particular problems in planning coastal areas and was a first step towards comprehensive advice directed specifically at such issues. However, the document displayed no commitment to any major changes in coastal planning and protection, instead offering a largely descriptive assessment of the range of activities taking place. It offered little definitive, practical guidance to local authorities concerned to establish comprehensive strategies to deal with the problems arising in their localities.

5.4.9. The report of the **House of Commons Select Committee** (House of Commons, 1992a) takes a broader view of the coastal zone and examines the wider management, regulatory and planning framework required for its protection and planning in the future. It concludes that centuries of uncoordinated actions and decisions at national and local level have stemmed from inadequate legislation and anomalies in the administrative systems, resulting in conflict and lack of coordination. The lack of central guidance is stated to have led to conflicting policies among the multitude of Government Departments, local authorities and public agencies which operate within the coastal zone. These problems have arisen partly because of the complex patterns of ownership and partly because the jurisdiction of planning authorities is based on administrative boundaries, rather than on the natural boundaries suggested by coastal dynamics.

5.4.10. Having taken evidence from a large number of the organisations involved, the Committee recommended a more comprehensive and integrated approach. This should be achieved by consolidating legislation, developing coastal policy, reviewing the planning system and adopting the concept of "Coastal Zone Management" (CZM) as a framework for planning and managing the coastline of the United Kingdom. The aims of CZM, to balance demands for

resources, promote their sustainable use and resolve conflicts, should be achieved through a hierarchy of CZM Plans from the national to regional and local levels. The Government should provide guidance on the content and preparation of such plans which should be drawn up on the basis of natural coastal "cells". The Committee recommended that these Plans should be non-statutory documents but that their policies should be incorporated into Development Plans. The coastal zone should be treated as an integrated unit, comprising inshore waters, intertidal areas and maritime land, rather than a physical or administrative boundary.

5.4.11. The need for a new national coastal zone unit was identified. The Committee felt that the DoE should take the lead in setting up such a unit, although the institutional arrangements should be decided by Government following consultation via a discussion paper. The unit should undertake the formulation of a national coastal strategy, coordinate research and information and provide a framework to support the work of regional coastal groups.

5.4.12. The division of responsibilities between land and sea is seen as one of the major problems with the current system. Unnecessary duplication of work is a result of fragmentation of responsibility throughout a large number of agencies and organisations, highlighting the uncoordinated nature of current arrangements. The Report therefore recommends a "harmonising of landward and seaward planning control" by either a blanket extension of local planning authority jurisdiction or the extension of certain planning authority powers. In either case, it recommended that the new regime should extend to the twelve nautical mile limit of territorial waters.

5.4.13. Finally, the Committee felt that the commitment of a whole range of bodies was required but that the building blocks for implementing CZM already exist in Britain. Thus the existing regional coastal groups should be reorganised and resourced to enable them to widen their scope and membership and adapt to take on the functions of CZM. The Committee plainly did not agree with Whitehall's written submission that "the coastal zone provides one of the most striking instances of the successes of the United Kingdom's planning and development control system" in suggesting these fairly radical proposals for improving the system. It was also clearly

unimpressed with the reluctance so far seen to agree to any substantial changes in the way coastal planning is handled (Planning, 1991).

5.4.14. In July, the Government issued its response to the matters raised by the Select Committee (DoE, 1992e). This document welcomed the Select Committee's report as a "valuable contribution to the debate on coastal zone protection and planning" whilst reiterating the Government's support for existing arrangements in most areas. However, some new initiatives were proposed in the light of the Committee's recommendations. For instance a discussion paper reviewing the effectiveness of present regulatory systems controlling construction and development beyond low water mark was promised and the Committee's definition of the coastal zone was accepted by the Government. Support was also expressed for multi-agency management plans in estuaries and inshore waters in acknowledgement of the conflicts between recreation and conservation interests in these areas. Other commitments included a review of controls over marine aggregates dredging and the promotion of regional coast defence strategies which will look at a variety of options including "controlled retreat" to create new habitats.

5.4.15. However, the document dismissed the idea of regional coastal cells as a basis for decision-making, considering that the number of agencies involved would make this impractical. Management plans, where required, should instead be focused on smaller lengths of coastline and should be tied in with development plan policies. This is seen as a more appropriate way of linking the two systems, in comparison to the coastal cell arrangement which would involve cutting across the three tiers at regional, county and local level and "would add to the confusion rather than encouraging integration".

5.4.16. The Government did not consider that all legislation relating to coastal matters could be satisfactorily consolidated. Since for some issues, such as pollution, the whole country could be treated as part of the coastal zone, the boundary in practice should be a moveable one and legislation should not therefore rigidly apply to one zone, but should allow the flexibility to integrate management of the coast with that of the country as a whole. Neither did it agree that

there was evidence of poor coordination between agencies or widespread duplication of responsibilities. It accepted however, that coastal defence, pollution, research and estuary management needed addressing and proposed measures to review responsibilities in these areas.

5.4.17. Finally, the Government accepted the need for a national overview of coastal issues. However it expressed its intention to retain the Inter-Departmental Group (IDG), which had then been in operation for over a year, as a mechanism to continue the development of coastal policy. It did not consider it appropriate to establish any separate body at the national level, nor to extend the remit of the existing group to take on major executive functions. The document identifies the Government's strongly held belief that no radical changes are required and that the existing systems should be adapted to meet the challenges facing the coastal zone. It concludes however, with a list of the steps the Government intends to take (Appendix F).

5.4.18. In August, the DoE made a **draft of their consultant's report** available for comment. Rendel Geotechnics, who are consulting and designing engineers, were commissioned to carry out a research project entitled 'Planning policy for the coast and earth science information in support of coastal planning and management', comprising two distinct phases. This document represents the conclusion of the first phase and reports on the effectiveness of existing coastal planning and management arrangements and responsibilities in the United Kingdom. The research consisted of a desk study of relevant policy, legislation and literature, discussions with a maximum of twenty-five agencies with responsibilities in the coastal zone and in-depth interviews with representatives from five local authorities. The second phase of the report is investigating the technical information on the physical environment which is needed as a background to decision making and is due to be concluded in 1993.

5.4.19. This report reviews the policy background, the legislation and the effectiveness of present arrangements under the headings of coastal defence, pollution control, conservation, control of development on land, regulation of development on the sea bed and regulation of activity on and in the sea. Within each of these categories, the extent to which coastal dynamics

and environmental implications are considered by the planning (or other management) system, the extent to which the interests of other groups are taken into account and the ability of each system to allow coordinated decision making across the coastal zone are examined.

5.4.20. The report concludes that there are limits to what the planning system can achieve in the coastal zone, since it is only one instrument to be used in developing and conserving the coast. However, it highlights the difference between what can be achieved and what is achieved by many local planning authorities. The past lack of coordination between land use planning agencies and other organisations, particularly in relation to coastal defence issues, is cited as one of the main reasons for this divergence. The lack of adequate earth science information and understanding of physical processes on which to base management strategies is also of direct relevance.

5.4.21. The final version of **Planning Policy Guidance Note 20: Coastal Planning** (DoE, 1992b) was published in September 1992. It represents the government's revised views on the planning of the coastal zone, after taking into consideration comments received as a result of the consultation exercise, the findings of the preceding review into coastal policy and responsibility in the U.K. and the views of the many organisations and specialist bodies which gave evidence to the Select Committee as indicated above. It also sets out the areas where the government considers that further knowledge is required and its proposals to fill such gaps.

5.4.22. Concern at the proposed definition of the coastal zone as a "narrow strip" has been met and local authorities will now be left to define their coastal zones as appropriate to the particular issues in their area. There is recognition that the coastal zone has an impact on the wider area, for instance below the low water mark, although no proposals are put forward to extend controls seaward. There is an increased emphasis on environmental matters, in relation to the Ramsar Convention on wetlands, the designation of Heritage Coasts, the identification of environmental improvement as a key policy issue, the need to steer development away from undeveloped coasts and the protection of agriculture and fishing resources. However, there is a similar absence of innovative measures to tackle these issues.

5.4.22. The 'welcome' extended to regional conferences in the draft version has been toned down. However, attention is drawn to the need for clear strategies for stretches of open coast as well as estuaries and encouragement given to the preparation of non-statutory management plans. Whilst the Government is currently assessing progress with such plans, no indication is given of any proposals for a new coordinating unit at central level to provide guidance and ensure consistency between local authorities.

5.4.23. It is apparent that the government still considers that on the whole "existing arrangements are working well" and therefore that no substantial changes to the present system are proposed. Instead it is intended that local planning authorities should continue to work within the existing frameworks. Thus coastal zone management is to be addressed through the normal hierarchy of development plans in order to run in parallel with the wider issues of development planning. The statutory plans are to provide a framework for management plans. Whilst the importance of incorporating coastal zone issues in local plans is emphasised, these issues are unlikely to be given priority within regional guidance.

5.5 SUMMARY

5.5.1. Of course, Planning Policy Guidance Notes are simply guidance aimed at effective planning and cannot in themselves resolve coastal problems, nor are they a vehicle for creating new policy. The final version of the PPG does emphasise the importance placed on this special and fragile environment and recognises the consequent need to protect it from unnecessary development. However, although it describes quite extensively the existing designations, it proposes no new measures to deal with the range of new pressures which are increasingly putting a strain on coastal resources.

5.5.2. It would appear from the above chapters that there is widespread agreement amongst a variety of agencies that more radical action is required imminently if further damage to coastal resources is to be avoided. Some of the new measures being called for would require new legislation and this would, of course, involve a considerable delay. The government instead has expressed its intention to review some of the existing arrangements, although, there seems little hope of any significant change.

CHAPTER SIX : CONCLUSIONS

6.1 INTRODUCTION

6.1.1. Man has had a long, although often uneasy relationship with the coast. Over the centuries, the perception of the coast has changed as its resources have been utilised for different purposes. Initially, the coast offered food and security. Later coasts provided prime locations for industrial and commercial development and played a large part in building the nation's economy. Whilst they still fulfil this vital function, the emphasis has now shifted again, towards recreation and conservation, as the impact of man's activities on this zone are beginning to be fully appreciated.

6.1.2. The resources of the coastal zone are commonly available to all. It is becoming increasingly apparent that, in order to maintain its diversity and benefits for future generations to enjoy, methods of resource allocation and mechanisms to balance conflicting uses of the coastal zone will need to be employed. The dynamic nature of the coast and the physical processes at work means that it is possible for activities taking place in one locality to have a significant impact on both adjacent zones and on places a considerable distance away. It is therefore essential that coastal areas are planned and managed in a comprehensive manner so that the wider considerations can be taken into account. Examples can now be found worldwide where a number of nations are working together to find mutually acceptable ways to manage uses taking place in common areas of sea (for instance the North and Baltic Sea States).

6.1.3. One of the main aims of these initiatives is to regulate uses taking place, particularly in busy sea areas, in order to maintain the attractiveness of the coast. Effective management techniques for balancing pressures and minimising risks must be based on a sound understanding of the physical processes at work. Such knowledge has been absent from decision-making processes in the past and its importance is only now beginning to be recognised.

6.1.4. There are an increasing number of issues facing coastal managers which require some degree of scientific knowledge before they can be tackled effectively. The nature of the coastal zone is such that almost all raise conflict between various coastal user and interest groups. Additionally developers, ecologists, engineers, geologists, landowners and economists all have a professional interest. Some of the conflicts of interest may be anticipated and planned for, whilst others are unpredictable and may require remedial action. The change in approach over recent years has been marked by a desire to move forward from direct resolution of conflicts towards planned avoidance of them. This progression is apparent when we compare the coastal management programmes of the developed and developing nations. The former aim to create the necessary frameworks within which to balance competing interests in the future and are based on an increasing awareness of environmental issues. The latter meanwhile attempt to ameliorate the effects of previous development and are necessarily concerned with more basic matters affecting human health and economic prosperity.

6.2 THE COASTAL ZONE

6.2.1. A number of factors in recent years have combined to revive the debate in the United Kingdom and elevate the position of coastal issues on the political agenda. The aim of chapter one was to provide a wider global context within which to view this debate. World population growth was identified as a significant threat and coastal areas in particular will suffer its effects since they are already densely populated. Modern technology and improved communications have effectively 'reduced' the size of the globe, bringing far-flung countries within easy reach of one another. Progress has also advanced understanding of the problems experienced in other countries and heightened our awareness of the environmental impact which actions taken in one individual country can have on its neighbours. Whilst population growth in the United Kingdom, as in many other European countries, is not a major consideration, there is nevertheless a great deal to be gained by establishing common ground and agreement at the international level. The United Kingdom has an extensive history and a great deal of expertise to offer in the fields relevant to coastal zone planning which will be invaluable in promoting the advancement of a strategy on the wider European level.

6.2.2. The importance of the coastal zone and its attraction to man have been clearly identified. These factors have influenced the pattern of coastal development over the years for several reasons:

- * Transport. Shipping led first to coastal settlements at natural harbours and later, to the development of man-made facilities.

- * Industry. Industry is attracted to the coast for transport reasons and/or because of the need for an abundant supply of water.

- * Residential use. People reside in the coastal zone because of employment needs and because of its attractiveness as an environment in which to live. Modern transport patterns enable people to live at the sea and work some way inland.

- * Recreation. Many coastal towns owe their existence to Georgian and Victorian fashions for bathing. Modern requirements are for marinas, holiday complexes and leisure parks.

- * Exploitation of natural resources including fish and oil and the use of the sea bed for mariculture.

- * Conservation. The coastal zone is scenically attractive with a rich and varied wildlife. The desire to preserve its natural heritage and to enjoy it by visiting is on the increase.

- * Cost and availability. Coastal land, even with the costs of reclamation, is economically attractive, increasingly so as the availability of other land declines.

6.2.3. In chapter two we looked at the mechanisms currently in place to guide new development, regulate these activities and deal with the problems which arise as a result of conflicting interests and requirements. Some of the shortcomings in these procedures were identified in the ensuing chapter, which highlighted the effects of these activities on the natural and wildlife resources of what has been identified as the coastal zone. This zone, taken at its broadest, can include the hinterland of rivers draining into estuaries and extend seawards to the extent of national jurisdiction. At its narrowest it may be no more than the coastal fringe of land subject to maritime influence together with the intertidal zone and shallow sublittoral. It is important to recognise

that the coastal zone is not merely a combination of a terrestrial zone and a marine zone, to be managed in a composite way, but that the whole is greater than the sum of the parts with special problems and features of its own necessitating special treatment. It must not be forgotten, however, that there are very real differences between the marine and terrestrial components of the zone. The danger of moving from a two-part system of land and sea to a three-part one of land, coastal zone and sea, which fails to integrate all three, is apparent.

6.3 MANAGEMENT NEEDS

6.3.1. A full understanding of these problems requires better knowledge of the inherent natural, physical processes taking place. Such knowledge is an essential prerequisite for informed decision making and hence effective management of coastal resources. This applies to a number of areas.

6.3.2. The threat of rising sea levels has focused attention on the debate surrounding methods of coast protection. Whilst a number of studies have been carried out, we still do not yet know the full picture. The changing climatic conditions as evidenced in the storms of recent years are cited as evidence of global warming and it seems likely that such extremes will be experienced in the future. The need to plan for such changes is apparent and should take into account the other issues involved in coastal zone management.

6.3.3. Such changes pose risks to human settlements. There are also risks to the environment, although, without man's intervention, these can merely be seen as part of the natural dynamic process. This process involves erosion of sediments from one part of the coastline and deposition in another. Man's interference with this natural building of new coastlines through the process of accretion, can involve profound effects on coastlines elsewhere.

6.3.4. Man poses a far greater threat to the coastal environment through activities involving over-development, pollution and over-exploitation of resources, than the natural processes associated with sea level rise. Effective management of the coastal zone will depend on heightened understanding of the natural processes in order to counteract the worst effects of these threats. The coastal zone is of great national importance. Much of it is of great scenic beauty and conservation importance and its varied habitats have a high biodiversity and productive capacity. Much of the coastline is covered by some form of conservation designation, parts of which are of international importance. The marine environment also harbours significant sites although progress has been slow in recording these features. The problems for management stem from the need to cater for the livelihood of the many people living in the coastal zone, at the same time protecting this unique environment, whilst adapting to unpredictable physical changes.

6.4 FAILURES OF THE PRESENT SYSTEM

6.4.1. One of the major problems which has been identified is the lack of any planning mechanism to deal with uses taking place at sea and the inadequacy of current arrangements to deal with developments which span the land/sea divide. The coast has thus been treated as a boundary rather than a unit in its own right and consequently the wider implications of activities have not been taken into account. The problems are exacerbated by the imposition of political boundaries which form the distinction between administrative units. Natural features, such as estuaries, frequently form the boundary between neighbouring jurisdictions. These boundaries are inappropriate from a biological point of view and provide a poor basis for environmental management.

6.4.2. The underlying legislative framework has established this position. Planning legislation is framed in sectoral terms and does not apply below low water mark. Therefore management, at present, is based on these broad sectors of interest and the small size of the units of management leads to a lack of integration, resulting in a number of commonly cited problems:

* The scale of physical change in coastlines is much greater than the unit of management so that coastal protection, for example, in one geographical unit may affect the coastline in another unit outside the control.

* The management of one activity may affect another sector of interest. Aggregate dredging, for instance, affects fishing, navigation, pollution control, coastal protection and conservation.

* Similar activities may be subject to different management regimes because they fall on different sides of the land/sea boundary. This applies to piers and marina complexes.

* Activities that combine elements of terrestrial and marine activities may be inadequately controlled because of gaps in the law and/or administrative framework.

Research has confirmed that the result of such problems and conflicts has been a significant loss of natural, irreplaceable habitat.

6.5 REQUIREMENTS

6.5.1. There appears to be a need to develop planning policy at a national level, which views the coastal zone as a whole, together with the means of implementing it. The concept of integrated Coastal Zone Management has been advocated as a mechanism to provide a coherent approach for the implementation of planning and management policies. However a number of areas are still under debate.

6.5.2. An important first step in determining appropriate mechanisms for future planning and management must be agreement as to what does in fact constitute the coastal zone. There has been much debate over this issue (Appendix D). The best way of resolving these differences of opinion may be to set limits on the maximum extent of the coastal zone, preferably based on biological criteria, and adopt a pragmatic approach whereby narrower limits are used according to the particular management needs of particular localities. This type of approach has been used in the United States whereby the Coastal Zone Management Act 1972 did not

specify fixed boundaries, but left individual States to decide the necessary extent of both terrestrial and marine limits.

6.5.3. The publication of PPG 20 : Coastal Planning, provided the Government's response to criticism of the lack of policy guidance. However, we have seen that this is largely descriptive in nature and provides no indication of any new measures to aid local authorities. Furthermore, there have been many calls for some form of high profile, central authority with identified responsibility specifically for coastal matters, to develop policy, to coordinate the many local and regional initiatives and to disseminate information. Opinions differ as to whether this body should be formulated from within the existing system or whether an entirely new agency would be more beneficial in providing a fresh impetus to coastal issues. The approaches adopted in a variety of countries were considered in chapter four. The government has stated that it does not consider this to be an option in practice, since the range of issues is too vast, resulting in further confusion and believes the present system to be satisfactory. It has therefore expressed its intention to continue with these existing arrangements.

6.5.4. Despite the reluctance on the part of the Government to provide a lead in such matters, progress in the form of various initiatives and with the production of a number of Coastal Zone Plans has been made by local authorities in England and Wales. One of the purposes of such initiatives has been to further the debate and encourage the dissemination of information amongst researchers and practitioners in the field. The need for such action has been prompted, in part, by the lack of any commitment by Government to tackle the issues in any integrated fashion. The high profile given to some of these initiatives has also had the added advantage of encouraging a growing awareness on the part of the general public of the implications of not adopting a more sustainable approach to the environment.

6.5.5. The government lent its support in PPG 20 to the initiatives which have taken place around the country and believes that there is much to be said for proceeding along the non-statutory route. Many would agree with this approach since the legal complexities are so great that a considerable amount of time would be wasted if no progress were to be made whilst

these are being reviewed. Much can be done by improving communication, education and public involvement and developing cooperation informally. Whilst encouraging such moves on a regional level, the government considers that the regional "coastal cells" advocated by, amongst others, the House of Commons Select Committee are at too large a scale to deal with the practical management issues involved. The areas where further action and review are proposed are set out in appendix F. In order for the results of such reviews to be turned into action on the ground the commitment of manpower, resources and expertise will be required. Whether such resources will be available in the coming years remains to be seen. The reorganisation of local government and the implementation of unitary authorities will throw a further complicating factor into the equation.

6.6 FINAL COMMENT

6.6.1. The intense activity on coastal issues in 1992 prompted much discussion of future needs. This activity was in evidence on the international stage, in Europe and at home. Throughout, the need has been emphasised to manage coastal systems rather than planning and managing land and/or sea activities. The Wadden Sea Study is an example which integrates the systems approach with a key aspect of the European dimension, namely integrated management across national boundaries.

6.6.2. In this country, an integrated approach is also required which encompasses all areas of the coastline. However, achievement of this objective is still some way away. Whilst theoretically attractive, it may be that a single unifying coastal management framework (both within nations and internationally) is not a realistic goal due to the diversity of the coast and the multiplicity of coastal activities. The need for further research, both academic and practical, is apparent. The more immediate need is for practitioners to establish appropriate ways of managing conflict and much can and is being done within existing frameworks. The future development of Coastal Zone Management will be aided considerably by continuing to exchange ideas and learn from the experience of other countries throughout the world.

APPENDIX A:

**LEGISLATION AND GUIDANCE RELEVANT TO COASTAL ZONE PLANNING AND
MANAGEMENT**

1907 National Trust Act

1934 Petroleum (Production) Act (oil and gas extraction)

1936 Public Health Act

1937 Diseases of Fish Act

1947 Town and Country Planning Act

1949 Coast Protection Act (development affecting navigation)

1949 National Parks and Access to the Countryside Act

1954 Protection of Birds Act

1961 Crown Estate Act

1961 Public Health Act

1964 Harbours Act (ports)

1966 Sea Fisheries Regulation Act

1967 Sea Fisheries (Shellfish) Act

1967 Sea Fisheries (Conservation) Act

1968 Countryside Act

1970 Conservation of Seals Act

1971 National Trust Act

1971 Chichester Harbour Conservancy Act

1971 Prevention of Oil Pollution Act

1972 Local Government Act

1973 Protection of Wrecks Act

1974 Control of Pollution Act

1976 Land Drainage Act

1976 Local Government (Miscellaneous Provisions) Act

1979 Ancient Monuments and Archaeological Areas Act

1981 Wildlife and Countryside Act

1983 Heritage Act

1983 Diseases of Fish Act

1985 Wildlife and Countryside (Amendment) Act

1985 Food and Environment Protection Act (constr. below mean h.w.)

1986 Agricultural Act

1986 Prevention of Oil Pollution Act

1986 Protection of Military Remains Act

1987 Petroleum Act

1989 Electricity Act

1989 Water Act

1990 Environmental Protection Act

1990 Town and Country Planning Act

1990 Planning (Listed buildings and Conservation Areas) Act

1991 Land Drainage Act

1991 Planning and Compensation Act

1991 Water Resources Act

1991 Ports Act

1992 Sea Fisheries(Wildlife Conservation) Act

1992 Transport and Works Act

+ Public Health Acts 1907-61

+ Merchant Shipping Acts 1894-1988

REGULATIONS

1988 Land Drainage Improvement Works (Assessment of Environmental Effects) Regulations

1988 Petroleum Production (Seaward Areas) Regulations

1988 Merchant Shipping (Prevention of Pollution from Garbage) Regulations

1988 Environmental Assessment(Salmon Farming in Marine Waters) Regulations

1988 Town and Country Planning (Assessment of Environmental Effects) Regulations

1989 Harbour Works (Assessment of Environmental Effects)(No.2) Regulations

1991 Town and Country Planning (Development Plan) Regulations

EEC DIRECTIVES

76/160/EEC : Bathing Waters

76/464/EEC : Controls inputs of dangerous substances

79/464/EEC : Pollution caused by dangerous substances

79/923/EEC : Shellfish waters

79/409/EEC : Conservation of wild birds

78/176/EEC : Waste from Titanium Dioxide Industry

85/337/EEC : Environmental assessment

92/43/EEC : Habitats

91/217/EEC : Urban waste water

GOVERNMENT REPORTS AND GUIDANCE

PLANNING POLICY GUIDANCE NOTES

PPG 1 General policy and principles

PPG 7 The Countryside and the Rural Economy

PPG 14 Development on Unstable Land

PPG 16 Archaeology and Planning

PPG 17 Sport and Recreation

PPG 20 Coastal Planning

PPG 21 Tourism

CIRCULARS

56/63 Coastline preservation and development

12/72 Planning of the undeveloped coast (Heritage coasts)

32/81 Wildlife and Countryside Act 1981

17/82 Control of development in areas subject to risk of flooding

18/84 Administrative procedures for Crown Authorities

2/85 Planning control over Oil and Gas Operators

27/87 Nature Conservation

15/88 Environmental Assessment

17/91 Water Industry Investment: Planning Considerations

1/92 Planning Controls over SSSI's

REPORTS

1) Environment white paper : "This Common Inheritance"

2) Department of the Environment : "Policy Appraisal and the Environment", September 1991

APPENDIX B:

**CENTRAL GOVERNMENT DEPARTMENTS, AGENCIES AND STATUTORY BODIES
CONCERNED SPECIFICALLY WITH VARIOUS MAJOR USES OF THE MARINE
ENVIRONMENT**

Alkali & Radiochemical Inspectorate (N.Ireland)

Council for Nature Conservation and the Countryside

Countryside Commission

Countryside Commission for Scotland

Crown Estate Commissioners

Department of Agriculture and Fisheries for Scotland

Department of Agriculture (N.Ireland)

Department of Economic Development (N.Ireland)

Department of Energy

Department of the Environment

Department of the Environment (N.Ireland)

Department of Trade & Industry

Department of Transport

Foreign and Commonwealth Office

Health & Safety Executive

HM Industrial Pollution Inspectorate (Scotland)

HM Inspectorate of Pollution (England/Wales)

Home Office

Ministry of Agriculture, Fisheries & Food

Ministry of Defence

National Rivers Authority

Nature Conservancy Council

Natural Environment Research Council

Northern Ireland Office

Science & Engineering Research Council

Scottish Development Department

Sports Council

Welsh Office

SPECIFIC AREAS OF INTEREST

NATURE AND LANDSCAPE CONSERVATION

Council for Nature Conservation and the Countryside

Countryside Commission

Countryside Commission for Scotland

Department of the Environment

Department of the Environment (N.Ireland)

Nature Conservancy Council

Natural Environment Research Council

Scottish Development Department

Welsh Office

FISHERIES / HARVESTING / AQUACULTURE

Crown Estate Commissioners

Department of Agriculture (N.Ireland)

Department of Agriculture and Fisheries for Scotland

Department of Transport

Foreign and Commonwealth Office

Health & Safety Executive

Ministry of Agriculture, Fisheries & Food

MILITARY USE

Ministry of Defence

MINERAL / ENERGY EXTRACTION

Crown Estate Commissioners

Department of Agriculture & Fisheries for Scotland

Department of Agriculture (N.Ireland)

Department of Economic Development (N.Ireland)

Department of Energy

Department of Trade & Industry

Department of Transport

Foreign and Commonwealth Office

Health & Safety Executive

Ministry of Agriculture, Fisheries & Food

Scottish Development Department

WASTE DISPOSAL / POLLUTION CONTROL

Alkali & Radiochemical Inspectorate (N.Ireland)

Department of Agriculture and Fisheries for Scotland

Department of Agriculture (N.Ireland)

Department of Energy

Department of the Environment

Department of the Environment (N.Ireland)

Department of Trade & Industry

Department of Transport

Health & Safety Executive

HM Industrial Pollution Inspectorate (Scotland)

HM Inspectorate of Pollution (England/Wales)

Home Office

Ministry of Agriculture, Fisheries & Food

National Rivers Authority

Natural Environment Research Council

Scottish Development Department

Welsh Office

RECREATION

Council for Nature Conservation and the Countryside

Countryside Commission

Countryside Commission for Scotland

Department of the Environment

Department of the Environment (N.Ireland)

Department of Transport

Scottish Development Department

Sports Council

Welsh Office

ENGINEERING WORKS

Department of Agriculture and Fisheries for Scotland

Department of Energy

Department of Transport

Ministry of Agriculture, Fisheries & Food

National Rivers Authority

Science & Engineering Research Council

SHIPPING / NAVIGATION / COMMUNICATIONS

Crown Estate Commissioners

Department of Energy

Department of the Environment (N.Ireland)

Department of Trade & Industry

Department of Transport

Foreign and Commonwealth Office

Ministry of Defence

Science & Engineering Research Council

**CENTRAL GOVERNMENT DEPARTMENTS, AGENCIES AND STATUTORY BODIES WITH
RESPONSIBILITIES AND INTERESTS IN THE COASTAL ZONE**

CENTRAL GOVERNMENT DEPARTMENTS

Department of the Environment

Department of National Heritage

Department of Trade and Industry

Department of Transport

Home Office

Ministry of Agriculture, Fisheries and Food

Ministry of Defence

Welsh Office

OTHER BODIES

Countryside Commission

Crown Estate Commissioners

English Heritage

English Nature

Health and Safety Executive

HM Inspectorate of Pollution

Joint Nature Conservation Committee

National Rivers Authority

Sports Council

Regional Tourist Boards

Water Companies

Rural Development Commission

APPENDIX C:

EXAMPLES OF VOLUNTARY AND OTHER GROUPS WITH AN INTEREST IN THE ACTIVITIES TAKING PLACE IN THE COASTAL ZONE

- * Advisory Committee on Protection of the Sea
- * Association of Sea Fisheries Committees
- * British Association for Shooting and Conservation
- * British Sub-Aqua Club
- * British Trust for Ornithology
- * British Water Ski Federation
- * The Caravan Club
- * Coastal Anti-Pollution League
- * Council for National Parks
- * Council for the Protection of Rural England
- * Countryside Recreation Research Advisory Group
- * Friends of the Earth
- * Greenpeace
- * Heritage Coast Forum
- * Joint Nature Conservation Committee
- * Marine Conservation Society
- * National Federation of Anglers
- * National Trust
- * Open Space Society
- * Ramblers Association

- * Royal Society for Nature Conservation
- * Royal Society for the Protection of Birds
- * Royal Yachting Association
- * Seabird Group
- * Seal Sands Conservation Group
- * Severn Tidal Power Group
- * Shellfish Association of Great Britain
- * UK Personal Water Craft Association
- * Voluntary Sector Lobby Group
- * Water Research Centre
- * Wildfowl and Wetlands Trust
- * World Wide Fund for Nature

APPENDIX D:

DEFINITIONS OF THE COASTAL ZONE AND COASTAL ZONE MANAGEMENT

THE COASTAL ZONE;

1) The coastal zone is a dynamic human and natural system which extends to seawards and landwards of the coastline. Its limits are determined by the geographical extent of the natural processes and human activities which take place there. Coastal zone management should extend as far inland and seaward as is required by management objectives.

(Definition from Poole seminar)

2) The Institution views the coastal zone as comprising the foreshore and the nearshore area, together with areas where leisure activities, construction or industry has an impact on the shoreline and, on the landward side, areas likely to be either directly or indirectly affected by coast erosion or inundation. Within this whole area there is a need for long-term planning and management through liaison between engineers, planners, developers, conservationists and environmentalists in order to avoid or resolve conflicts of interest.

(Institution of Civil Engineers)

3) Local plans provide an opportunity to define those areas to which coastal policies apply. The coastal zone for planning purposes should;

"..include areas affected by off-shore and near-shore natural processes, including areas of potential tidal flooding and erosion and those areas directly visible from the coastline. It should also include enclosed tidal waters, such as estuaries and surrounding areas of land. In many places, the coastal zone is likely to be a narrow strip, except where there are substantial areas of low-lying land".

(Planning Policy Guidance Note 20 : Coastal Planning)

4) The coastal zone should be treated as an integrated unit, comprising inshore waters, intertidal areas and maritime land, rather than a physical or administrative boundary.

(House of Commons, 1992a)

COASTAL ZONE MANAGEMENT

1) The primary aim of coastal zone management is to provide guidelines for decision makers on the way in which demands for numerous activities can be met without unreasonably disturbing either the balance of natural systems or the right of all members of the community to use and enjoy the coast.

(Report of the house of Representatives Standing Committee on the Management of the Coastal Zone in Australia)

2) Coastal zone management typically is concerned with resolving conflicts among many coastal uses and determining the most appropriate use of coastal resources.

(Sorensen et al., 1984)

3) Coastal Zone Management is a process designed to achieve a set of stated objectives. In the coastal zone the stated objectives would be to maintain and improve its usefulness for many by ensuring the quality and extent of the natural system... we propose a basic definition of Coastal Zone Management which should include (1) developing and understanding of the coastal zone as a system (2) using this knowledge to create a dynamic plan for its best use (3) implementing and enforcing that plan.

(Ketchum, 1972)

4) The Coast Conservation Act of 1981 proposes the use of a Coastal Zone Management Plan as a tool for ensuring specifically the socio-economic well-being of coastal communities and the Sri Lanka community in general.

(Amarasinghe et al, 1987)

5) The aim of Coastal Zone Management... should be to complement and enhance existing conservation efforts through a co-ordinating mechanism, an 'umbrella' programme under which coastal and marine protected areas can prosper.

(Salm & Clark, 1984)

6) Coastal Zone Management co-ordinates actions of various economic sectors to ensure that advances in one sector do not bring reverses in another.

(Al Gain et al, 1987)

7) A dynamic process in which a co-ordinated strategy is developed and implemented for the allocation of environmental, socio-cultural and institutional resources to achieve the conservation and sustainable multiple use of the coastal zone.

(Coastal Area Management & Planning Network, 1989)

(Adapted from Gubbay, 1990)

APPENDIX E:

KEY DATES FOR COASTAL PLANNING

1936 - Council for the Protection of Rural England (CPRE) report highlights pressures on the coast

1938/1938 - Coastal Preservation Committee set up (CPRE, National Trust, Open Spaces & Footpaths Preservation Society)

1938/42 - Reports from the committee noting urgent need to conserve remaining areas of beauty and scientific interest on the coast

1943 - J.A.Steers appointed advisor to Government and started coastal surveys of England and Wales

1946/53 - Steers' survey of the coast of Scotland

1947 - Town and Country Planning Act introduced giving development control to local authorities but not for inshore waters

1949 - National Parks and Access to the Countryside Act. No specific mention of coast. Suggestions for a national authority rejected in favour of individual National Park Authorities

1962 - Annual report of the CPRE highlighted lack of Government action and ineffective coastal planning. Suggestion for a new Government advisory committee rejected.

1963 - DoE Circular 56/63 'Coastal preservation and Development' called for coastal local authorities to survey their coastlines.

1965 - Letter from planning ministers to local authorities expressing concern about continuing spread of coastal development

1966 - DoE Circular 7/66 asks for clear statements from each local planning authority on their policy for coastal areas.

1966 - National Trust alarmed at loss of unspoilt coast launch Enterprise Neptune to buy coastal land

1966/67 - Nine regional conferences set up by National Parks Commission at the request of the Ministry of Housing & Local Government to assess policy and form basis for planning on the coast

1968 - National Parks Commission became the Countryside Commission and published reports of the coastal conferences

1970 - Publication of 'The Planning of the Coastline' by the Countryside Commission which put forward the idea of Heritage Coasts and Maritime Industrial Development Areas. The latter idea was not taken up

1970 - Publication of 'The Coastal Heritage' by the Countryside Commission

1972 - DoE Circular 12/72 'Planning of the Undeveloped Coast'

1973 - Three pilot stretches of Heritage coast set up with Heritage Coast Officers

1974 - Scottish Development Department publishes Coastal Planning Guidelines for the oil and gas industry identifying Preferred Development Zones and Preferred Conservation Zones

1977 - Countryside Commission for Scotland publishes first report on the resources of the Scottish coast

1980 - Re-launch of Enterprise Neptune

1981 - European Coastal Charter recognise the value and problems of the coast and calls for a European policy to protect this environment and develop the coastal economy

1988 - World Wide Fund for Nature and Marine Conservation Society initiate a project on coastal zone management

1988 - Heritage coast forum set up to promote the concept and act as a focus for Heritage Coast interests

1989 - The Organisation for Economic Cooperation and Development (OECD) instigates studies on coastal management. This includes a U.K. case study

1989 - Sefton Conference of the Royal Town Planning Institute calls for better integrated coastal planning through its 'Agenda for Action'

1990 - 43 out of the 44 proposed Heritage Coasts defined by the Countryside Commission

1990 - Publication of the Marine Conservation Society/ World Wide Fund for Nature proposals for a U.K. Coastal Zone Management Plan.

1992 - April - Publication of House of Commons Select Committee report on Coastal Zone Protection and Planning

1992 - June - 'Agenda 21' agreed at summit in Rio de Janeiro

1992 - September - publication of Planning Policy Guidance on Coastal Planning

1992 - December - Publication of draft Coastal Planning Guidelines for the south east by SERPLAN

APPENDIX F:

PROPOSED GOVERNMENT ACTION

The Government intends to:

- * Maintain national coordination arrangements for coastal policy
- * Promote effective multi-agency estuary and coastal management plans
- * Review regulation of activities below the low water mark and issue a discussion paper
- * Implement new Order-making procedures for developments in inshore waters
- * Review controls over marine aggregates dredging
- * Keep under review requirements for environmental impact assessment of coastal developments and works
- * Develop a national strategy for flood and coastal defence
- * Promote regional coastal defence strategies
- * Further environmentally acceptable coastal defence solutions
- * Develop policies for controlled retreat creating new coastal habitats
- * Continue supporting Heritage Coasts and sensitive management of the undeveloped coast
- * Review marine conservation legislation to ensure effective implementation of the Habitats Directive for coastal and marine habitats
- * Support policies for the improvement of the urban coast
- * Implement proposals for Statutory Water Quality Objectives in estuarine and coastal waters and maintain action to reduce coastal pollution
- * Promote clear agreement between the NRA and MPCU on the division of responsibilities for coastal pollution
- * End dumping of colliery spoil on Durham beaches as soon as practicable

- * Ensure environmentally sound control of marine fish farms
- * Pursue effective coordination and dissemination of coastal marine research

(Department of the Environment, 1992e)

APPENDIX G:

EXAMPLES OF INITIATIVES IN COASTAL PLANNING AND PROGRESS WITH COASTAL ZONE MANAGEMENT PLANS

Despite the reluctance on the part of the Government to provide a lead in such matters, progress in the form of various initiatives and with the production of a number of Coastal Zone Plans has been made by local authorities in England and Wales.

A) RECENT AND CURRENT INITIATIVES IN PLANNING AND MANAGEMENT

* Proposed HERITAGE COAST FORUM - liaison and cooperation mechanism for organisations with responsibilities for Heritage coasts

* EUROCOAST UK - an organisation which aims to provide a network for exchange of scientific and technical information in relation to the coastal zone through encouraging collaboration, organising meetings and producing a newsletter. Its first open meeting was held in June 1992 to discuss the European Council Resolution (92/C 59/01) on coastal zone management and its U.K. context in the light of the considerable activity on this subject during recent years. The European component of the organisation held an International Coastal Congress in Kiel, Germany last year as part of its programme to establish a similar network at the european scale.

* ENGLISH NATURE - estuaries initiative

* LOCAL AUTHORITY ASSOCIATIONS - consortium of CPOS,ADC,AMA,ACC

set up National Coasts and Estuaries Advisory Group

* MARINE FORUM - point of contact between a number of organisations and individuals with a particular interest in the marine environment, MCS, RSPB +government departments

* COASTAL DEFENCE FORUM - there are currently 16 Coastal Groups in England and Wales, covering 98 per cent of the coastline. All are members of the MAFF/Welsh office Coastal Defence Forum. Two of these Groups, the Llandudno-Mersey Estuary Coastal Group and the

Tidal Dee User Group cross the English/Welsh border, the latter Group covering navigation, land use and conservation in addition to coastal defence matters.

B) PROGRESS WITH CZP'S

Despite the absence of any statutory basis on which to act, a growing number of local authorities have instigated informal arrangements for coordination in their areas which, in some cases, has led to the production of Coastal Zone Plans. Some of these have in fact been in place for a considerable time. In the last few years they have increased rapidly in number.

* Sefton Metropolitan Borough

* Wirral & New Forest District Councils

* Hampshire, Kent, Devon, Dorset County Councils - the scope of these plans is limited by the lack of enabling powers

* Dee, Mersey, Exe, Milford Haven & Taw/Torridge Estuaries

* North Norfolk coast, Poole Harbour & Northumberland Coast Management Plan

* These represent just a few of the plans which have already been completed in areas which have experienced particular pressures. The Department of the Environment has pledged to undertake a review of progress throughout the country.

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