NATURE CONSERVATION, WATER RECREATION AND THE PLANNING SYSTEM.

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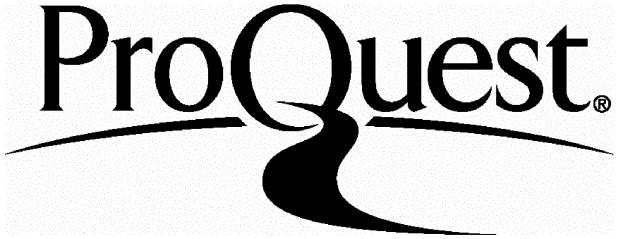

ABSTRACT

Environmental protection and the provision of recreational facilities are both current topics of debate within the planning profession and ones that are likely to receive continued attention. The aim of the thesis is to examine the conflicts that occur between water based recreation and nature conservation, whether they be based upon social values and beliefs, or physical land/water use conflicts, and to discuss the effectiveness of the planning system as a mechanism for resolving these conflicts.

The introductory chapter explains the nature and scope of the work, including the methodology used in researching the project and the national policy context. The next chapter considers what the conflicts are between water recreation and nature conservation, and is divided into two sections, one looking at the coast and estuaries while the other considers the nature of the problem on inland waters, that is enclosed waters and rivers. Next, to what extent these issues are evident in the chosen case study area of Essex is discussed through the examination of a number of selected sites from within the County, which will include both inland

and coastal areas. An assessment will be made as to where the impact of water based recreation on the natural environment is greatest.

Following on from a study of each site the thesis will go on to examine the role of the planning system and ways in which it has attempted to resolve the conflicts and how effective these methods have been. Then, by means of a conclusion possible ways forward will be suggested and what further contributions Local Planning Authorities and the planning system in general can make towards resolving the conflicts between the two sets of interest. It will become increasingly apparent that the key words are "co-ordination and co-operation", and that the planning system can certainly make a significant contribution to overcoming the conflicts.

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CHAPTER 1
INTRODUCTION

1.1 The Issues

Environmental protection and the provision of recreational facilities are both current topics of debate within the planning profession, and have received a great deal of attention over the past decade by planners and the government alike. The aim of the thesis is to add to the debate and by focusing on the conflicts between water recreation and nature conservation to consider ways forward in planning terms for overcoming the conflicts.

The past two or three decades have seen an enormous increase in outdoor leisure activities in Britain, water recreation is no exception with growth evident in both coastal and inland waters. This growth in participation in different forms of water recreation, increasing car ownership and improved roads are all contributing to the demands on both coastal and inland waters.

Alongside this growth in water recreation there has been a growing awareness and concern over the environmental impact of recreational activity with

the concentrated use of sites promoting environmental damage. Certain bodies of opinion argue that an expansion of recreational activities on enclosed inland waters and the coast may lead to conflict with conservation interests particularly in regions where comparatively large areas of land are subject to conservation designations. This concern provides the basic context for the thesis.

The principal aim of the thesis is to discuss the effectiveness of the planning system as a mechanism for resolving the conflicts that occur between water based recreation and conservation on both inland and coastal waters. After discussing the methodology and national policy context the thesis will go on to examine the conflicts between the two interests, what they are and on what scale they occur. Here a distinction will be made between land use conflicts that is the actual physical impact of water recreation upon the natural environment which will cover such things as disturbance and habitat destruction/ degradation; and the conflicting values and social interests at stake, that is those concerned with protecting the resource versus those concerned with using the resource for recreational activities. Very often conflicts are the result of different and competing interests and perceptions that are either uninformed or unwilling to

compromise, as some sites are of such value to both sport and nature conservation. This chapter will be divided into two sections , with one discussing the coast and estuaries and the other inland waters and rivers. Reference will be made to specific recreational activities and their environmental impact and a comparison between the habitats will be made.

Following on from this in order to illustrate some of the issues and conflicts a number of case studies will be taken from within the County of Essex. The coast of Essex is of great recreational value and growth in the participation in different water based activities has been significant, which is a result of an improved road network and increase in disposable income and mobility, placing the coast within relatively easy range. But the coast is also extremely important for nature conservation comprising a number of important habitats which support nationally and internationally important bird species. These habitats are therefore, particularly sensitive to growth in water pursuits. The Blackwater Estuary and Hamford Water will be taken as case studies to illustrate the issues along the coastline.

Enclosed waters are a scarce resource: in fact there

are no natural lakes in the County. The reservoirs, all of which are man-made, are of high nature conservation value which makes them unsuitable for extensive multi-use, although there are facilities for recreation on a few. Hanningfield Reservoir to the south of Chelmsford, which is owned by Essex Water Company, will be taken as a case study. Finally there are the rivers which are of recreational value in the County, but again are important for conservation, with river valleys often coinciding with the designation of Special Landscape Areas where planning policies seek to protect visual amenity. The River Stour in the north of the County will be used as a case study in this instance.

In addition to the aforementioned case study sites, the Lee Valley Regional Park will be used as a final site study illustrating the fact that even in an area whose main aim is to provide for recreational needs both land and water based, conflicts of interest can still occur between recreation and nature conservation.

Following on from a discussion of the conflicts between nature conservation and recreation the thesis will analyse the role of the planning system in this debate. This will encompass an examination both of Central Government policies and of the role

of local planning authorities. Topics to be included will be Coastal Zone Plans, Structure and Local Plans, Supplementary Planning Guidance, the Development Control Process, and Management Plans.

Examples will be used wherever possible. An attempt will be made to assess the planning systems performance to date and then by means of a conclusion to suggest possible ways forward and the options open to local planning authorities and the planning system in general.

It is apparent that the thesis topic raises some relatively subjective issues with no straight or easy answers, although the aim is to suggest a positive, balanced approach (via the planning system) to resolving the conflicts between water recreation and nature conservation. There is obviously a need to make judgements as to whether conservation should take precedence over recreational interests or vice versa, in suggesting an approach/solution to the problems. It must also be recognised that the chosen topic is part of a much wider debate on (i) Coastal Zone Planning, (ii) providing for water sports both inland and on the coast, and (iii) environmental protection and so any solution must take this into account.

1.2 Methodology

In order to produce a comprehensive and balanced view a wide range of data sources have been used including Planning Policy Guidance Notes (PPGs), Acts of Parliament, and publications and policy statements from organisations with a remit for nature conservation and/or recreation, such as the Sports Council, Countryside Commission, National River Authority (NRA), Essex Water Company, Royal Society for the Protection of Birds (RSPB) and English Nature. Information from the State of the Environment Report for Essex was also used into which the author made a significant contribution.

Additionally a number of structured interviews were conducted with selected organisations. The organisations were chosen because of their close involvement in many of the issues to be raised in the thesis. Their interest in the subject matter was apparent due to recent publications and press coverage in planning magazines and newspapers. The organisations interviewed are listed in Appendix 1, with a sample interview sheet. The principal aim of the interviews was to obtain their opinion on the chosen discussion area and acquire their view on action areas.

In addition to the interviews, a number of postal questionnaires were carried out, with the same objective as the interviews. Again the organisations were selected because of their knowledge of conservation and recreation issues. Appendix 1 lists these organisations. Essex District Councils whose area covers the chosen site studies were also contacted for more detailed information on the sites.

Both the interviews and postal questionnaires proved to be a useful source of information and replies illustrated clearly the differences of opinion that exist between nature conservation bodies and recreation organisations on the impacts of water based recreation on the natural environment. These different interests and values could be the root cause of all the conflicts.

1.3 National Policy Context

The passing of the Planning and Compensation Act in July 1991 heralded a new approach to planning. Consequently, Central Government is reviewing much of its planning policy guidance including PPG17 on Sport and Recreation. This gives guidance to local authorities to provide positively for water recreation through the imaginative use of redundant

mineral workings, disused commercial docks and redundant agricultural land in proximity to inland or tidal water. PPG15 Development Plans and Regional Planning makes it clear that Structure Plans should include strategic land use policies for leisure and recreation. It also advocates that development plans should be drawn up in such a way as to take environmental considerations comprehensively and consistently into account.

PPG 20 on Coastal Planning acknowledges that the coast as an important national resource. In referring to water recreation it advises local authorities to base policies on an assessment of the capacity of the local environment to accommodate further water recreation. It makes it clear that planning in the coastal zone requires a good understanding of natural resources.

PPG 21 "Tourism" although not directly related to the thesis topic, should be referred to as obviously any growth in tourism may increase the demand for water recreation, and therefore, putting increasing pressure on coastal and inland waters. It makes it clear that the overall objective is to achieve 'sustainable development' that serves the interests of both economic growth and conservation of the environment.

The draft PPG on Nature Conservation states that all concerned with land use and nature conservation should ensure the effective conservation of wildlife and natural features while making adequate provision for development and economic growth. Nature conservation interests are considered to be a material consideration in determining many planning applications.

In addition to the PPGs the Government launched in 1990 the White Paper"This Common Inheritance" publicised as Britains first comprehensive survey of all aspects of environmental concern. It recognized that Local Planning Authorities have a key role to play in helping to achieve the vision for Britain and the environment in the 1990s. It covers aspects of both nature conservation and recreation and recognises that some areas are valuable to both. It paved the way for many of the fore mentioned PPGs.

One other notable document of significance to the discussion is the House of Commons Environment Committee Report on 'Coastal Zone Protection and Planning'. It recognises that coastal areas are used by a large number of people for a wide range of recreational activities and yet it is also a distinctive element of our landscape and home for many internationally important species of plants and

animals. It calls for an improvement in co-ordination between agencies with an interest in the coastal zone area. The government has since responded to this report agreeing that the coast is inevitably a place where many interests meet and sometimes conflict. It proposes to encourage the preparation of management plans.

This guidance is all very well but has it gone further enough in promoting a greater understanding between nature conservation and water recreation interests, and overcoming the conflicts? A critical review will occur in the latter part of the thesis.

Of course it is not only the government that is publishing advice, numerous organisations with an interest in water recreation and nature conservation are publishing their own policy documents. The National Rivers Authority (NRA) is placing an increasing emphasis on its recreation and nature conservation remit which is evident in its corporate plans. Additionally it is about to embark on research into the effects of recreation upon nature conservation. The private Water Companies are also attaching greater importance to their roles as providers of recreation and protectors of natural resources. The RSPB has produced a number of reports on estuaries and the coastline including 'Turning

the Tide' and 'Marina Developments in Southern England'. Finally both the Sports Council and Countryside Commission are advocating a greater integration of and understanding between, water based recreation and nature conservation.

To begin with therefore, the thesis will consider the conflicts between water based recreation and nature conservation on coastal and inland waters, which will give a general overview of the broad issues and areas of debate.

CHAPTER 2
THE CONFLICTS

2.1 Introduction

Water Sports have been growing rapidly in popularity over the last 20 years, and this growth in demand is evident in both coastal and inland waters. The newer sports of jet ski-ing, water ski-ing and windsurfing in particular have witnessed a rapid growth. This has led to major concern over the disturbing effects of these activities on overwintering wildfowl and over other environmental impacts of water recreation upon the nature conservation value of an area.

Published statistics on the demand for and participation in water sports are very limited, which is a result of the difficulty of obtaining data on a market which is very diverse and fragmented: However a comprehensive set of forecasts for a range of water sports has been published by Leisure Consultants, who expect to see an overall growth of 36% in adult participation in water sports between 1988 and 2000. Four sports are named as likely to witness the greatest increase in numbers. These are power boating (+50% between 1988 and 2000); sailing (+40%); Jet Ski-ing (+120%); and board sailing (+33% in numbers between 1988 and 2000).

As will be discussed later in the chapter it is these sports that come into greatest conflict with nature conservation; and their growth has coincided with increasing concern for environmental protection. Table 1 illustrates this potential growth, while Table 2 shows the participation levels of various water sports in 1988.

TABLE 1
Forecast increase in boating 1988-2000. British adults aged 16+ taking part at least four times a year.

Numbers (millions)	1988	1992	1996	2000
Sailing	1.5	1.64	1.85	2.10
Power Boating	1.0	1.12	1.31	1.50
Any Water Sports	3.0	3.23	3.62	4.09
Participation Rate (% of GB population)				
Sailing	3.4	3.7	4.1	4.7
Power Boating	2.3	2.5	2.9	3.3
Any Water Sports	6.8	7.2	8.1	9.1
Growth Rate (%pa)	**1988-92**	**1992-96**	**1996-2000**	
Sailing	2.2	3.1	3.2	
Power Boating	2.9	3.9	3.5	
Any Water Sport	1.9	2.9	3.1	

Source: Leisure Consultants, 1989 in R.Sidaway "Marina Developments in Southern England"; 1991.

TABLE 2
Participation Rates in Water Sports 1988

Activity	Number (000,s)	Participation Rate (% of GB population)
Sailing	1500	3.4
Power Boating	1000	2.3
Canoeing	800	1.8
Wind Surfing	600	1.4
Rowing	400	0.9
Water Ski-ing	400	0.9
Sub-Aqua	90	0.2
Wet Biking	90	0.2

NB. (1) The figures are based on participation at least 4 times during 1988. (2) Wet Biking is commonly known as Jet Ski-ing.

Source: Leisure Consultants - Boating and Water Sports in Britain. 1988.

Tables 3 and 4 indicate the growth in popularity of two water sports - yachting and water ski-ing illustrated by the growth in membership of the respective Associations.

Water bodies are extremely vulnerable ecosystems whose functioning can be readily altered or even destroyed by quite small changes in their environment. Interference and human disturbance in aquatic environments can, therefore, be more far reaching and potentially damaging than similar actions in important landscape areas.

Most water bodies are attractive to a variety of users whose needs may conflict. Active sports such as power boating and jet ski-ing conflict with quiet leisure pursuits such as swimming, and may also be incompatible with other interests such as nature conservation. Much of

the problem results from a shortage of water space particularly in areas where recreational need is greatest.

TABLE 3
Royal Yachting Association Membership

	1980	1985	1986	1987	1988	1989
Number of affiliated clubs	1,468	1,496	1,502	1,500	1,487	1,500
Number of individual members	41,361	55,532	58,532	62,453	63,927	67,704

Source: Sports Council - A Digest of Sports Statistics for the UK - 3rd Edition.

TABLE 4
British Water Ski-Federation Memberships

	1980	1989	1990
Number of affiliated clubs	155	159	170
Number of individual members	10,375	9,788	14,000

Source: Sports Council - A Digest of Sports Statistics for the UK - 3rd Edition.

Recreational disturbance of wildlife commonly occurs but given the adaptability of wildlife the crucial question is at what level does such disturbance matter? Also are the impacts of water recreation upon the nature conservation value of an area as great as some

conservationists would lead us to believe, or is the conflict being exaggerated? These are issues to be addressed in this chapter.

It has been argued by the RSPB (1990) that there are six principal factors which determine the responses of wildfowl to recreation. These are the species, its activity, the nature of recreation, size and character of the waterbody, and the distance from alternative sites. It may also be suggested that these factors help to distinguish between the problems on the coast and those on inland waters; with the problems being significantly greater on the coast, for birds that are largely confined to coastal habitats are experiencing losses in feeding grounds that cannot be found elsewhere, whereas birds using inland waters may be able to use alternative sites. These differences will become apparent in the discussion which is to follow.

When discussing the conflicts between nature conservation and water recreation most think in terms of the actual land use conflicts and physical impacts such as disturbance as mentioned above. However, there are another set of conflicts that are not directly visible and those are the social conflicts, which arise when one or more of the following circumstances arise:

(i) Divergent philosophies, when strongly held beliefs of the freedom to use the countryside and water resources

for recreational pursuits clash with the beliefs that the conservation of species should be held paramount.
(ii) A lack of basic understanding of the relationships between species or habitats and man.
(iii) Situations when neither conservationists nor recreational participants may be open-minded enough to change; and (iv) poor communication.

This line of argument will be discussed in full and the question raised as to whether there would be any conflict at all if recreation organisations and participants, and conservationists understood each other's values and perceptions and co-operated more fully to overcome any land use conflicts.

2.2 The Coast

The scenery and habitats of the coast are many and varied from open sea to saltmarsh, and small estuarine creeks to vast intertidal flats. The wildlife that these areas support is equally varied and of great significance. It is the estuaries that are considered to be the most valuable in terms of nature conservation, and so it is these that will be concentrated on, for estuaries are also a recreational magnet being both extensive and accessible.

Estuaries the muddy fringe around our shores where rivers

and sea meet are places with an immense wildlife value. They consist of a complex mosaic of subtidal, intertidal and surrounding terrestrial habitats. Estuaries are among the most biologically productive systems in the world; the intertidal muds and silts support many invertebrates and are the source of much of the richness of the estuarine ecosystem. Other habitats of great wildlife importance include salt-marsh, sand dunes and shingle structures which are important geomorphological features with characteristic vegetation and animals. Coastal grazing marsh is associated with a number of estuaries in Britain which support a large variety of often rare or scarce plants especially in the ditches. Additionally, these habitats support nationally and internationally important bird species.

In recognition of the diverse and abundant wildlife importance of Britain's estuaries, many have been designated or identified under a variety of domestic and international measures both statutory and non-statutory. These include Sites of Special Scientific Interest (SSSI's) designated because of their special interest in terms of their flora, fauna, geological or physical features. In addition National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) offer site protection. These British conservation measures derive primarily from the Wildlife and Countryside Act 1981 and its amendments. In addition the Government is party to a number of

international agreements which oblige Britain to identify and safeguard internationally important areas for birds and their habitats, especially the wetland habitats and waterfowl for which British estuaries are so important. These include Ramsar and Special Protection Areas (SPA's), the objectives of which are to stem the progressive damage and loss of wetlands.

In addition to the coast being an important nature conservation area, it is also a significant recreational resource providing facilities for a wide variety of water based sports. These include motor boat cruising, speedboats, powerboats, yachting, dinghy sailing, water ski-ing, jet ski-ing, sail boarding, canoeing, sea angling and swimming. Each place different requirements on coastal areas. Dinghies need more sheltered waters such as those provided by estuaries, creeks and foreshore, while motor cruisers and yachts require moorings at marinas or in tidal areas which dry out between tides. Water ski-ing has increased in recent years on coastal waters particularly in creeks and backwaters where sheltered water is available; as has windsurfing/sail boarding which has attracted thousands of participants with no previous experience of watersports. Jet ski-ing has become an increasingly popular watersport in the last few years. Jet ski's can be launched practically from anywhere where it is possible to get a trailer within 100 metres or so from

the waters edge. Presently it is a largely unorganised sport.

The coast and estuaries are therefore, one of the most biologically rich habitats in Britain, but they are also the most threatened largely due to human activity. The number of threats, their widespread nature and the difficulty in predicting the effects of piecemeal development on the flora and fauna of the coastline constitutes a complex problem. Recreational pressures constitute just one of these threats, that can result in conflicts with nature conservation interests.

The growing interest in water and waterside pursuits has placed significant pressure on coastal areas. The RSPB recently conducted a survey of 123 estuaries in the UK the results of which indicate that recreational pressure is the greatest threat to estuaries (see table 5). The survey was undertaken by sending out questionnaires to the regional offices of the RSPB asking what the real threats were to the estuaries in their area ie.the number of planning applications submitted for the estuary; and also what the perceived threats were. This however, must be treated with care as part of the survey is obviously based on subjective view points. However, this year the RSPB is undertaking a survey which will just examine the real threats.

TABLE 5
Threats to coastal habitats

Type of Threat	Number of Estuaries affected
Recreational Pressure	49
Marinas	33
Pollution	29
Land Claim	29
Barrage	22
Bait Digging	17
Industry	17
Cockle Fishing	15
Port Expansion	14
Sand Winning	8
Wildfowling	8
Fish Farming	3

Source: RSPB "Turning the Tide" (1990)

The Sports Council (Eastern Region) are of the opinion that conflicts occur only in isolated cases where nature conservation is of paramount importance, and argue that it is difficult to quantify 'long term' damage, and consider it is more a question of perception rather than actual damage.

It is possible to divide the conflicts into four main types - Disturbance; Land claim; Habitat degradation; and conflicting values and social interests. Each will be discussed in turn except the latter which will be discussed after a consideration of the conflicts on inland waters as it applies to both habitats.

(i) Disturbance

The widespread use of estuaries for water based recreation is of increasing concern due to its ability to cause severe disturbance to wildlife particularly nesting birds in summer and roosting wildfowl during non-breeding seasons. All the conservation bodies interviewed sited disturbance as one of the main if not the main conflict, while the recreational organisations in particular the Water Ski-ing Federation and Jet Ski-ing Association argued that there was no problem if the sport was managed properly. The Sports Council (Eastern Region) did, however, recognise that there was a problem of disturbance to roosting/feeding birds.

It would appear that the problem of disturbance is a very real one. Increasing windsurfing, jet ski-ing and dinghies coupled with greater informal recreation all lead to pressure on coastal birds both at roost sites and when feeding. The presence of such activities can exclude birds from large areas of their natural habitat and deny them feeding opportunities. But whether it has a long term impact thus reducing the nature conservation importance of an area, is something that needs to be examined.

Different activities cause differing levels of disturbance to birds. Swimming for example, can cause

disturbance to beach breeding birds such as terns and plovers, although it is unlikely it will be as great as the disturbance caused by jet skis which because of their ubiquity, speed, and manoeuvrability can go into shallow water, and deep into the backwaters and creeks which can cause immense problems of disturbance.

Yachting has increased rapidly in south and south-eastern England, and to a lesser extent on north western and north eastern coasts. The impact of yachting as with motor boating varies with its scale, the areas used and time of year. In the majority of cases it is a summer activity, a period when duck numbers are low, thus reducing the disturbance potential. However, the effect on breeding birds has caused concern. The use of sail boats and motor boats has opened up remote beaches and islands normally secure from access, which has particularly effected ground nesting birds such as the little tern which is in consequence declining as a breeding species, and so in this instance there is evidence of a long term effect which is obviously a more serious problem.

One of the greatest problems linked to yachting is the building of marinas on intertidal flats. A marina may be relatively small but if sited on a sensitive area its effect could be out of proportion to its size. Some waders and Brent Geese are willing to feed among boats

lying on the mud but will move away if anyone is working on them.

Additionally disturbance can occur when boats head out to sea and pass close to islands and saltmarshes which are breeding haunts of ducks, waders, gulls, terns and birds such as the meadow pipit, reed bunting and skylark. Breeding birds can be put to flight unnecessarily.

Water Ski-ing is also regarded as a threat to nature conservation primarily due to the disturbance and noise from water ski boats. Windsurfing which has been one of the fastest growing areas in sailing in recent years can result in disturbance to wildlife that the coastal habitats support, because like other water craft they sail close to the high water mark. Koeff and Dietrich (1986) have suggested that windsurfing may cause more disturbance than other water craft because the movements of a windsurfing may be erratic and are likely to involve raising and lowering of the sail. However the newer sport of jet ski-ing may also involve erratic movements, and it has been known for one jet ski to put birds in a vast area to flight.

Finally bait digging which is often undertaken for leisure purposes can result in disturbance as the presence of bait diggers denies birds access to their main feeding grounds at the crucial and limited period of

low tide.

Disturbance at roost sites which can result from recreational activities can have a significant impact on the energy requirements of birds. Heavy disturbance at roost sites can force birds to spend an entire high tide period on the wing. This means that they need a vast increase in food take. However, the presence of such activities as windsurfing and jet ski-ing can exclude birds from large areas of their natural habitats and feeding opportunities. Work on the Dee Estuary for example has shown links between roost disturbance and the displacement of up to 90% of local bird numbers. Other studies have shown that interference from recreational activities causes brent geese to spend 1.7% more time in flight and reduce their feeding time by 3.5%.

The conflicts between recreational activities and over wintering birds can be reduced by the close seasons which curtail most recreational activities during the winter when over wintering populations are at their highest levels. However concern is now mounting over the extension of the same activities into the winter such as angling, sailing, and in particular windsurfing. If this trend continues conflicts between nature conservation and recreation will heighten.

From the evidence it is very difficult to assess whether

the issue of disturbance is a long term problem. It must also be noted that the effects of disturbance are extremely difficult to quantify not least given our scant knowledge of the complex interrelationships which govern numbers, breeding success or social behaviour of most bird species. Additionally the multiple use of a site either concurrently or successively complicates the assessment of different forms of recreation. However, it can be argued that two things are certain:

(i) If recreational activities in an area are continual ie. occur on a regular basis throughout the year it is likely that birds will stay away from the site thus reducing the nature conservation importance of the area; and (ii) If recreational pressures on the coast continue to increase, again birds may not use the sites where recreational use is increasing.

Both these factors could lead to a long term problem of disturbance, and provide an answer to the question at what level does disturbance matter; in that if the conservation importance of an area is reduced then disturbance is a problem that needs careful consideration.

(ii) Land Claim

The situation for migratory waders which are largely confined to coastal estuaries is critical, as developments threaten to make significant reductions to

their feeding grounds.

The increasing interest in yachting and boat ownership has led to an expansion in the demand for facilities notably marinas. Currently there are 154 marinas in estuaries around the UK. In many cases marina development involves land claim and direct loss of intertidal areas.

Land Claim, which is the most dramatic and easily appreciable result of leisure sailing has many impacts on estuarine wildlife notably the disproportionate loss of saltmarshes and upper tidal flats, the overall reduction of estuarine biomass and production, and the reduction in the size of some of the internationally important bird populations, on at least individual estuaries.

Continuing habitat loss will further reduce an already much diminished resource and will force development and recreational land uses into increasing conflict with wildlife on the remaining areas of estuarine habitat.

(iii) Habitat Degradation

In addition to the actual habitat loss, water based recreation can also result in habitat degradation. The wave motion and wash created by water ski-ing for example can result in erosion problems in these vulnerable

habitats; windsurfers can also cause damage to sensitive habitats such as saltmarsh, shingle beaches or lagoonal systems.

The effects of sewage pollution from large numbers of yachts is of concern. Leisure sailing and moorings development can exacerbate pollution on the rural coastline through oil and petrol spillage, sewage and chemicals.

Finally bait diggers which mainly supply recreational fishermen are a cause of concern because they damage eel grass beds and take the shoreworms that are the food of many shorebirds.

2.3 Inland waters

Fresh water is one of the most valuable resources. Some 14% of waterbodies in Britain occur in lowland regions including both natural sites and artificial ones such as gravel pits and reservoirs. A significant proportion combine good physical form with productive aquatic systems and so can be very attractive to waterbirds.

Artificial waterbodies, particularly reservoirs and extraction pits are important for wildfowl, holding nearly 20% of the British wintering population. Since 1968 wintering waterfowl populations on gravel pits have

more than doubled and they now hold more than 7% of the British total. In general terms, Britain is less important in international terms for breeding waterfowl. However, artificial waterbodies do hold about 40% of the national breeding totals notably great crested grebe, tufted duck and coot. Enclosed waters are also important during the late summer and autumn when birds particularly gadwell, pochard and tufted duck gather to moult on undisturbed sites with good food supplies and during spring and autumn when they act as staging posts for migrants.

In addition to being important for nature conservation, inland waters are also required for a variety of recreational pursuits. The level of demand has greatly increased over the last 30 years and there has been an extension of recreation into the winter months. It is likely that the recent privatisation of water authorities wil increase the provision and promotion of recreation to generate profit.

Reservoirs and gravel pits coincide with areas of high human population, notably the conurbations of the Midlands and London, where the pressure for recreational facilities is high. Like the coast various activities occur on inland waters including angling, canoeing, water ski-ing, sailing, and windsurfing. Additionally there is increasing pressure to accommodate the water sport of jet

ski-ing.

Like the coast, therefore, inland waters are important nature conservation areas and yet also have to sustain a high pressure of use. Enclosed lakes and reservoirs are a scarce resource and are therefore, likely to become extremely congested; while Britain's navigable rivers are also used intensively for a full range of water recreation and the unnavigable rivers are used exclusively for angling. Water authorities now have a statutory responsibility to promote both water recreation and nature conservation, and the conflict between these can present some serious problems. The discussion will focus predominantly on enclosed inland waters not least because this is where the majority of conflicts occur.

As with the coast by far the biggest issue is disturbance, and to what extent this is a problem, for if it is a short term phenomena then any conflict between the two interests is minimal; however, if there is a long term impact then obviously the problem is much more serious. The issue of land claim is negligible on inland waters, but a certain amount of habitat degradation does occur as a result of recreational pursuits.

(i) Disturbance

The rapid growth of water sports in recent years

particularly on enclosed inland water has led to a major concern that the disturbing effects of these activities on overwintering wildfowl would seriously affect the success of the species. It is possible to distinguish between disturbance and impact, where disturbance is the immediate effect of interference and impact may be considered as the long-term effect on survival and breeding success. It may be described as a more serious form of disturbance.

It is generally argued that disturbance affects wildfowl temporarily and locally, probably redistributing birds among lakes, reservoirs and gravel pits within the region, but the effects are negligible on a national scale. However, if inland waters are limited within a region, or all inland waters in the immediate area are also used for recreation, then the birds have no alternative sites. Additionally if the birds are forced to move away from the water due to the intensity of the activity, then the conservation value of that site is immediately reduced.

The effects of disturbance on wildlife are subtle, usually difficult to document and rarely measurable directly. It is usually rapid movement rather than noise that is the problem as birds can tolerate noise particularly if it is constant. It is possible to distinguish between the effects of different activities.

Windsurfing and water ski-ing requirements for open water closely match those of overwintering wildfowl. Just as larger areas of water are likely to attract a wider variety of waterfowl so too are they likely to appeal to most water sports. The essence of this problem is a conflict of interest. Windsurfing has a disproportionate effect as the shallow draught of the boards allows access to shallow water and all year round activity. Even a few windsurfers have been shown to cause decreases in species of waterbirds.

Angling is one of the most popular sports in England and Wales. Some 3.4 million people fish, of whom coarse anglers are the most numerous. The effects of angling have received a great deal of attention partly because it has been regarded as a major cause of disturbance to waterbirds in winter. A study undertaken by the RSPB into the overall effects of various activities on birds based on the total number of wintering species per month and declines associated with each activity, indicated that nationally, coarse fishing was the most disturbing water sport. Power boating and water ski-ing were found to be the least disturbing. This, however took no account of the disturbance each sport would cause to wildlife on a local basis.

Most of the conflict between anglers and wildlife on enclosed waterbodies has come from the extension of the

game fishing season into the winter months when enclosed waters contain large numbers of wintering wildfowl. The arrival of anglers at the waterside during the winter and early spring may disturb wildfowl. Disturbance can occur at the start and finish of the fly fishing season when wildfowl are present in considerable numbers.

Waterbirds may also be affected because boats can move over a large area of water surface and get close inshore. Additionally high densities of boats may be present and sailing may occur for many hours of the day as well as throughout the winter season when birds are most vulnerable to disturbance. Sailing principally affects birds such as grebes and diving ducks that use deep water. Where there is no refuge area, where water bodies are small or where the banks are disturbed, other bird species such as wigeon, teal and mallard which use marginal habitat have been observed to decline in numbers.

Power boating on enclosed waters may result in birds failing to breed; and if the recreational activities are constant the bird numbers may never regain their former levels thus resulting in a decline in the nature conservation importance of the area.

Once birds are disturbed they may either fly to other sites or redistribute themselves around the site if it is

extensive enough to allow them to keep recreation beyond their tolerance distance. The tolerance distance of birds varies with the physical nature of the environment and whether the bird is on water or land. One way of illustrating the effects of recreation on water birds distribution is to divide the site into zones and record birds and recreation in each. This method was used to illustrate how the position of anglers boats affected wildfowl distribution on Llandegfedd Reservoir, Gwent. It indictated that with the start of the fishing season, there were observable declines in the numbers of wigeon , teal, mallard and pochard using the reservoir. In 1984 this led to the bird species leaving their preferred sector of the reservoir completely as a result of disturbance and some left the reservoir prematurely; while in 1985 the birds concentrated in the central sector of the reservoir during the fishing season, but from day one of the closed season and throughout most of the winter used one or more sections in the northern sector of the reservoir.

It is often argued that disturbance of over-wintering birds by recreational activities is largely reduced by the close seasons which curtail most recreational activities during the winter when over wintering bird populations are at their highest. However, with recreational pursuits increasingly starting to extend into winter, concern over the impact on birds is

increasing.

The widespread use of rivers for angling, boating and canoeing has developed relatively recently. This growing popularity is placing increasing pressure on a precious and vulnerable resource. These activities can cause disturbance on some rivers and associated wetlands which are of high nature conservation interest and have been designated as SSSI's. Breeding river birds are particularly sensitive to disturbance, with the critical period being mid March to the end of June.

If birds are forced to leave sites permanently, due to recreational activity as can often be the case, then obviously the problem is a long term one. Compared to the coast it would appear that the problem of disturbance although great is not as serious as on coastal habitats because birds that use inland waters very often have other sites they can use; where as on the coast as recreational activity increases the number of sites birds can use without being disturbed is decreasing.

(ii) Habitat Degradation

In addition to disturbance, water sports may directly affect the habitats. The ecological balance of waters may be upset by anglers for example, by the stocking or removal of fish species, and boating may cause pollution

problems with ecological effects; as well as increasing turbidity which results in an acceleration of bank erosion. On the Norfolk Broads for example pollution from boats has contributed to their chronic eutrophication that has led to the loss of much wildlife from one of the richest wetland areas in the country.

The net result of recreational pressure in wetlands is the impoverishment of aquatic flora and fauna through the disappearance of species.

Motorised boats have an impact upon habitats which is particularly evident on canals. Submerged, floating and marginal plants suffer physical damage and uprooting caused by propeller action, boat wash and the impact of moving hulls. Submerged vegetation is additionally affected by increased turbidity because sediment suspended in the water reduces the penetration of light and slows down photosynthesis.

Power boats and water ski-ing can result in some habitat degradation including erosion of banks, stirring up sediments, chopping vegetation and releasing oil which can harm the food of waterbirds and damage plumage.

The growth in the popularity of canoeing has resulted in increased pressure on water resources and increased the potential for conflict. A rise in numbers has led to a

more intensive use of waters, and cheaper, lighter and more robust canoes have increased mobility and allowed canoeists to make to make greater use of previously less accessible stretches of water, which often are not subject to rights of navigation; and therefore canoes may be damaging habitats in previously undisturbed areas.

2.4 Conflicting Values and Interests - Coastal and Inland Waters

This chapter has so far discussed and examined the actual land use conflicts between water based recreation and nature conservation, but is possible to identify another set of conflicts that apply to both inland and coastal waters, that is conflicting interests and values.

In some cases the conflicts of interest are deep rooted and based on clashes of values and not just people being unreasonable. Seen from their own perspective each interest behaves quite rationally, but the rationality is not evident unless the underlying beliefs and motives have been identified and understood.

The Sports Council (Eastern Region), in particular, agreed that conflicting values and interests do exist between conservation and recreational organisations, and refer to the fact that in certain areas sailing and boating interests may feel there is space to accommodate

extra boating capacity, whilst conservation organisations caution against further expansion.

As environmental concerns and standards of protection increase and recreational pressures grow, it seems likely that conflicts will increase, which is likely to put beliefs and values of different interests at risk. Recreational interests are in particular placed in a difficult situation having to appreciate that as we learn more about the environment our standards of protection increase and will continue to do so. The crucial issue is which claims will obtain priority in any given location as it is clear that major territorial battles are being waged.

An example of a clash of interests is a situation where conservation interests fervently oppose further development of recreational facilities along the coastline. Boating interests may appreciate their line of argument and recognise the need to protect feeding grounds but do not accept this as a sufficient reason to restrict the number of moorings. The question then must be who wins in such a complex situation ? Obviously value judgements must be made and according to R.Sidaway much is to be gained from recognising the variation of views that exists within the recreation and conservation interest groups, and under certain circumstances a greater understanding would help overcome the conflicts.

And so as a result of competition for semi-natural resources being intense and environmental concerns increasing, frequent conflicts of interest between sporting organisations and local conservation groups occurs. Very often the impacts of sports are quite local based on a specific site which can create an image of controversy which is subsequently hard to dislodge. These differing interests and values are deep rooted and it may be that resolving these would pave the way for finding solutions to the land use conflicts.

2.5 Conclusion

It is apparent from the above discussion that conflicts do occur between water based recreation and nature conservation, and by far the most important issue is that of disturbance; although the fact that the conflicting interests and values are very often based on deep rooted ideology makes this set of conflicts very serious, as it may be harder to resolve these.

Conservation organisations consider that there are serious conflicts between nature conservation and water sports, and although in some instances they may exaggerate and over emphasise the problems it must be recognised that their concerns are very real and need to be taken seriously, otherwise irreversible habitat degradation may result, in addition to declines in

internationally and nationally important bird species. Participants in water sports particularly "unattached users" eg. jet ski-iers need to appreciate and recognise that conflicts do occur and must be more sympathetic to the arguments of the conservation lobby.

What is apparent is that the situation is most critical on coastal areas, a situation which is not likely to be readily overcome, particularly as congestion is mounting on inland waters, and participants are therefore looking for alternative sites to pursue their activity on.

The chosen case study area of Essex will now be discussed with a view to providing an illustration of the conflicts at a local level. This will involve a number of specific site studies, but this will be preceded by a general overview of the situation in Essex.

CHAPTER 3
THE COUNTY OF ESSEX - A CASE STUDY

3.1 Introduction

The County of Essex with its extensive coastline, numerous rivers and a number of enclosed inland waters provides an important resource for those wishing to partake in water sports. The combination of a vast population within easy travelling distances and more time for leisure pursuits has led to a dramatic increase in the demand for water based recreation in the County, and has therefore placed increasing pressure upon the County's water resources.

The coastline of Essex when taken to include the many tidal creeks and estuaries extends for over 300 miles, and is of extreme nature conservation value. The estuarine mudflats and sandbanks are the most biologically productive habitats in Essex. Many are sites of international and national importance providing wintering grounds for wildfowl and waders that breed in Arctic regions. Table 6 illustrates this international importance.

Saltmarshes are the most natural of all Essex wildlife habitats, the majority of which lie within areas of coast

designated as SSSI's. The flora of this habitat is very specialised as the species are subject to high salt concentrations. Other habitats found along the coast include shell and shingle spits, grazing marshes and grassland. Together all these habitats and the wildlife they support make the Essex coastline one of the most important undeveloped coasts in the Country. The coast is subject to numerous designations which stress its value, including SSSI's, NNR's, Local Nature Reserves (LNR's), Special Protection Areas (SPA's), Ramsar sites, and it is to be designated as an Environmentally Sensitive Area (ESA) this year.

TABLE 6
International Importance of Essex estuaries for overwintering waders and wildfowl.

	Average Maximum Minter Count 1981-86 (% of international population)		Number of species for which estuaries are internationally important	
	Waders	Wildfowl	Waders	Wildfowl
Stour Estuary	23.8	(6.8)	3	1
Hamford Water	(17.6)	23.0	3	4
Blackwater	23.1	18.2	0	2
Crouch & Roach	(10.3)	11.2	0	1
Foulness & Leigh	52.5	21.4	4	1

Note: Figures in parentheses indicate below international importance.

Source: Moser 1987 in R.Sidaway: "Sport and Nature Conservation." 1988.

Not only is the coast important for nature conservation, but it is arguably the most important countryside

recreational resource in the County for water sports and informal use. However, intensification of recreational use combined with other competing interests has given cause for concern over the future health of the estuaries; as they are not only the most biologically rich habitats in the County but also the most threatened largely due to human activity. The growing interest in water and waterside pursuits has placed significant pressure on these areas which attract a wide range of water based sports. These include motor boat cruising, speedboats, powerboats, yachting, dinghy sailing, water ski-ing, jet ski-ing, sail boarding, canoeing, sea angling and swimming.

Marinas and mooring facilities are to be found in every estuary of the Greater Thames, which extends over the whole Essex coast. There are sixteen on the Blackwater and eight on the Crouch. Tables 7 and 8 indicate the number of moored and stored yachts and cruisers, and the number of moored and stored dinghies, sailing dinghies and tenders along the Essex coastline respectively, for 1988. Essex already has more marinas and associated developments than any other County in southern England; only Hampshire offers a higher number of berths and moorings. Although Table 7 indicates a decline in moored and stored yachts and cruisers in the period 1979-1988 the overall total is still high, with many estuaries appearing to have reached saturation point as far as

water recreation facilities are concerned.

TABLE 7
Moored and Stored Yachts and Cruiser Count 1988

	1970	1979	1988	1970-79	1979-88
Stour Estuary	199	342	219	+143	-123
Hamford Water	272	688	643	+416	-45
Tendring Coast	-	-	23	-	+23
Colne Estuary	410	423	539	+13	+116
Mersea Island	600	613	422	+13	-191
Blackwater Estuary	1419	2359	1919	+940	-440
Crouch Estuary	1256	1736	1639	+450	-97
Roach Estuary	204	307	196	+103	-111
Thames Estuary	1632	3564	3541	+1932	-113
TOTAL	5992	10032	9051	+4040	-981

Source: Essex County Council: Water Recreation Study. 1988

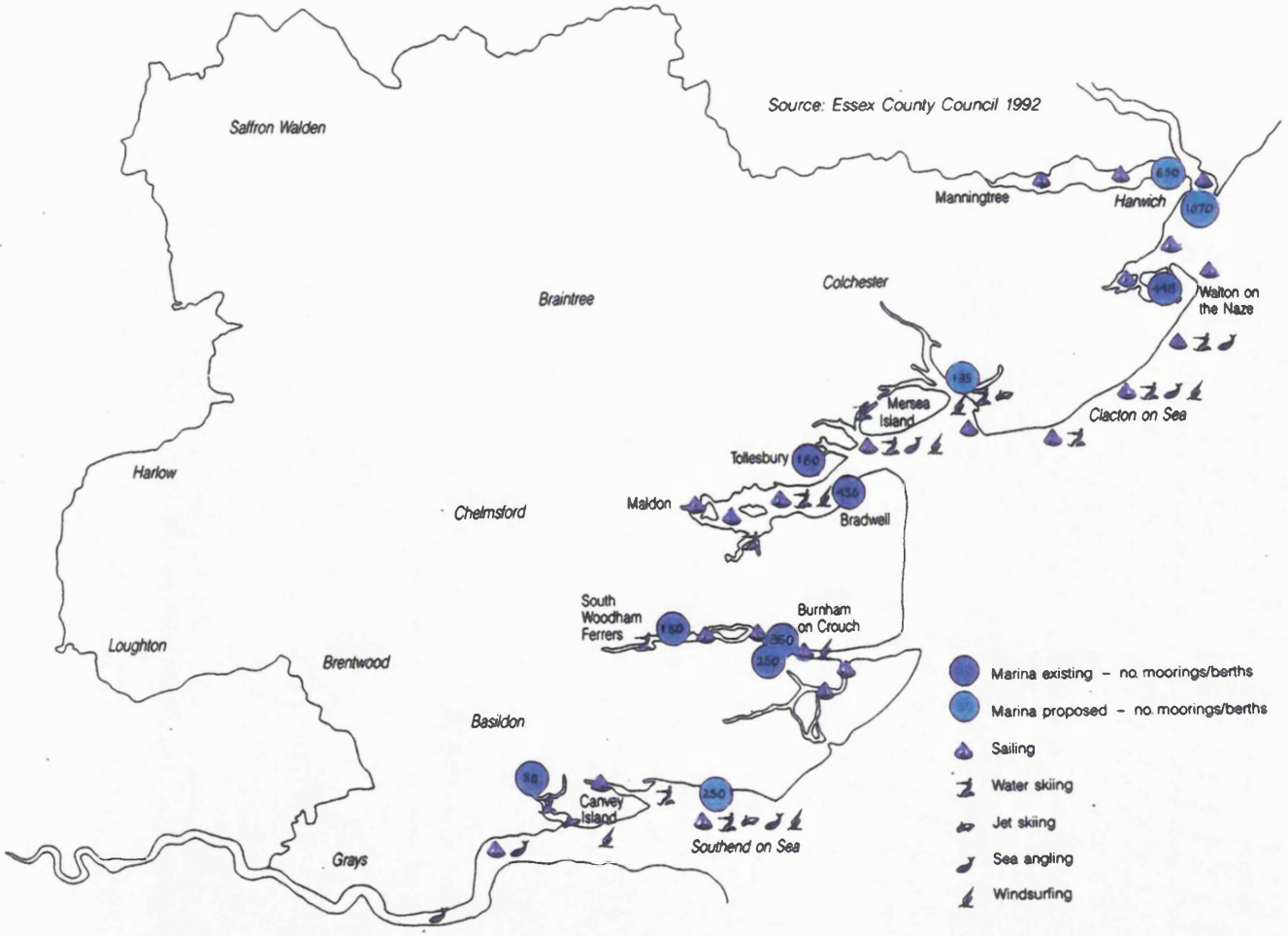
TABLE 8
Moored and Stored Dinghies, Sailing Dinghies and Tenders. 1988.

	Moored	Stored	Total
Stour Estuary	114 (10%)	260 (5%)	374 (6%)
Hamford Water	349 (29%)	332 (7%)	681 (11%)
Tendring Coast	0 (0%)	55 (1%)	55 (1%)
Colne Estuary	116 (10%)	240 (5%)	356 (6%)
Mersea Island	60 (5%)	351 (7%)	411 (7%)
Blackwater Estuary	322 (27%)	1446 (30%)	1769 (30%)
Crouch Estuary	105 (9%)	857 (17%)	962 (17%)
Roach Estuary	43 (4%)	125 (3%)	168 (3%)
Thames Estuary	73 (6%)	1071 (23%)	1144 (19%)
TOTAL	1183 (100%)	4737 (100%)	5920 (100%)

Source: Essex County Council: Water Recreation Study. 1988

Figure 1 shows the location of marinas and water sport activity along the Essex coastline illustrating how

FIGURE 1
Marinas and Moorings on the Essex Coast



extensive the use is.

Many of the conflicts discussed in chapter two are evident within Essex, in particular in relation to the coast, where habitat loss, disturbance, and habitat degradation are all visible problems.

The majority of marinas built in Essex are built on areas that were once intertidal mud or saltmarsh, which leads to a direct loss of habitat in proportion to the size of the marina and some additional loss due to disturbance over a wider area. The seriousness of a loss of intertidal habitat to birds is fairly obvious, but the Essex coast is also of international importance for some coastal plants and some rare insects. Additionally some birds are dependent upon more than one coastal site in Essex, and so any further marina development could result in a reduction in the total number of birds. For example there is known to be some interchange between certain species on the Stour Estuary and Hamford Water. However, one must be careful not to take this out of proportion, for as the Royal Yachting Association argue the amount of intertidal zone lost to marina developments may be relatively small compared to other types of land claim such as rubbish tipping and hard defence work.

Habitat degradation is also evident on certain parts of the Essex coast as a result of water based recreation.

The creation of impounded water areas such as at the heads of creeks (eg. Titchmarsh, and St. Osyth boatyard) can have a number of effects on the rest of the creek.

They increase both the volume and pressure of the water passing through the creek which together with the wave action from boats has a scouring effect on the edge of the creek. When plants are damaged and lost by the scouring effect, there is little to hold the marsh together. This effects the stability of the saltings and leads to undercutting and further erosion. Jet ski-ing and water ski-ing also have the potential to cause erosion problems due to the wave motion created by these activities which hits these vulnerable habitats. This problem is particularly evident in the Colne and Blackwater estuaries, the latter of which will be discussed in more detail as one of the site studies, along with Hamford Water. Saltmarsh loss is certainly evident along the Essex coastline but it cannot be solely attributable to the level of water recreation, although it is undoubtedly a contributory factor.

Disturbance to feeding or roosting birds on the mudflats and saltmarshes of the Essex coastline is the main conflict between nature conservation and water sports. Marinas sited deep within estuaries such as Tollesbury, or in creeks (eg. Titchmarsh) cause more disturbance to wildlife than similar developments along the sea front,

due to the fact that boats have to pass close to islands and saltmarshes which are the haunts of breeding ducks, waders, gulls and terns. Even at low tide activity in and around marinas may still result in disturbance; this is also apparent around moorings for example on the Blackwater and Colne where studies have shown that most waders distanced themselves to a greater or lesser extent from moorings. Additional disturbance problems can result from landings, for example at Colne Point and Hamford Water landings have caused the loss of nests of the little tern, which is one of the rarest coastal birds, and is particularly susceptible to disturbance.

Although the coast is the most extensive resource as far as recreational interests are concerned, Essex also has a number of freshwater habitats suitable for recreation, which like the coast are also important for nature conservation. The County has no natural lakes so its areas of standing water are either reservoirs which have been created in the last 100 years, ponds or former gravel extraction sites. Essex has a number of rivers and numerous tributaries. All the rivers are relatively short and rise within the County except the River Cam. Figure 2 illustrates the location of these freshwater habitats across the County. The mineral extraction sites are listed in Table 9, while the other enclosed waters are listed in Appendix 3.

FIGURE 2
Inland Waters in Essex

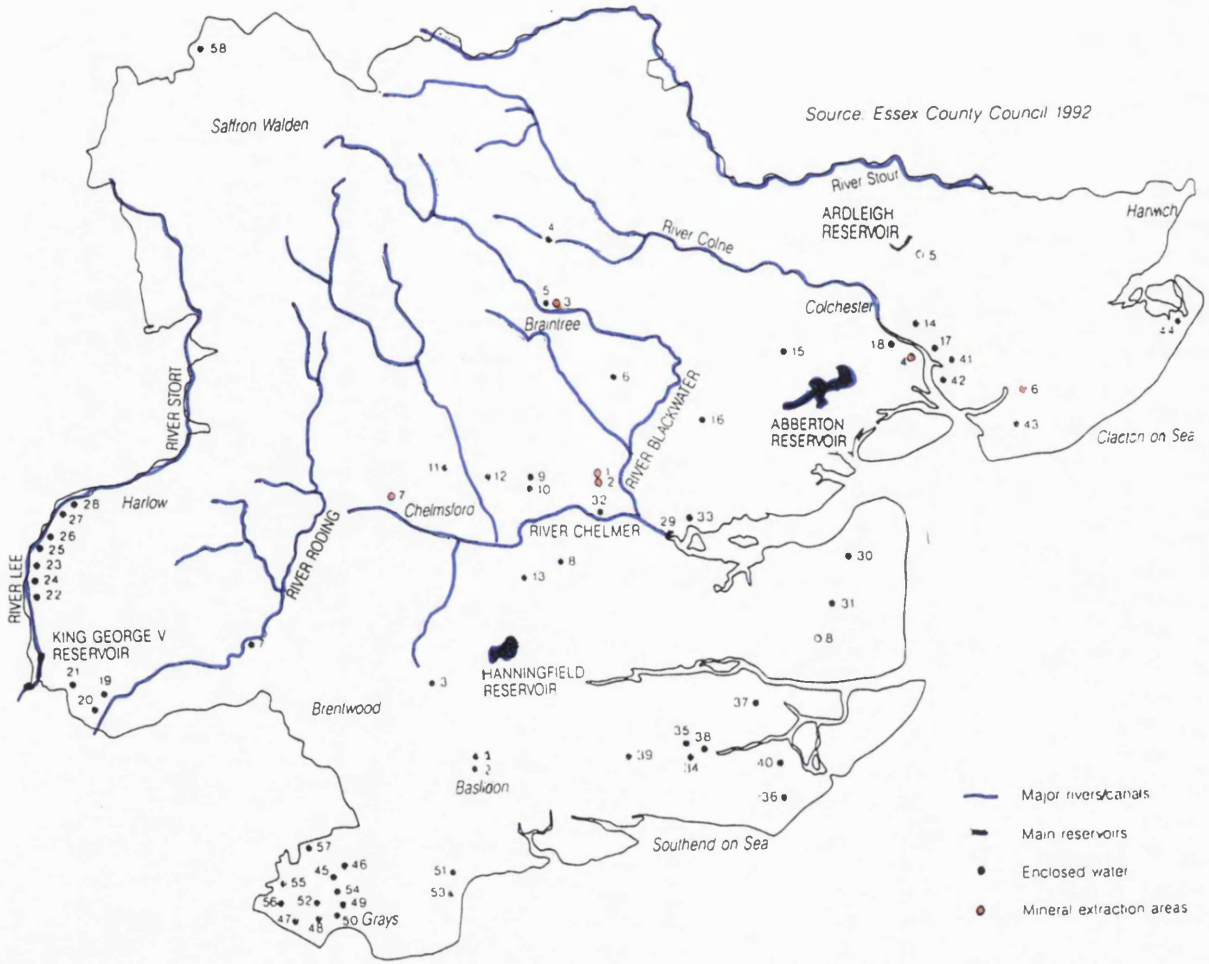


TABLE 9
Mineral extraction areas with the potential for water recreation.

Site	Hectares
1. Sandfords and Bovingtons Farms, Hatfield Peverel.	5.45
2. Grays Farm, Hatfield Peverel	2.10
3. Hatches Farm, Braintree	3.78
4. Frog Hall, Fingringhoe	2.52
5. Martells Pit, Ardleigh	3.30
6. Martins and Wellwicks Farms, St. Oysth	3.60
7. Boyton Hall/ Chignal Hall, Roxwell	2.30
8. Southminster Hall	2.00

Source: Essex County Council - Minerals Section. 1992

Enthusiasts for water sports are increasingly looking inland to reservoirs, lakes and water filled quarries for additional facilities. Unfortunately in Essex this resource is limited, particularly as the existing reservoirs have a high nature conservation value. Abberton Reservoir is the most important for bird life in the County. It is a refuge for large numbers of wildfowl and other freshwater birds. Hanningfield reservoir is also important for nature conservation, in addition to providing for recreational use. It will be discussed in more detail as one of the chosen sites in Essex as there is potential for conflict.

The main rivers are of recreational value solely from their tidal limits to their upstream limits. These include the Rivers Stour, Colne, Blackwater, Chelmer, Roding, Lee and Stort. Coarse fishing and canoeing are

two of the main activities occurring on the County's rivers. The main waterways of the River Stort, River Lee Navigation and Chelmer-Blackwater canal are used for motor cruising, which is becoming increasingly popular. The River Stort has proved ideal for such activities, but the maximum number of moorings has been reached and any increased activity would be detrimental to the waterway. However, the Chelmer-Blackwater navigation does have potential for increased usage, with the redevelopment of derelict land at Chelmsford Basin and Lawford Cut aiding this process. The River Stour which runs through the Dedham Vale Area of Outstanding Natural Beauty (AONB) will be discussed in more detail as another site study, illustrating conflicts of interest and values.

Finally, water recreation in the Lee Valley Regional Park will be discussed, providing a unique and interesting study, as it is an area devoted primarily to providing recreational facilities where the Authority has the power to produce a statutory recreational "master plan", and yet there are still conflicts of interest.

3.2 Coastal Site Studies

3.21 The Blackwater Estuary

The Blackwater Estuary is the largest estuary in Essex north of the Thames, and is one of the largest estuarine

complexes in East Anglia. It is recognised as being of international importance in terms of its nature conservation interest. Its mudflats fringed by saltmarsh on the upper shores support internationally and nationally important numbers of waterfowl which overwinter here. It supports nearly 45,000 wading birds, ducks and geese each winter with the dunlin and dark bellied brent geese occurring in internationally important numbers. Figure 3 shows the location of the site within Essex, while Appendix 4 provides a more detailed map of the study area.

Much of the intertidal area plus adjacent creeks, islands and areas of grazing marsh are covered by an SSSI; an NNR covers grazing marsh at Old Hall and intertidal areas south of Tollesbury. Additionally the whole of the estuary is a proposed Special Protection Area (SPA) and Ramsar site which is recognition of the estuary's importance for bird life.

The area has an attractive landscape which is dominated by vast expanses of open water and mudflats. The mudflats are very rich in invertebrate animals, forming an important source of food for fish and also for a large variety of wading birds which feed on the mudflats at low tide. Another distinctive and important habitat on the estuary is saltmarsh which totals 1102.85ha and represents the fifth largest area in Great Britain. The

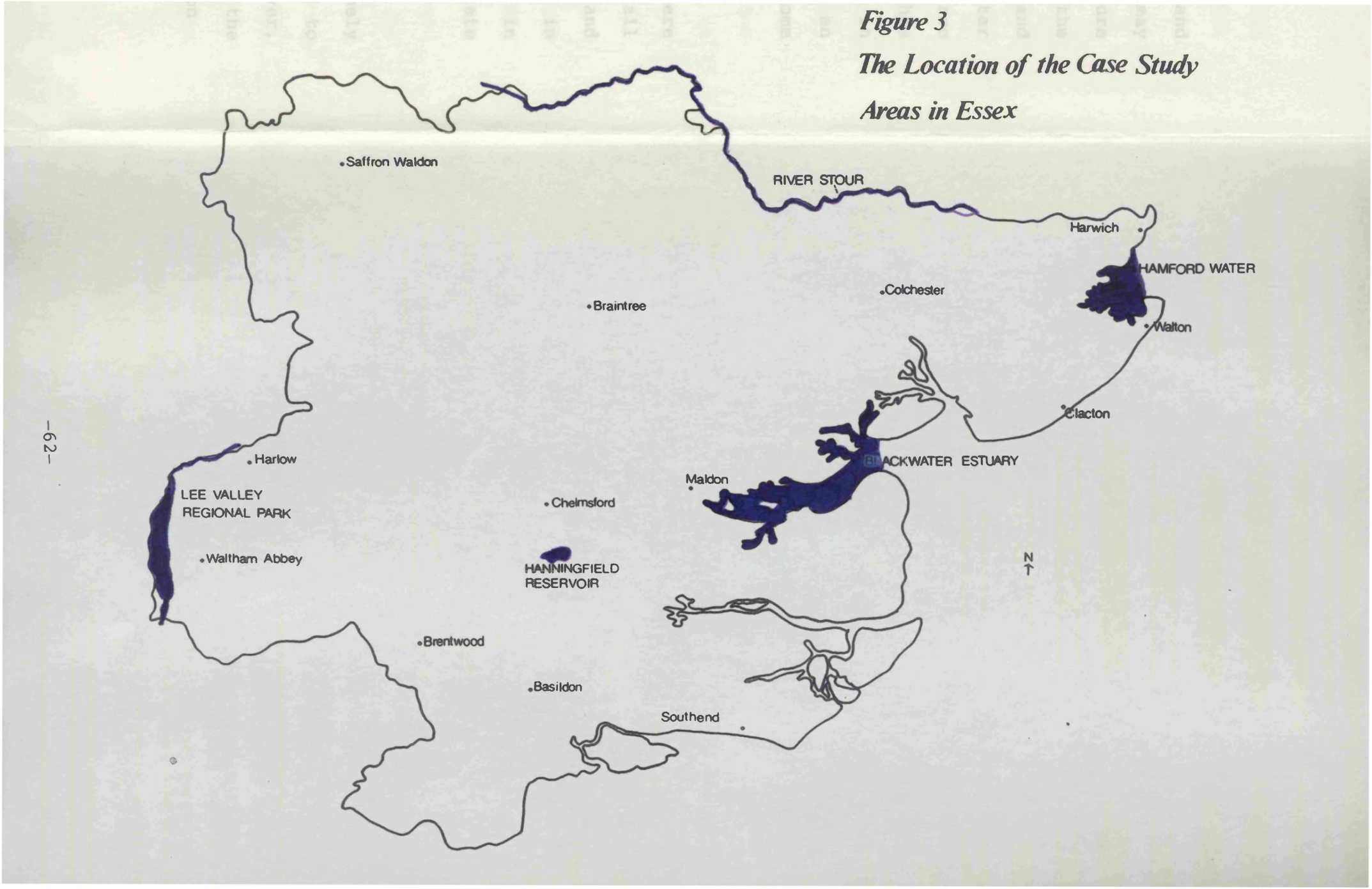
most extensive areas are located around inlets, creeks, the islands of Northey and Osea, and around Tollesbury. It is important to maintain a full range of habitats within the area since wildlife utilises different habitats for different purposes.

Besides nature and landscape conservation interests the Blackwater is a national and regional asset as a water recreation area with demands from various users including very active water sports such as jet ski-ing and the less active sport of fishing. It is a result of its broad, long and partially sheltered nature that makes it an ideal site for a whole range of water sports including sailing, water ski-ing and power boating.

The estuary and coastline are highly accessible, with access at some twenty locations along twenty two miles of shoreline. Inevitably given these opportunities for "unattached" users (ie. those not affiliated with a club) conflicts result and there is evidence on the estuary of the problems discussed in chapter two, notably disturbance. Maldon District Council has long recognised the potential of conflict between nature conservation and recreation particularly in the last decade which has witnessed a massive upsurge in water based recreation and has coincided with a greater recognition of the estuary's wildlife value. Maldon District has responded by producing a management plan, the value of which will

Figure 3

The Location of the Case Study Areas in Essex



be discussed in later chapters.

Because of the attraction of the area, users and organisations compete for space, and their activities may conflict with one another and with the needs of nature and landscape conservation interests. Many of the organisations interviewed including English Nature and the Sports Council - Eastern Region sited the Blackwater as a problem area. Substantial parts of the estuary are heavily congested particularly in the upper reaches around Maldon and Heybridge; any increase in this area in the number of boats and other water sports would have an adverse impact on overwintering waterfowl and in some places breeding birds.

A County Council survey in 1988 estimated that there were over 9,000 moored and stored yachts and cruisers in all main coastal and tidal estuary locations in Essex, and 6,000 dinghies, sailing dinghies and tenders moored in Essex. Both of these had a particular concentration in the Blackwater Estuary illustrating the congested state of the water.

The river from Heybridge to Salcote is extremely congested. A planning application has been submitted to construct a yacht basin at Salcote Mill; this however, has been called in by the Secretary of State for the Environment due to strong opposition to the application

on nature conservation grounds. English Nature considered that there would be an inevitable increase in boats that would result in increased disturbance to birds, as well as extensive destruction of intertidal habitats in an SSSI, and were therefore strongly opposed to the development. This one example illustrates clearly how conflicting interests and values can occur even at the micro level and shows how strong the conservation lobby can be in influencing development decisions.

A popular area for sailing is to the south of Osea Island; while to the north of the island around Goldhanger Creek the water is very shallow and there are extensive mudflats which are of importance for overwintering wildfowl. Activity in this area is therefore likely to have considerable consequences for wildfowl creating disturbance problems. Additionally Lawling Creek is heavily congested with boats; adding to this congestion is water ski-ing which creates problems of disturbance. It should be noted that it is during the winter months when disturbance is most critical , as it is the overwintering wildfowl that make the Essex coast internationally important, and with water based recreation activities extending into the winter season along the estuary, the conflicts are not likely to disappear without action.

The stretch of water between Stansgate Abbey and St.

Lawrence Bay is a valued water ski racing area and has been designated for this activity. Disturbance inevitably occurs and therefore, a solution must be found. However, it must be recognised that recreational activities need to be catered for on the estuary but with minimum conflict to nature conservation. How this can be achieved will be addressed in the next two chapters, when the role of the planning system will be discussed.

Additional facilities are provided at Bradwell, where moorings and marinas cater for 600 yachts; while the Tollesbury Fleet is used for dinghy sailing and by boats at Tollesbury marina which has 160 berths and moorings, and is shown on Plate 1. The numerous mooring facilities on the estuary only adds to the apparent conflicts with ornithological interests.

Mersea Island on the northern side of the estuary supports a wide range of recreational activity. It is a popular area for sailing, windsurfing, water ski-ing and sea angling. Water ski-ing has been encouraged in the area of water to the west of the island known as the Strood Channel, where a launching area has been provided adjacent to the Strood Causeway. However access to the whole area for water ski-ing is relatively easy and it is therefore, proving difficult to control the activities of non-club members. On occasions it has been known for water ski-iers not to remain in the designated areas and

PLATE 1

Tollesbury Marina

they have consequently been blamed for the conflict with other users, and erosion problems apparently caused by wash from high powered boats in the vicinity of Ray Island.

Jet Ski-ing has become an increasingly popular water sport in the last few years and is resulting in conflicts with nature conservation interests, notably disturbance problems, which are particularly evident on the Blackwater estuary. The National Trust considered that jet skis along with power boats have resulted in increased disturbance, particularly notable on Northey Island which is an important site for roosting waders and geese; and English Nature have noted the problem along the Strood Channel. An observer from a local ornithologist club has noted jet skis going in and out of the small creeks in the saltmarshes south of Northey Island ploughing through the middle of hundreds of birds in the process. Concern has been expressed over the fact that migrant birds may not stay in the area with so much activity. The Jet Ski Association, however, believe that with correct planning and management jet ski-ing can co-exist with nature conservation interests.

The Blackwater estuary remains one of the last uncontrolled estuaries in south-east England, with an 8 knot speed limit in only one area which is frequently ignored by high speed boats and jet skis which results in

problems of disturbance. Additionally the estuary has very few 200 metre wide limits off beaches, which are zones within which craft are prohibited and would help reduce disturbance problems, although the problem is always going to be one of enforcement.

The Blackwater estuary site study has illustrated that the extensive use of an estuary by numerous water sports can result in problems of disturbance to wildfowl. However, evidence of this in terms of any reductions in numbers of species of birds along the estuary resulting from recreational activities appears to be non-existent which weakens the arguments of the nature conservation interests. Organisations such as the RSPB, English Nature and the Sports Council - Eastern Region recognise that there is a problem of disturbance, but the only evidence would appear to be individual observations. The RSPB, is however,currently examining possible methods of measuring the impact of water recreation upon ornithological interests. The following site study of Hamford Water which is to the north of the Blackwater illustrates similar conflicts and problems although on a smaller scale and not quite as extensive.

3.22 Hamford Water

This is an area of considerable landscape and nature conservation interest with a strong feeling of

remoteness. Hamford Water is a large area of mudflats and sandflats, saltmarshes, marsh and grasslands as well as open water. Covering an area in excess of 2,000ha it has been designated an SSSI. In addition there are sand spits on the north and south sides of the mouth of Hamford Water which are important nesting sites for little terns and coastal birds. In fact Hamford Water is an internationally important site because it holds more than 20,000 waterfowl (wildfowl and waders) annually; in fact wildfowl are particularly impressive with an average peak of over 16,000 in the last five years, while the figure for waders is approaching 9,000. The area is also a proposed SPA and Ramsar site. Appendix 5 provides a detailed map of the area.

The Walton Backwaters is an area of shallow saltings and islands, part of which is illustrated on Plates 2 and 3. The Naze at the head of Walton Backwaters is an important SSSI rich in marina mollusca and invertebrate fossils. The wildlife and flora in the area are of outstanding interest.

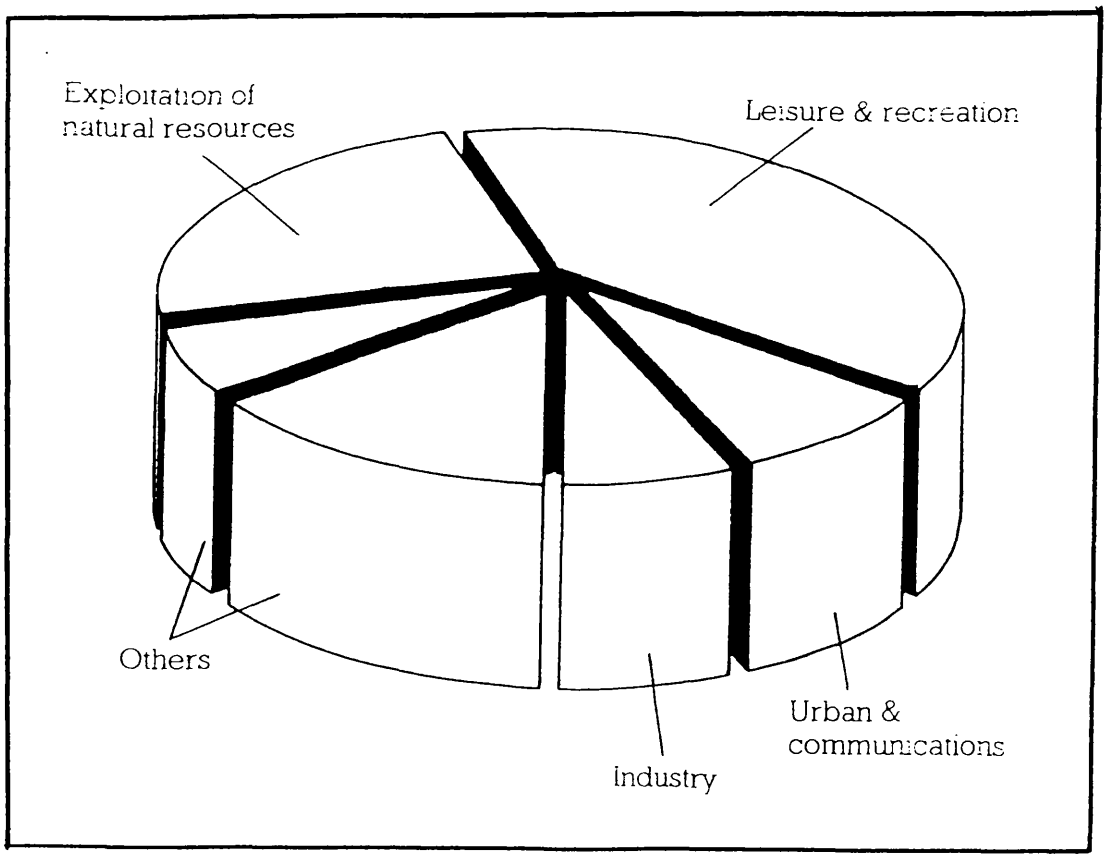
The whole area is also used extensively for water sports. Figure 6 indicates the differing patterns of human activity on Hamford Water showing clearly that leisure and recreation is the main area of human activity.

In Hamford Water there some 700 moored and stored

dinghies, sailing dinghies or tenders. In addition there are some 650 motor cruisers and yachts located at Hamford Water. The Backwaters are particularly popular for bird watching, sailing, canoeing and wildfowling. The Walton and Frinton yacht club uses the backwaters extensively which in such a sensitive area can lead to conflicts with nature conservation interests. The marina on Walton Backwaters is shown on Plate 3.

FIGURE 4

Patterns of Human Activity on Hamford Water



Source: Davidson N.C: "Estuaries, Wildlife and Man: A Summary of Nature Conservation in Great Britain. 1991.

PLATE 2

Walton Backwaters

PLATE 3

Marina on Walton Backwaters

The growth in recreational activity is creating pressures in the area, some of which are not compatible with the natural and peaceful qualities of the area. An increase in disturbance to estuary birds could result from an expansion of Titchmarsh marina. Additionally two new marina/mooring schemes proposed at Sportport, Harwich (1,010 berths) and Bathside Bay (650 berths) which have now received outline planning permission could more than double the total number of marina berths in the area.

These developments may also increase disturbance problems on Hamford Water as the number of sailing boats will increase as a result of increased facilities, many of which will sail down to Hamford Water.

It is the sheer number of yachts that are causing the problems in the area according to English Nature. The outer parts of the estuary are disturbed and there is a problem of high wildfowling and boating pressure near Walton. The RSPB is of the opinion that jet ski-ing is having an impact around the islands and creeks.

In addition to problems of disturbance, there is evidence that power boats, water ski-iers and jet skis are causing problems of erosion on the vulnerable saltmarsh habitats. The wash created by these activities has a scouring effect which is resulting in a loss and damage to species which hold the marsh together. Leisure sailing may also

exacerbate pollution on the rural coastline. A study of the response of saltmarsh vegetation to oil spills on Hamford Water illustrated that Salicornia, a species vital to the stability of Hamford Water, are killed outright by one oiling; although it does not follow that oils used in recreational boating would have such a drastic effect, it does however give cause for concern.

Although studies on Hamford Water have indicated that the effects of sewage disposal do not seem to be having any harmful effects it is unlikely that the system could cope with higher levels of pollution.

There is some evidence of conflicts of interest and values in the area, as discussed in the later part of chapter two, with recreational interests pushing for more yachting/boating facilities, while conservation interests want to maintain the quiet, remote nature of the area, and the County Council is inclined to agree with this. Because of increasing concern over the future of the area, a warden service has been established, which seeks to reduce conflicts and safeguard the natural environment. This has certainly improved the situation in the area, but conflicts are still evident.

Hamford Water has illustrated some of the same conflicts as are found on the Blackwater, although on a much smaller scale. The problems examined are difficult issues

to address for although it is important to recognise the area as being of extreme nature conservation importance, it is also necessary to realise that the increasing demands for water based recreation need to be accommodated. It is also apparent that many of the physical conflicts are the result of differing values and interests which must be addressed.

3.3 Inland Water Sites

The aim now is to examine whether the conflicts examined in chapter two in relation to inland waters are applicable to the County of Essex, which will be achieved through a discussion of three selected sites.

3.31 Hanningfield Reservoir

Hanningfield Reservoir is the second largest reservoir in Essex, situated about five miles south of Chelmsford. As well as the water body itself the Essex Water Company land includes three marshy lagoons, considerable areas of long established broad leaved woodland and a narrow strip of plantation.

The reservoir is designated an SSSI. Its main scientific interest lies in its breeding and wintering wildfowl, including nationally important numbers of Gadwell. There

are several reasons for this importance firstly it is a very large body of water which provide protection and feeding; the south bank particularly between the landing stage and south causeway is a natural margin with a fringe of emergent vegetation, there is also a small island which is an important nesting site when the reservoir is high; and finally there are various lagoons and marsh areas. Tables 10 and 11 indicate the species occurring in nationally important and significantly important numbers on the reservoir.

TABLE 10
Wildfowl occuring in nationally important numbers at Hanningfield Reservoir

	Mean Peak Number over 5 year period	% of British wintering population	Maximum reached in winter 1990/91
Coot	2,184	2.2	4,560
Gadwell	103	2.1	165
Tufted Duck	757	1.3	1,067

Source: Essex Wildlife Trust: Habitat Survey, Hanningfield reservoir. 1991.

Following the introduction of the 1989 Water Act, which has now been superceded by the Water Resources Act 1991, Essex Water Company like all other water companies has to work within a Code of Practice on Conservation, Access and Recreation. Therefore, not only are they committed to conserving and protecting the environment but there is also a duty upon them to extend opportunities for

enjoyment wherever possible. This raises the question of whether these two duties are conflicting or compatible?

There are two main forms or recreation on the reservoir. Fishing is well established, indeed the reservoir is accepted as one of the country's prime still water trout fisheries. It is managed by Essex Water Company who sell permits and hire out boats. Bank fishing is also available. In the 1991 fishing season over 15,000 angler visits were recorded, which increased to 17,050 in 1992. The monthly totals for 1992 are shown in Table 12. If

TABLE 11
Wildfowl occuring in significantly important numbers on Hanningfield Reservoir

	Mean Peak Number over 5 year period	% of British wintering population	Maximum reached in winter 1990/91
Ruddy Duck (1)	28	1.4	125
Pintail	229	0.9	350
Great Crested Grebe	64	0.6	214
Shoveler	50	0.6	112
Pochard (2)	288	0.6	452
Goosander	23	0.5	17
Teal	305	0.3	913
Goldeneye	39	0.3	41
Mallard	552	0.1	584

(1) Numbers increasing rapidly
(2) Peak - July/ August/ September. Decrease in winter.

Source: Essex Wildlife Trust: Habitat Survey, Hanningfield Reservoir. 1991.

numbers continue to increase then it seems plausible to suggest that there may be some increase in disturbance to

breeding birds.

TABLE 12
Number of Angler Visits on Hanningfield Reservoir, 1992

Month	Number of Visits
March	500
April	2500
May	2400
June	2500
July	2450
August	2500
September	2400
October	1800
TOTAL	17050

Source: Essex Water Company. 1993

A windsurfing school also operates from an area of land close to the fishing lodge. 2,000 visits were reported in 1991. Essex Wildlife Trust consider that without recreational use the reservoir would undoubtedly be more important for nature conservation.

The majority of birds on the reservoir are easily disturbed by activity on the water itself and by any irregular activity on the margins. Disturbance in winter according to the Essex Wildlife Trust would force birds to move on at a time they can ill afford to do so which would jeopardise their survival and the importance of Hanningfield for wildlife conservation. However, the fact that very little activity occurs in winter means that

disturbance is minimal. However during the spring and summer when activities are at their most intense, disturbance of fringing vegetation particularly along the south bank and the three lagoons can result in some disturbance to nesting birds which consequently in the long term would lead to a decline in their breeding success.

Essex Water Company believes that there are no problems of disturbance to bird life on the reservoir, nor any other conflicts between water recreation and nature conservation. However, with some level of activity occurring on the reservoir which is of importance for nature conservation it is difficult to see how there can be no impact at all, although it would appear to be relatively minimal, and not as great as those discussed in chapter two probably because recreational activity does not extend throughout the year. However, there are plans to build a new visitor centre at the reservoir which would almost certainly lead to an increase in the numbers of visitors annually to the reservoir. This has the potential to increase disturbance levels. This however, will depend on planning permission being obtained.

Hanningfield reservoir does provide a good example of a site where there is potential for serious conflict between nature conservation and recreation. Any increase

in fishing or windsurfing either extending the season or area would adversely effect the conservation value of the reservoir. It is apparent that there are some conflicting interests and differing values at Hanningfield particularly as Essex Water Company feels that nature conservation should take precedence over recreational interests and openly states that organisations such as the Sports Council - Eastern Region who see the potential of the reservoir for leisure pursuits due to its size, will not get their way due to the value of the site for nature conservation.

3.32 The River Stour

The River Stour and its tributaries form important habitats and serve as wildlife corridors. It is within an area designated as an Area of Outstanding Natural Beauty (AONB) and as such the character of the river is of fundamental importance to the AONB. Additionally the Stour Valley is designated an Environmentally sensitive Area (ESA). Wildlife conservation in river valleys such as the Stour is of prime importance since Essex is under intense urban pressures. The location of the River Stour in Essex is illustrated on Figure 3.

Like other rivers in Essex such as the Colne, Blackwater, Chelmer and Roding, the River Stour is also of importance for water recreation. It is one of the earliest known

navigations created by the Act of 1705 and today its main recreational value is for angling, although some parts are suitable for boats and canoes. Parts of the river have also been canalised, and the whole river is managed by the National Rivers Authority and Anglian Water plc.

Between Sudbury and Brantham the river is a statutory navigation, and from Brundon to the sea it is designated as a "recreational waterway", but is subject to Anglian Water byelaws. As long as these are complied with, non-motorised craft have a right of navigation on the whole length of the recreational waterway. Rowing boats can be hired at Dedham, Flatford and Sudbury, and the river is used as a through route by canoeists, an activity for which the river provides an excellent resource. The river and its tributaries above Sudbury are popular for angling and partly owned or leased by angling clubs.

The wildlife of the river therefore, has to co-exist with the other uses of boating and angling. Inevitably occasional conflicts do occur between anglers, boat users and wildlife interests, although the River Stour Users Group organised by Anglian Water does go some way to helping resolve potential conflicts.

Powered craft are not allowed on most of the river, with the exception of riparian owners and the River Stour

Trust. Additional power craft on the river would certainly lead to conflict with nature conservation interests as it could lead to erosion of banks, damage to fish spawning beds and general detraction from their amenity value.

The River Stour provides a good example of where there has been a clash of interests and values, namely between the River Stour Trust and conservation organisations. The National Trust argue there is potential for conflict on the river with the Stour Trust wanting to open it up to navigation which would result in increased usage, with consequent effects on the nature conservation value of the river.

The River Stour Trust exists to protect and enhance the public right of navigation on the river, and has been pressing for a number of years to increase the navigation rights on the river, extending them to Sudbury. This however, has been met with opposition from conservation bodies as well as the NRA, and to date the Trust has been unsuccessful in opening up further stretches of the river. In effect the conservation interests have won this "battle" of competing values.

In the past the Trust have also campaigned for the right to use low powered craft on the river, opposing the arguments of the conservationists who argue that the

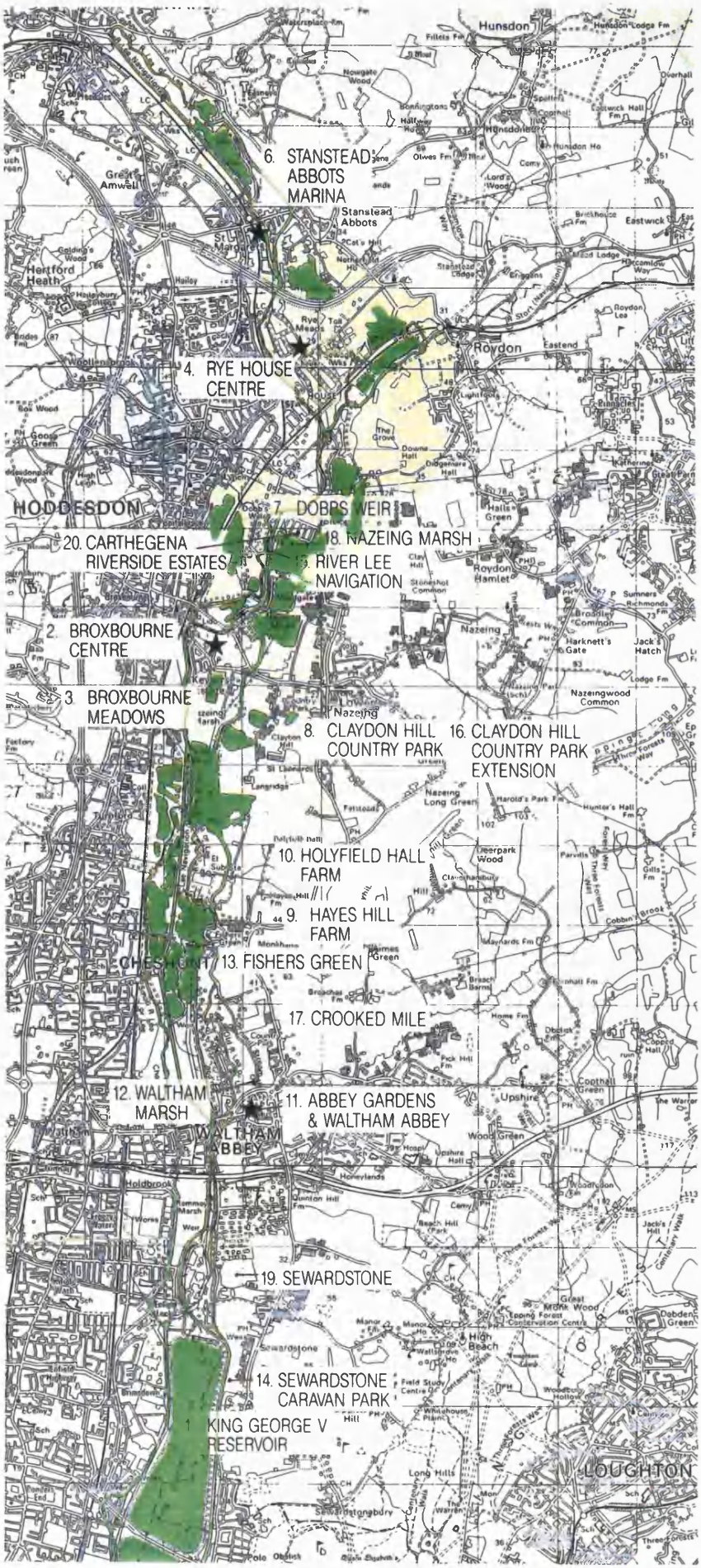
river is too small; that powered craft would adversely affect other river users; that it would cause erosion and pollution; and finally that it would be contrary to the interests of conservation and wildlife. The Trust are of the opinion that no conflict would occur with nature conservation and wildlife interests, and that the use of powered craft does not result in erosion and pollution, and consider that use by a wide variety of interests need not destroy the river's character. This is a clear illustration of a clash of interests and beliefs, and divergent values are apparent.

3.33 Lee Valley Regional Park

The Lee Valley provides a unique case study site because unlike the other sites its main aim is to provide for recreation - both land based and water based, but at the same time conflicts still occur with nature conservation interests. The Park covers an area of approximately 4,000ha (10,000 acres) in the counties of Essex, Hertfordshire and also Greater London. The Authority responsible for the Park has a remit which embraces just about every conceivable aspect of leisure, sport and recreation and enables a statutory recreational "master plan" to be produced. The area of the Park is illustrated on Figure 7.

The gravel pits and reservoirs provide a complex range

FIGURE 5
Lee Valley Regional Park



Source: Essex County Council, 1992

of resources of national and international importance to waterfowl. Many of the sites within the Park are well used for water sports, with a number being of particular significance because they support a range of sports which are organised on a club basis. Almost every gravel pit is fished while sailing occurs on most of the larger pits and two of the reservoirs.

The Lee Valley Navigation Towpath provides a physical link between different parts of the Park, while the river itself is steadily increasing in popularity as a cruising waterway for private boaters, and demand for water moorings remains in excess of supply at the Authority's two marinas at Stansted Abbots and Springfield.

In addition to the park providing a major resource for water sports it is also important for nature conservation which can lead to a certain amount of conflict. Increasing demand for water based recreation within the Park cannot be ignored, but alternative sites for sports such as water ski-ing and sailing are difficult to find since on many waters they would have an adverse effect on wildlife, while increased usage on existing reservoirs and pits would only enhance any conflicts of interest. Birds are easily disturbed by recreation, but being strong fliers can move easily to quiet refuges. However, such refuges must be present in the valley if it is to continue to support large populations of wildfowl.

Increasing pressure placed upon the water resources of the Park by water sport activities may lead to movement away from the valley of bird species.

King George V Reservoir provides an example of a clash of interests between nature conservation organisations and recreation bodies who would have liked to have seen it developed as a water recreation centre.

The Reservoir has been identified as being of exceptional wildlife importance because it is a major wildfowl refuge in winter as well as acting as a roosting site for large flocks of gull, while during the late summer it holds large gatherings of moulting duck. The tolerance distance of the birds varies with the physical nature of the environment. Since the reservoir lacks any screening the disturbance distances for wildfowl will be long and the effect of disturbance greater than for a more varied water body such as some of the gravel pits.

It is argued that the introduction of a water sports centre onto the northern basin of King George V would create disturbance problems which would severely reduce the number of birds using the site. This would result because presently the northern basin acts as a refuge for those birds displaced from the southern basin when sailing commences. The Lee Valley Regional Park Authority have agreed that the reservoir cannot be developed

further as a water sports area, due to its importance for nature conservation.

Although participants in water sports must understand the environmental concerns, it is easier in this instance to understand their point of view, for in an area whose primary purpose is the provision of recreational facilities, restrictions are still being placed upon their use of the area, which must be particularly frustrating as Essex quite clearly has a lack of inland waters that can be used for water based recreation. Areas of inland water that are an important resource for water sports as in the Lee Valley are also of importance for nature conservation, particularly wildfowl, and so frequently recreational/sporting organisations are fighting a losing battle.

3.4 Conclusion

It is apparent from the above discussion that conflicts do occur on occasions between nature conservation and water based recreation on the Essex coast and inland waters; and that many of the problems and issues examined in chapter two do apply to Essex. However, one point worth noting is that physical land use conflicts on the inland waters of Essex appear to be minimal and not to the same scale as those discussed in the previous chapter. But differing values and interests on the level

of use are apparent. Ecological impacts of water recreation are of more concern along the coastline, where the popularity of powered craft increases the potential for disturbance to the environment.

What both chapters two and three do is point to the need for action; and it is to this point that the thesis now turns , and primarily to the current role of the planning system and options for future action by the planning profession.

CHAPTER 4
THE ROLE OF THE PLANNING SYSTEM

4.1 Introduction

The discussion in chapters two and three argues that conflicts exist between nature conservation and water recreation interests on both inland and coastal waters. It has increasingly been recognised that coastal and inland waters cannot meet all the demands placed upon them without causing environmental damage; and that there is a need for reconciliation of the divergent claims, which has provoked extensive debate upon the appropriate mechanisms and criteria to use.

The aim of the next two chapters is to examine the role of the planning system with regards to nature conservation and water sports provision in an area and its potential to overcome conflicts and to influence the use of such scarce resources. This chapter will discuss the achievements of the planning system to date; while chapter five will suggest possible ways forward and ways to overcome any short comings in the existing system identified in this chapter.

To begin there is a discussion of planning at the national level including a critique of PPGs relevant to the subject area, and other government publications relating to planning for nature conservation and water sports; as well as a brief examination of any provisions within planning legislation.

Following on from this will be a discussion of planning at the regional level in the south east, and the role of local planning authorities which will be divided between the district and county role. Chapter three clearly indicated that conflicts between nature conservation and water recreation were apparent within the county of Essex, and therefore the achievements of the planning system within the county will be examined.

4.2 National Context

4.21 Planning Legislation

In general, planning legislation has not given nature conservation and water recreation issues very much attention. However, there are a number of exceptions. The Town and Country Planning Act 1990 although containing no specific reference to nature conservation or water recreation, has had

incorporated within it the 1981 Minerals Planning Act which enables the imposition of restoration conditions which seek to ensure that a restored mineral site is appropriate for its intended after-use. This enables after care conditions to be imposed for restoration to a water recreation after use.

The Planning and Compensation Act 1991 strengthens the development plan system, but it no longer provides for statutory subject plans which would have provided local planning authorities with an option to address nature conservation and water recreation. However, under the Act all development plans are expected to include policies in respect of the conservation of the natural beauty and amenity of land.

4.22 Planning Policy Guidance Notes

Over the past two years the Department of Environment (DoE) has published a number of PPGs that have a direct bearing upon nature conservation and water recreation. A critique of each will discuss whether the guidance has gone far enough in promoting a better understanding between the two sets of interests and whether the way has been paved for the planning system to make a contribution to

overcoming any conflicts.

(i) PPG12 Development Plans and Regional Planning.

PPG12 (1992d) examines the various types of Development Plans, considering that they have become more prominent since the enactment of the Planning and Compensation Act 1991. The PPG makes a number of recommendations that provide Local planning Authorities with a mechanism to address the conflicts between nature conservation and water recreation, and successfully plan for both interests.

In stating that Structure Plans should include policies on the conservation of the natural environment as well as tourism, leisure and recreation, it believes that they can be successfully integrated. It advises that one main priority should be to sustain the character of the countryside and undeveloped coast, and again it links conservation and recreation by stating that:

"The development plan process provides an opportunity to look at the alternative forms development can take and to consider local options for conserving and improving the landscape and encouraging opportunities for recreation."

One key element of the PPG is the provision it makes

for local planning authorities to prepare Supplementary Planning Guidance (SPG) which it considers:

"can provide helpful guidance for those preparing planning applications"

It goes on to state that the SPG should be consistent with the development plan and clearly cross referenced. The view is that it may be taken into account as a material consideration, with the weight accorded to it increasing if it is prepared in consultation with the public and subject to a council resolution. This provides an ideal opportunity for local planning authorities to prepare SPG on nature conservation and water recreation which could expand on the policies in the Structure Plan or Local Plan, discuss key issues and make recommendations as to the level of recreational use acceptable in certain areas, for example by identifying key sites on inland and coastal water capable of sustaining a certain level of recreation; or by listing criteria by which planning applications for water recreation facilities would be assessed.

(ii) PPG17 Sport and Recreation

PPG 17 published in September 1991 considers that it

is the function of the planning system to ensure through the preparation of development plans that adequate land and water resources are allocated both for organised sport and informal recreation.

PPG 17 expects Structure Plans to set out the authority's land use policies for leisure and recreation as well as offering strategic guidance on other issues needing countywide policies such as the protection of sensitive areas from inappropriate sport and recreation. With Local Plans it is expected that consideration will need to be given in particular areas to the relationship between the recreational use of land and the interests of conservation. At this point no reference is made to the recreational use of water; the problem is that planning controls can only influence the use and development of land; but the discussion has clearly indicated that sensitive water areas also require protection from inappropriate sport and recreation - which suggests there is a case for strengthening the planning system.

The PPG does go on to refer specifically to water recreation, advising that Development Plans may encourage the imaginative use of redundant mineral workings , disused commercial docks and redundant agricultural land in proximity to inland or tidal

water, for new moorings but without undue detriment to local interest or the natural environment. If local planning authorities implement this advice through the development plan process it will assist in taking the pressure away from the more ecologically sensitive areas, particularly if the new site contains a high standard of facilities (that is the "carrot" and "stick" theory).

The PPG needs to recognise more fully the need to assess the impact of new facilities on the wider environment and not just the immediate environment, especially on the coast where increased recreational facilities may lead to increased usage of coastal waters in a large area which may have severe ecological implications.

Although reference is made to water sports the PPG fails to recognise that the provision for water sports may conflict with the nature conservation objectives of the local planning authority; and therefore it does not directly suggest ways in which these conflicts may be overcome by the planning system. The emphasis is very much on land based recreation in the countryside and urban areas. There is no reference to the pressures created by coastal recreation for new marina and mooring facilities which the planning system can control (although this

is the subject of a later PPG), nor is there recognition that granting planning permission for new visitor centres or clubhouses only increases the use of a site for water sports and therefore increases the pressures on those areas, with the potential for environmental consequences.

(iii) PPG20 Coastal Planning

PPG20 was issued by the DoE in September 1992(f). Its publication is a step towards re-establishing national recognition of the planning issues on the coastline. It covers many of the competing uses on the coast including recreation and nature conservation recognising that these two interests are part of a much wider debate.

It considers that conservation policies should aim to protect and enhance the natural character and landscape of the undeveloped coastline as well as areas of nature conservation importance within built up areas.

Recreation is recognised as one of the activities that requires a coastal location. Unlike PPG17 it does consider that conflicts can arise with nature conservation interests; and states that if there is an irreconcilable conflict between recreation and

conservation objectives, then conservation and enhancement of the natural beauty must take precedence; although it does advise that attempts should be made to balance and reconcile these interests and contain the impact of the activities through appropriate management, it does not say how.

In referring specifically to water recreation it is recognised that demand for marinas and other facilities for boat mooring, parking and launching is likely to continue for the foreseeable future, and that there may an impact upon the environment. In recognising that it states:

" Policies for development of future facilities should be based on an assessment of the capacity of the local environment to accommodate further water based recreation"

This is good advice which will hopefully be translated into policies within development plans, and encourage local planning authorities to undertake environmental appraisals of proposed development plan policies for the development of water recreation facilities.

As in PPG17, PPG20 refers to the fact that policies should encourage the imaginative re-use of disused commercial docks, as well as suggesting that redundant agricultural land adjacent to tidal waters

and of low ecological value could also provide for water recreation. However this does not recognise the fact that some areas of coastline for example in Essex are important because of their remote, open and undeveloped character, and not just because of their ecological value. Additionally areas of low ecological value may be adjacent to areas that are of extreme nature conservation importance, and so any development may have implications for these areas; and finally encouraging further opportunities for water recreation will only place increasing pressure on the coastline. Although it must be recognised that water recreation needs must be catered for especially where there is a shortfall of facilities, some areas no matter how low their ecological value are clearly not suitable. However, PPG20 does state that:

"care must be taken to ensure that (new moorings) respect local interests and natural environments".

This statement should however be strengthened and explained more comprehensively, for it is important that adjacent counties interpret the statement in the same way, so policies within development plans are consistent. Credit must however, be given to the PPG for recognising and making it clear that recreation facilities particularly for water based activities create pressures for on-shore facilities

in the form of clubhouses, jetties and slipways, the impact of which needs careful consideration.

In providing advice on development plans, the PPG suggests that Local Plans provide an opportunity to define in detail the areas to which specific policies apply; including sites for proposed coast related uses or other proposals such as recreation facilities, nature reserves and marinas. Additionally for estuaries and parts of the open coast, local planning authorities and other agencies and interest groups are encouraged to cooperate to prepare estuary or coastal management plans. These are expected to complement and be consistent with development plans; while development plans are expected to set out the planning strategy and planning policies which will provide a policy framework for management plans, which should be taken into account when preparing and reviewing development plans. Although these plans are coastal wide covering a whole range of activities, a mechanism has been provided whereby local planning authorities can address the conflict between nature conservation and water recreation, as well as integrating these interests with other activities.

(iv) PPG21 Tourism

Although the PPG21 on Tourism published November 1992(g) is not directly related to the thesis, policies for tourism development may indirectly affect the demand for water based recreation, and therefore it is appropriate to acknowledge its existence. It considers that the tourist industry should flourish and grow in response to the market while respecting the environment; that the planning system has an important role to play in coping with the problems that can arise from existing tourist attractions and activities; and that it should also facilitate and encourage development and improvement in tourist provision.

(v) Draft PPG on Nature Conservation

The draft PPG on nature conservation (1992e) considers that with careful planning and control, conservation and development can be compatible. It reiterates an important point and that is that permission granted by the General Development Order (GDO) 1988 for the temporary use of land for wargames, motorsports and clay pigeon shooting does not apply in SSSI's, and therefore planning permission is required in response to a planning application. Although this is not directly

applicable, if planning controls were to be extended this could be applied to motorised water sports on inland and coastal waters, as many are designated as SSSIs, and are of equal importance if not greater, to the land SSSIs, and therefore deserve the same level of protection.

(vi) Concluding comments on PPGs

Although the PPGs do have a number of shortcomings, they do provide a step in the right direction to a greater understanding of nature conservation objectives and the pressures placed upon these of which water recreation is one. Overall four key points can be identified from the PPGs which are of importance when discussing the role of the planning system in resolving the conflicts between nature conservation and water recreation. These are:

o Provision is made for the preparation of SPG which is a mechanism for addressing nature conservation and water recreation issues.

o A greater recognition is given to the potential of redundant mineral workings in providing new opportunities for water recreation. This could help overcome the pressures placed on sensitive coastal resources and other enclosed inland waters for water sports.

o All the PPGs appear to be aware of the environmental implications of development, and in particular it is considered that where irreconcilable conflicts are apparent between nature conservation and water recreation, conservation should take precedence.

o Estuary/ Coastal Management Plans as put forward in PPG20 should provide another mechanism whereby local planning authorities can examine the problems in providing for water recreation and nature conservation, and suggest possible solutions to the conflicts.

4.23 The Government response to the House of Commons Environment Committee Report on Coastal Zone Protection and Planning. (1992a)

In April 1992 the report of this committee found that uncoordinated actions and decisions at a national and local level along the coastline have resulted in:

(i) Inadequacies in legislation

(ii) Anomalies in the planning system

(iii) A lack of central guidance on coastal issues

(iv) Overlapping and conflicting policies among a multitude of agencies.

The Government response to this report published in

July 1992(a) rejected some of the reports recommendations in favour of less radical approaches, and refused to accept the Committees view that there is a widespread duplication of responsibilities or poor co-ordination of coastal matters. However, it did accept the recommendation for local coastal management plans that should complement the statutory plan system. The coastal management plans could obviously be used to examine nature conservation and water recreation issues; and the report by linking the plans to the statutory development plans has provided a role for local planning authorities to co-ordinate planning and management of these interests, as well as all the other coastal activities and interests. Additionally the response discussed the possibility of extending planning controls beyond the low water mark which would aid in the process of controlling water sports in ecologically sensitive areas.

However, what is disappointing from the point of view of this discussion is that the original document fails to fully address the pressures on the coastal environment, including water based recreation and its ecological implications. Although the primary aim is to suggest areas of action which is welcomed, it would appear that in order to ensure the options for planning and management are

effective it is first necessary to understand the key pressures and issues. It is recognised that the minutes of evidence submitted do make references to the problems and pressures,but it would have been useful to bring them all together. Because this has been omitted options for overcoming conflicts between the competing interests of water sports and nature conservation are not fully addressed.

4.3 Regional Planning in the South East

4.31 SERPLAN

Serplan is the regional planning organisation for south east England. In September 1990 it published A New Strategy for the South East which sets out the context for planning the region into the next century. Reference within this is made to an "ecologically sound, aesthetically pleasing and pollution free environment" , although it does not refer specifically to water recreation; additionally there is no guidance on coastal matters, as a result of this draft guidance has been published on coastal matters which is of direct relevance to the discussion.

This document further emphasises planning issues along the coastline and includes guidelines on both

water recreation and nature conservation; recognising that there are conflicts between the two and difficulties in providing for both stating that:

"The Regional Strategy recognises the special role of coastal areas have to offer as a leisure opportunity but which is tempered by the environmental sensitivities of the landscape"

The policy guidance states that:

"Opportunities for access to the sea for water based sports should be encouraged subject to environmental capacity and in conjunction with sound visitor management"

This document provides good sound planning advice to coastal counties in the south east, and paves the way for providing a co-ordinated approach to planning for competing uses and should lead to consistent policies between counties which is extremely important , as development on one part of the coast, for example a marina can result in ecological implications for other sections of the coast which may be in a different County, and may therefore conflict with their nature conservation policies. The document also provides a clear role for both county and district planning authorities in resolving conflicting uses on the coastline.

4.4 Planning at the Local level

Planning legislation, government guidance and regional guidance provide a framework within which local planning authorities (LPAs) must work; essentially it can be argued that LPAs are the most important element of the planning system implementing government and regional guidance at the local level.

Therefore, the most direct way of overcoming the conflicts between nature conservation and water recreation is at the local level through the development plan system and development control process, which may control aspects of change of use, location and intensity of use. Additionally they are well placed for providing a forum for resolving conflicting interests and for advising on the effective management of sites.

In general terms the process of planning involves four main stages:

(i) The survey of resources and issues with which the plan is to deal;

(ii) Evaluation or analysis to identify priorities and define objectives;

(iii) Determination of policies;

(iv) Implementation.

These four stages can be used by local planning authorities to determine and implement policies for nature conservation and water recreation.

It has been argued that water recreation planning should be based upon measurement techniques to determine socially and environmentally acceptable levels of provision, by assessing the social benefits of water recreation facilities; the carrying capacity of water space, and the environmental impact of water recreation. (D.J Parker and E C Penning Rowsell, 1980). The level of recreation use an area can sustain without an unacceptable deterioration in its character and quality or in recreation experience that is its carrying capacity is a vital input into water recreation planning, and should be taken on board by local planning authorities.

The following discussion will examine the role of planning at a county and district level and will therefore, involve a discussion of Structure Plans, Local Plans, Mineral Plans and the Development Control process as well as supplementary planning guidance and other non-statutory documents.

4.41 The County Planning Role

The principal statutory duty of a County Planning Department is to produce a Structure Plan, the main purpose of which is to state in broad terms the general policies and proposals of strategic importance for the development and use of land in an area. It should take account of national and regional policies and provide a framework for more detailed policies and proposals in local plans.

Structure Plans are expected to include policies on conservation as well as recreation and therefore provide an opportunity to address any conflicts between the two before they arise, by having clear and integrated policies. It would appear policies can be either negative that is discouraging and placing strong restrictions on the development of facilities for water sports in ecologically sensitive areas or positive, whereby policies encourage water sport facilities in the less sensitive areas, subject to certain criteria.

In the Hampshire County Council Structure Plan (May 1991), the policy on marina development is clearly discouraging further water sport facilities particularly if they would result in unacceptable level of recreational activity.

" New marina developments or proposals for new moorings will not normally be permitted if their implementation is likely to give rise to additional marine activity which will result in unacceptable levels of congestion in harbours or sailing areas offshore."

One shortcoming of this policy would appear to be the fact that it does not link unacceptable levels of congestion with impacts upon the environment; for it would appear by limiting the growth of facilities, it will reduce the pressures placed on the natural environment. In contrast to this policy, is the one in the West Sussex Structure Plan, 1988, on coastal water recreation which encourages new facilities subject to them meeting certain criteria, which will make it clear to the developer what is required. The Policy is:

" Proposals for additional boat moorings including marinas, areas for boat parking on land and associated facilities will normally be permitted subject to:
(1) No pollution or erosion problems being created;
(2) No serious adverse impact on nature conservation;
(3) Any conflict between the proposal and commercial shipping or existing sailing being resolved;
(4) Nothing being done to prevent the full potential of the site for boat mooring and launching being realised;
(5) Provision being made for visitor moorings"

In recognising conflict with commercial shipping and existing sailing, the policy could be strengthened from the nature conservation point of view by recognising there is conflict with this as well. However, credit must be given to the fact that there

appears to be understanding that the nature conservation interest of an area can limit its capacity for water sport provision.

This understanding should underlie policies in all Structure Plans whether referring to coastal or inland waters; as at a time when concern for environmental protection is at its highest, and there is an increasing recognition that once wildlife habitats are disturbed or lost they cannot be returned to their original state, greater consideration needs to be given to giving nature conservation objectives precedence over provision for water recreation.

Some Structure Plans contain policies to encourage the recreational after-use of mineral sites to take pressure off other inland waters and coastal waters. For example within the Norfolk Structure Plan submitted February 1991, it is considered that the recreational after use of mineral workings could in some cases be used to resolve conflicts between water based activities elsewhere, and to reduce damage to sites of nature conservation or other quiet recreational interest, caused by motor cycling or motorised water sports. The policy states:

" The County Council will encourage the recreational after-use of mineral workings subject to environmental considerations and taking into account nature conservation".

It is considered that such a policy should be introduced into all Structure Plans where applicable as by encouraging developers to develop redundant mineral site as recreational centres it would clearly take the pressure away from more ecologically sensitive areas, particularly if the facilities provided on site were of a high standard and it was within easy access of towns and cities. Additionally, it would then be possible to provide for the needs of water sports as well as nature conservation interests in an area. However, such a policy must be accompanied by policies discouraging recreational use on the sites of nature conservation importance.

These few examples therefore, illustrate the types of policies found in Structure Plans which address the provision for water sports in an area as well as recognising the environmental implications of such objectives. The policies work to resolve future problems rather than existing conflicts by encouraging or discouraging further facilities for water sports as appropriate.

The County Council is also the Minerals planning

Authority and therefore has a duty to produce a Minerals Local Plan as set out in PPG12, which can set out requirements for the restoration and aftercare of mineral sites. This provides some scope to promote restoration to an amenity use; it would appear that presently many plans contain general restoration policies, such as in the Hampshire

Minerals Local Plan, 1987:

" Before permission for any mineral development is granted the County Council will ensure that the proposal provide for:
(i) An agreed after-use which should be compatible with adjoining uses and the planning policies for the area; and
(ii) The satisfactory restoration of the site to a state suitable for that use"

However, the policy within the Cambridgeshire Aggregates (Minerals) Local Plan (February 1989) does see water based recreation as a potential after use where a need can be demonstrated, and also states that considerable potential exists for after uses in existing workings for recreation or indeed nature conservation. The policy states:

" The County Council will require proposals for surface mineral workings to be accompanied by proposals for the restoration of the worked site to a beneficial after-use. The County Council will normally require restoration to agriculture. Forestry or after-uses involving water based recreation or nature conservation will normally only be considered appropriate where a specific need can be demonstrated."

The Hertfordshire Minerals Local Plan 1991 (Discussion Document) also promotes a recreational after use by recognising areas of the County where leisure and related development should form a significant part of mineral restoration schemes. The areas recognised are within the Lee Valley Regional park, the Colne Valley Park and the middle Colne

Valley between Watford, St.Albans and Hatfield. According to the document this is in recognition of the potential that exists in the areas for leisure related development. Some of these areas lie within the boundary of the proposed Community Forest. The policy within the Written Statement of the Minerals Plan clearly promotes recreational development - land or water based as an after use for mineral sites.

With government advice increasingly pointing to the potential of redundant mineral sites to provide for a recreational after-use, more policies should start to emerge in Minerals Local Plans for amenity after-uses and hopefully where appropriate for water recreation activities.

4.42 The District planning role.

The primary statutory functions of district planning

authorities are the preparation of Local Plans which set out detailed policies and specific proposals for the development and use of land; and the processing of planning applications (ie. the development control process.)

Local Plans have a key role to play in securing the conservation of the countryside and its wildlife and in providing opportunities for the public to enjoy both. Additionally they provide the opportunity to address:

o The need to protect landscape, nature conservation and countryside interests while providing opportunities for sport; and

o The need to ensure that the level of demand justifies the provision of sports facilities that are likely to have a material effect on the countryside.

Local Plans therefore, like Structure Plans, provide a mechanism to overcome potential conflicts between nature conservation and water recreation. Because they can include site specific proposals unlike Structure Plans it is reasonable to suggest they would be more effective in addressing the demands of the two interests.

Policies for recreation within the River Hamble

Local Plan, First Alteration, 1990 tend to discourage additional recreation facilities and certainly address the need to protect landscape and nature conservation interests while providing for a limited recreational use, recognising that there are inherent conflicts between the two interests. The policy states:

" In the Upper Hamble the local planning authority will not permit additional moorings or other development, if it would detract from its attractive, peaceful character or from its nature conservation value either directly or through the extra activity it would create."

This policy is in clear recognition of the ecological sensitivity of the area, and policies as strong as this would be welcomed in development plans of those authorities which have important areas of coast and inland waters to protect, particularly as the policy considers the environmental impacts of additional activities can be as great as the actual development.

A policy within the Chichester District local plan, 1991 provides a good example of the key role Local plans play in securing the conservation of the countryside as well as providing for recreation. It aims to balance the needs of each and overcome any potential conflicts.

" The development of new countryside or water related recreational activities and facilities or the intensification of existing uses will only be permitted where the type and level of provision will not have a serious effect on the resources and character of the countryside or coast (including Chichester harbour) or the safety of existing users of such facilities"

The Exmouth Local Plan 1992, in referring to the Exe Estuary also aims to balance the needs of both nature conservation and water recreation. It recognises the importance of the estuary for birds and as a wildlife habitat, taking the view that conservation interests must take precedence in any conflict with recreation use, but it seeks to improve facilities for water borne activities which will not result in conflicts. Within the Braunton and West Coast Local Plan (Devon) Deposit Copy, 1992 instead of having separate sections on nature conservation and recreation the two policy objectives are combined into one section of the plan, with the Council obviously believing there is a need for integration. This could be considered by other local authorities.

What is notable about the policies is that many give precedence to nature conservation objectives over water recreation facilities, where in proposals are only supported if there are no implications for wildlife. Districts in their Local Plans could however, be more site specific in promoting sites

for water recreation that will have no adverse impacts on the environment and not be as vague as the following policy where the local planning authority could have identified two or three sites considered to be suitable for a marina; instead it states:

" The District Council will support suitable proposals for the development of a marina facility at a location along the coast which is compatible with the local environment, coastal defence and highway considerations" (Folkstone and Hythe Local Plan 1st Alteration, 1990).

District Councils are additionally responsible for implementing these policies through the development control process and ensuring they are adhered to by potential developers.

The District Council's role is crucial in ensuring the conservation and wise use of scarce resources through the positive application of the planning process. In determining planning applications districts need to be aware of the fact that the impact of developments may extend much more widely than the immediate vicinity of the proposed recreational development, for example by effecting populations of birds that breed elsewhere.

The Development Control process cannot put a halt to current conflicts but what it can do is to stop any

increase in conflicts by refusing permission for further marina, mooring and other water recreation facilities, which ultimately leads to any increase in activity on the water. However, R.Sidaway (1988) in his survey of marina developments on the coast in southern England found that the planning process tended to favour marina developments and only in the counties of Essex and Suffolk did refusals out number permissions. He argued that this was perhaps a reflection of the key role development control officers play in dissuading would be developers at the pre-application stage. This was more apparent in these two counties due to planning officers committment to their strict policies for the protection of the coast which heavily constrain further developments.

The fact that there has been a significant increase in marina developments in the last 10 years in southern England raises the question of the effectiveness of the development control process where they have been additional to proposals in statutory plans. Policies in the development plans of Hampshire can be generally regarded as having a strong commitment to nature conservation, and restricting marina developments, and yet there has been a 10% increase in the last 10 years, which has meant that the Solent for example has become very

congested. This one example suggests that the development control process could more effective in limiting marina and mooring developments in favour of nature conservation.

4.43 Non Statutory Planning Documents

Local Planning Authorities also have a role to play in producing non-statutory planning documents some of which have addressed nature conservation and recreation issues. These can be important planning documents providing additional guidance to would be developers on the policies in the area on what is considered acceptable development and on the criteria that will be considered in making a decision on the planning application. Local planning authorities are also in a good position to produce management plans with the aim of integrating them with the statutory planning system. This, for example, was the primary aim of Hampshire County Council's "Strategy for Hampshire's Coast" (1991) which aims to provide a framework for the planning and management of Hampshire's coast which included examining nature conservation and water recreation issues.

Wycombe District Council has produced a study of the River Wye which resulted from the fact that there

was no overall assessment of the river's current environmental condition or amenity value, nor was there a satisfactory framework to identify on a structural basis, opportunities to improve its physical condition or recreational potential. The result included a number of action points. It provides an example of a document where conservation and recreation have been integrated, and where the main objective should be to provide for both interests where recreation is compatible with the objectives of nature conservation.

An excellent example of a non-statutory planning document which is closely linked to the statutory planning system is the Norfolk Broads Management plan which complements the Structure Plans of Norfolk and Suffolk, and where the main priority is to overcome the conflicts between nature conservation and water recreation.

The County Structure Plans of Norfolk and Suffolk provide the statutory framework through which the policies of the strategy and management plan will be implemented. Additionally when decisions are being made on planning applications it is expected that they take full account of the policies within the management plan.

Local Planning Authorities could follow the example of the Norfolk Broads and produce plans for areas of water, both inland and coastal, that are ecologically sensitive and subject to recreational pressures. Planning authorities are the most appropriate department to produce and implement such plans, for ultimately the long term future of such plans depends upon integration with the statutory planning framework so that they do not become "bottom draw plans" with no value or importance attached to them.

4.5 The County of Essex - A Case Study of the role of the planning system.

4.51 The County Council role

The primary function of the County Council planning department has been to produce a Structure Plan of which the latest version is the Approved First Alteration (July 1991). This contains strategic policies on both water recreation (inland and coastal) and nature conservation.

The County Structure Plan has relatively strong policies to protect important wildlife habitats particularly along the coast where it has long been the County Councils policy to control development in

recognition of its natural attractions. In referring specifically to water based recreation on the coast the Structure Plan recognises that water space in the estuaries and on parts of the coast is congested, and that the sensitivity of some areas for landscape and wildlife increases the difficulties in providing for further water recreation facilities. The policy states:

"The development or expansion of major water recreation facilities will not be permitted on the rural coastline but will be encouraged in those coastal towns where there would be no detriment to townscape and nature conservation, and where traffic generated by the development could be satisfactorily handled. New marinas should be considered at Harwich and Southend."

This policy has been successful in ensuring no new facilities on the open coastline, although there are numerous facilities on the estuaries, which should have been controlled more successfully to prevent the congestion that is now apparent in some areas, particularly on the Blackwater.

Additionally the policy should recognise more fully the wider ecological impacts of new facilities at Harwich and Southend where there are important nature conservation areas. For example a new marina at Harwich would ultimately lead to an increase in sailing activity in the area a percentage of which may use Hamford Water which is extremely important

in terms of its wildlife habitats.

The current economic climate does mean that applications for marinas have become almost non-existent; but when the economic climate improves the demand for new facilities has to be accommodated somewhere, and the developed areas do provide the most appropriate location; for although there may be wider ecological implications the impacts on the immediate area would not be as great as the open, rural and undeveloped parts of the coastline. The County Council is clearly aiming to strike a balance between the need to provide for water sports and the needs of nature conservation.

The Structure Plan recognises that by developing inland water sites it may help relieve the pressure on coastal sites, considering former mineral workings could be restored to a water recreation after-use. However the policy does not give much impetus to this, indeed it could be more positive in encouraging restoration to water based recreation. The policy states:

" ..... Wherever possible land permitted for mineral workings will be restored to agricultural use, but due regard will also be had to the need for areas of nature conservation, water based recreation, afforestation and leisure activities."

With the current agricultural economic climate, more

consideration should certainly be given to a water recreation after-use. However the Structure Plan does contain a policy to encourage the creation of inland water for recreation, although mineral sites are not referred to specifically.

" The creation of inland water which could be brought into recreational use will be encouraged in appropriate places and in particular where there is a marked deficiency in water space"

Overall the policies in the Structure Plan do aim to achieve some sort of balance between nature conservation and water recreation objectives, concerning themselves with alleviating any conflicts before they occur. The policies give a high degree of protection to the rural coastline as well as SSSIs, at the same time as recognising the need to provide facilities for water sports; and they do aim to direct the facilities to the least ecologically sensitive areas. Inevitably, however, as the general discussion on Structure Plans illustrated precedence is given to the needs of nature conservation, as a greater number of policies relate to the protection of inland waters and the coastline, than to provision for water recreation facilities.

In addition to the Structure Plan, the County planning department has produced two other documents

which form supplementary planning guidance, and are of relevance to the discussion, although concerning themselves primarily with nature conservation.

The first is the Essex Coast Protection subject plan (1984), although as a result of the Planning and Compensation Act 1991 its status has been reduced to supplementary planning guidance. This is a disappointment since it forms an important planning document within the County identifying the Coast Protection Belt and recognising the value of the rural undeveloped coastline. With coastal issues coming very much to the forefront there is a need to update this in order to address the other issues along the coastline including water recreation and nature conservation, and to produce a coastal strategy to manage competing interests such as these.

The second document is the Countryside Conservation Plan (1985), which expands upon the policies in the Structure Plan concerning nature conservation, landscape and agriculture, which is applicable to the coastline. This also needs updating, which could possibly include issues threatening the nature conservation value of areas, including recreation.

In addition to these two documents, in 1981 the

County Council produced a Draft Strategic Guidance document on the future of moorings and marinas. This involved surveys of facilities along the coastline and examined the demand for various water sports. There was even a brief discussion of inland water recreation. Each of the water areas along the coast was assessed according to their capacity to provide for further use water sports, with some recognition of environmental constraints. Unfortunately, the document never reached its final stage, due to political opposition from the District Councils in Essex, who felt that because of the level of detail contained within the plan the County was "tredding on the toes" of the districts.

Although some of the detail within it has been translated into Local Plan policies, it would have proved to be a useful planning document in its own right, providing a detailed strategic discussion of water recreation in the County which Local Plans can not do, and examining areas that could facilitate additional use. A survey of this kind now could help identify sites both inland and coastal suitable for water recreation use without causing detriment to the environment, and could be closely related to the statutory development plans.

4.52 The District Councils' planning role

Local Plans provide the main statutory mechanism for the Essex districts to address the conflicts between nature conservation and water based recreation. Because they can contain more detail than Structure Plans, sites can be identified that are suitable for water sport facilities without resulting in conflicts with nature conservation objectives.

Chapter three discused the conflicts and problems on the Blackwater Estuary which is within the Maldon District of the county. Maldon District Council has substantial control over much of the river bed and foreshore of the River Blackwater by virtue of its charter and leases, and along with its planning and other powers is in a unique position to provide a framework for the management of the area.

The policies in the Local Plan (1991) are generally against the development of new water recreation facilities, and aim to avoid any further conflict with nature conservation interests, which can only be welcomed. The policy states:

" The establishment of new water recreation facilities will not normally be permitted around the coastline. The expansion of facilities for water recreation such as moorings, berths, dinghy parks etc in existing centres will be limited according to

the capacity of adjacent water space and other restraints including the wildlife conservation and landscape quality of the area."

One of the factors against which waterside capacity is to be judged is the likely disturbance to existing wildlife populations, which is in clear recognition of the potential for conflict between nature conservation and water sports. The policies are further strengthened by the fact that encouragement is given to restoring gravel workings to a recreation after-use, in particular water sports, which will hopefully take some of the pressure away from the Blackwater.

In addition to the policies contained within the Local Plan, Maldon District planning department is reviewing the Blackwater Management Plan, which was first adopted in 1980. The primary aim of this is to set out the Council's policy for development and management of the area so as to maximise its use as a recreational and natural resource with the minimum of intrusion and disturbance to those who live and work in the area, and to wildlife and landscape. The wider objectives which were adopted for the planning and management of the estuary address many of the conflicts discussed in the previous chapters, including maintaining and enhancing where possible wildlife conservation and landscape quality of the

area; improving and extending facilities for recreation provision where it can be achieved without detriment to the previous objective; and to resolve existing conflicts between interests in the area, to prevent further conflicts and prevent congestion of the river.

Although this does not fall within the remit of the Town and Country Planning system it can certainly be integrated with it to enhance its status, as it provide an important mechanism to overcome existing and potential conflicts.

Many of the other District Local Plans also contain stringent restriction policies on water based recreation facilities on the undeveloped coast whilst encouraging some form of inland water recreation, subject to various criteria including nature conservation concerns. In the Tendring District Local Plan (1991) for example, there is very strong policy of constraint for water recreation facilities on the Walton Backwaters and Hamford Water, which were discussed in chapter three. It is considered that the area is subject to a level of water recreation pressure such that the District Planning Authority consider any further development of boat mooring facilities would be detrimental to the nature conservation importance of

the area. It is noted that this position has been upheld on appeal, which should discourage the submission of planning applications for such facilities. The policy states:

" No further extension of areas currently used for boat moorings or the establishment of new marina/ boat mooring facilities or other water recreation facilities will be allowed in Walton Backwaters".

The Colchester Borough Council Local Plan (1990) refers to water recreation along river courses, of which the Stour is the main one, recognising that nature conservation may limit this use: It states that:

" Proposals to increase access and use for recreation along the main river courses in the Borough will be supported provided that such increased access is compatible with agriculture, nature conservation and landscape character"

The Chelmsford Borough Local Plan (1992) has quite an extensive section on water recreation part of which encourages the use of redundant mineral workings in North East Chelmsford for water recreation. Mineral sites provide the greatest potential for providing for water recreation demand in the County and taking pressure off more sensitive areas, and so such a policy is welcomed.

" As part of the gravel extraction restoration proposals for north east Chelmsford, the Borough Council will pursue in conjunction with Essex County Council the provision of a regional country park to provide for a range of outdoor recreation and leisure activities including comprehensive watersports facilities"

The policies discussed in this section reiterate those of the Structure Plan, generally discouraging new or expanded facilities on the coast due to its nature conservation value, while encouraging where appropriate the development of inland water facilities. It is particularly encouraging to see a number of districts recognising the potential of mineral workings for water recreation and including policies within their Local Plans.

4.6 Conclusion

This chapter has therefore, considered the role of the Town and Country Planning system and the mechanism available at a national, regional and local level to address the conflicts between nature conservation and water based recreation.

A number of conclusions can be drawn from the discussion. Firstly, that planning at a national and regional level can only provide advice and guidance; it is the Counties and Districts that are the implementors and are best located to address the actual problems. Secondly it is apparent that the

planning system through the development control process and development plans is best able to deal with potential and future land use and physical conflicts, and to overcome any increase in existing conflicts by taking a reactive role; while some of the exsiting conflicts are more of a management issue (ie. a proactive) which does not fall within the remit if the town and country planning system. That is not to say the two should not work closely together, with it being apparent from the discussion that local planning authorities are the most appropriate department to produce management plans whether they be on the coastal zone or inland water areas, as they can then be integrated more easily into the statutory planning system, which is essential for the long term future of the plans.

Supplementary planning guidance will certainly have a role to play in addressing the conflicts between the two sets of interests, which can provide more detailed guidance on the policy objectives for the two.

What appears clear is that although the planning system can address the visable conflicts on the ground it can not directly resolve the conflicting values and perceptions discussed in Chapter two. The way of achieving this would be through the

establishment of forums or working groups which may be set up by a local planning authority as a result of producing a management plan or coastal strategy for example; conflicts of interest may also be addressed at a Public Inquiry of the Local Plan or a specific development proposal where each side has a chance to state their view on the policy or development proposal, but in this situation often the only solution is compromise.

Conflicts are still evident on both the coast and inland waters which could be the result of inappropriate management or insufficient planning powers, and so there is room for a certain level of improvement on both sides, and it is to this point that the thesis now turns, concentrating predominately on strengthening and widening the powers of the planning system. However, it must be remembered that planning implementation is often difficult because it is hard to formulate a plan which is acceptable to those who are directly and indirectly affected, and who often have contrary concerns and viewpoints; and so suggestions for improvement may not suit all concerned, particularly as the focus is upon conflicts; one side, that is recreation interests or conservation interests, will claim they are losers.

CHAPTER 5
WAYS FORWARD FOR THE PLANNING SYSTEM

5.1 Introduction

From the discussion in Chapter four it is clear that the town and country planning system does have a role to play in overcoming the conflicts between nature conservation and water recreation, by means of the development plan system and development control process. However, it is apparent that there is room for improvement which could be achieved by strengthening and widening the powers of the planning system. This chapter will, therefore focus on ways to improve the system and for the purposes of the discussion will be divided into four main sections: (1) Widening the powers of the planning system; (2) Recommendations for Local Planning Authorities; (3) Minerals planning which although it is a function of local planning authorities will be treated separately as it is an important issue which merits its own section; and (4) Planners as Managers.

5.2 Widening the powers of the planning system

It can be argued that widening the powers of the

town and country planning system, would open up new opportunities for overcoming the conflicts between nature conservation and water recreation. There are a number of ways in which this could be done, some relating to coastal or inland waters specifically while other suggestions are of a more general nature.

Presently local authority control ends at the low water mark. Although Structure Plans and Local Plans can play a vital role in guiding the use of the shoreline and avoiding conflict they can only go a limited way towards the required holistic approach. For example a marina development can have ecological implications outside the low water mark. If planning controls were to be extended these impacts could be taken into account at the planning application stage. Greater consideration needs to be given to the relationship between activities on land and water.

The House of Commons Environment Committee considered in its report (1992) that the division between the planning control system at sea and on land has been the main cause of current coastal protection and planning policy problems; and in recognising this it states that harmonising the planning system of below and above low water mark is

the basic requisite for an integrated approach to planning in the coastal zone, which is necessary in order to address competing and conflicting interests. It is therefore, suggested that the government introduces legislation to extend planning controls out to sea to the 12 mile limit to enable local planning authorities to have more control over the recreational use of coastal waters; obviously this would need to be tied in with management objectives.

The government has recognised that there is scope for improving local authorities control over the use of inshore waters by water sport enthusiasts, so as to make it easier to introduce zoning requirements fro different activities. This should be implemented as soon as possible; it is plausible to suggest that if planning controls were to be extended out to the 12 mile limit then the zones for different water sports should be built into District Local Plans.

The Government additionally recognises, in its response to the House of Commons Environment Committee report (1992), the possibility of introducing a requirement for recreational moorings to receive local authority consent particularly in areas subject to heavy recreational pressures. The report should clarify, that it will be a requirement

for planning permission. This would clearly aid the process of reducing conflicts between nature conservation and water recreation, as it would mean local planning authorities could stop further growth of moorings in congested areas where environmental impacts are apparent.

Local planning authorities should additionally have increased planning powers over the use of inland waters for water sports. There should be requirement for planning permission for all development associated with water sports and for the actual use of inland waters for water sports so local planning authorities may take a strategic view of the provision for water sports in their area, and ensure that there is no conflict with nature conservation objectives. This would enable some water areas to be used exclusively for water sports while others are left alone for nature conservation purposes, with a presumption against any recreational development.

Circular 1/92 which removes permitted development rights under the General Development Order 1988 on SSSIs for the temporary use of land for motor sports should be extended to water areas that have been designated as SSSI's. This would enable local planning authorities to limit the use of waters for motorised water sports, thereby contributing to a

reduction in disturbance problems and other ecological problems that result from the intensive use of waters by motorised water crafts.

5.3 Recommendations for Local Planning Authorities

There is a need for a greater level of strategic planning when it comes to the conflicts between water recreation and nature conservation, and Counties would seem to be the most appropriate authorities to implement such an approach being responsible for the production of Structure Plans which contain strategic development policies.

It can be argued that marinas illustrate particularly well the current lack of strategic planning on coastlines, where individual proposals are addressed in isolation, without any consideration of the contribution they make to actual demand when set against proposals elsewhere.

Strategic planning may help overcome conflicts that arise on inland waters where there is a nature conservation and sporting interest. For by taking a strategic approach certain prime water resources can be allocated to a nature conservation or water sport

use, which would allow a more intensive use of some water bodies while allowing others to be left undisturbed. A County Council may implement such an approach by means of supplementary planning guidance, while District Councils could include more detail in their Local Plans. The development of a strategic approach also depends upon the co-operation of the different interests involved: this would help overcome conflicting values and interests, which the planning system is unable to deal with directly.

As already suggested Local Plans could include more site specific proposals, detailing sites where applications for water recreation facilities would be looked upon favourably, and closely tied to this sites where there would be minimum conflict with nature conservation interests could be identified. This would mean that ecologically sensitive sites could be left undisturbed. As Walthem et al (1987) argue a system of environmental policy appraisal could be implemented which would provide an opportunity to anticipate and hopefully ameliorate the adverse effects of a policy at an early stage of its formation. By employing this technique it would enable districts to identify sites for water sports where there would be minimal ecological damage; and therefore, the least damaging proposals could be put

forward in Local Plans.

With regard to the development control function of district planning authorities, when considering planning applications for water sport facilities it should be ensured that a full environmental statement is included, that includes an assessment of the wider environmental implications. This should be undertaken by an independent consultant, employed by the developer.

Additionally when granting planning permission, districts should consider making use of Section 106 Agreements to restrict, for example the opening times of the facility so that in winter when disturbance to birds is critical, the mooring facility/ clubhouse could be closed so as to restrict the number of craft using a water area.

When considering planning applications for water sport facilities, local planning authorities need to ensure that they address the ecological capacity of a site, that is the maximum recreational use that can be accommodated before there is an unacceptable or irreversible decline in its ecological value. Although this may to some extent be subjective it is a useful planning tool as the capacity of a water resource may be increased by good planning.

Before making planning decisions on the after use of mineral sites for water sports, local authorities could consider the use of noise tests, so as to limit any disturbance to wildlife that may use the water. Additionally, temporary planning permissions could be considered to limit the use of water areas to the least critical times of year for wildlife. If planning controls were to be extended these suggestions could be applied to all water areas.

On ecologically sensitive estuaries, local planning authorities should seek to stop the further growth in moorings and not have exceptions to policies, where marina developments are discouraged except under certain circumstances. On the most sensitive sites that are also congested due to the level of water sport usage, local planning authorities should seriously consider possible ways of reducing the number of moorings, one way would be to open up new facilities in other areas for example on disused mineral sites and less ecologically sensitive areas, to compensate for the loss of facilities on coastal areas. However, there would be a need for convincing evidence of adverse environmental impacts if reduction is to be sought at certain sites, as local opposition would be extremely strong.

5.4 Minerals planning

With demand for inland water facilities for water recreation increasing and pressure growing on sensitive coastal areas the greatest potential for water recreation exists in the future use of restored "wet" pits resulting from mineral extraction. Although some local planning authorities do have policies within their development plan encouraging recreation as an after use, there is scope for improvement. County councils and district councils should place greater emphasis on the need for a recreational after-use in particular for water sports and move away from presuming that the majority of sites will be restored to agricultural land, particularly given the present agricultural economic climate and policies.

The opportunities should be recognised at the planning stage and subsequent configuration and restoration of extraction areas should take account of the needs of the after use activities concerned. If the opportunities for a water sport after use were recognised at the planning application stage this would enable minerals planning authorities to make use of Section 106 Agreements to enable the provision of facilities which are an integral part of the proposed end use, for example a clubhouse.

It is additionally important to decide the after use of a minerals sites early in the planning process, because some of the sites almost inevitably develop some conservation interest and so an early decision would avoid potential conflict between sporting and nature conservation interests at a later stage.

The formulation of a Minerals Local Plan provides an opportunity to give guidance on the preferred after uses of certain sites. It would seem reasonable to suggest that while authorities are identifying sites for mineral extraction, a number could be earmarked for a water recreation after use particularly where there is a known deficiency of facilities in the area. Of course this would require a survey of the supply and demand of water sport facilities.

Additionally it must be noted for some types of mineral extraction sites such as hard rock quarries that have a life of 60 years or more it is not possible to identify a specific after use, unlike with sand and gravel extraction where the life of the pit is only 10 years, and therefore makes it easier to prescribe a preferred after use, this could certainly be the case in Essex for example.

According to the Sports Council (1992) in examining the extent to which existing or proposed net mineral

workings can meet the needs of water sports local planning authorities must take full account of the following:

(i) The demand characteristics of the water sports;

(ii) Known deficiencies in the supply at the local regional and national level; and

(iii) The facilities required to relieve pressure on existing over used and/or sensitive sites.

However, in all of this there would appear to be one inherent problem and that is that the actual decision on the provision of recreation facilities at a site will be made by the district planning authority as they need to give planning permission for any form of development. As county councils are the minerals planning authority it would seem reasonable to suggest that they should be responsible for the whole minerals planning process from permission for extraction to permission for an after use; instead of their remit ending at restoration and after care requirements. This suggestion would enable the identification of preferred after uses for certain sites and enable an early decision on the after use. Additionally many of the previous suggestions would be easier to implement such as Section 106 Agreements; for if the county council can go to the operator and say that a site has been identified for a water recreation

after use to meet known deficiencies in supply then it may be easier to negotiate a Section 106 Agreement with the operator for facilities essential to the after use.

5.5 Planners as Managers

Knox and Cullen (1981) viewed planners as managers and reinforcers of particular values. In looking to resolve the conflicts between nature conservation and water based recreation, planners should increasingly realise the role of management plans and the potential to integrate them with the statutory planning system. Although the current planning system does have a role to play in addressing the conflicts between nature conservation and water recreation, there is the need for other mechanisms, such as pro-active management, as a wider approach than can be provided by the planning system is needed to resolve some of the conflicts. Planners, however are in a good position to take on some of the management issues.

Over the past year there has been much debate on the role and importance of coastal management plans which should address the particular pressures on the coastal areas including recreational facilities and the potential for environmental damage. The long

term trend in the popularity of boating raises the question of where the future provision can be made on Britains coast. It is therefore, becoming crucial to manage water space more efficiently and equitably.

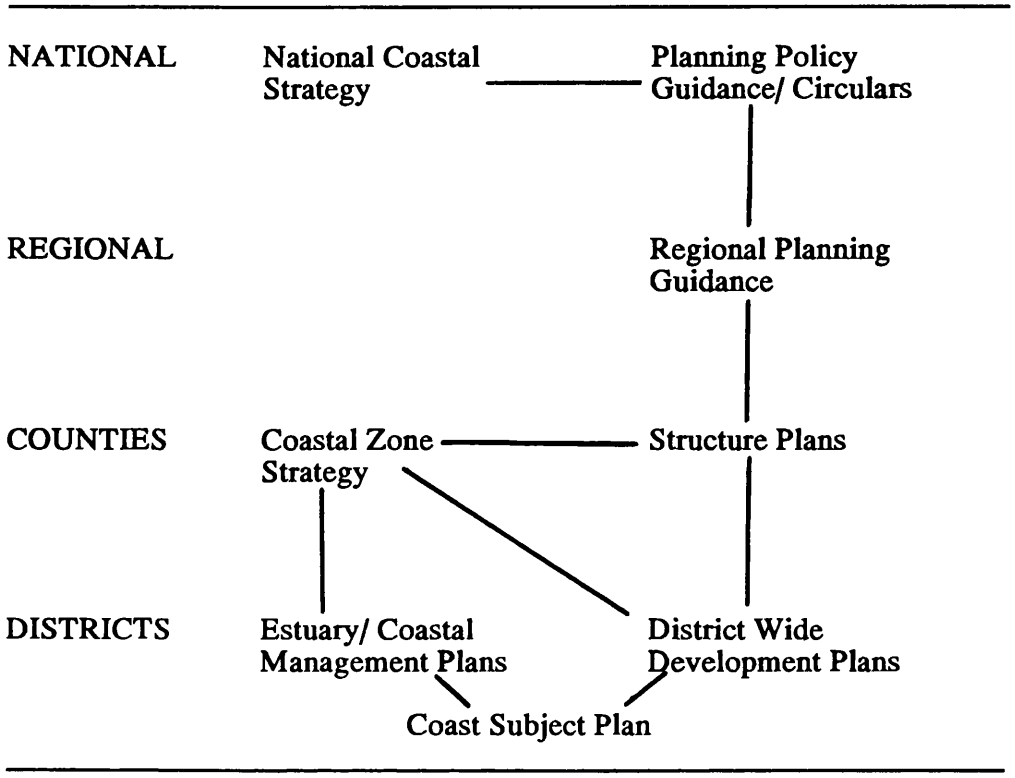
The government expects these plans to be prepared where there are demonstrable conflicts and states:

"Management Plans and statutory development plans should complement each other: the development plan should inform the management plan: the management plan should be taken into account in preparing and reviewing development plans". **(Government's response to the Second Report from House of Commons Select Committee on the Environment. 1992)**

There is a need now for these plans to be written into the existing planning legislation, so as to provide planning authorities with a definite role. Local planning authorities can then take the lead role in bringing together various statutory and voluntary organisations to prepare a strategy for the future management and wise use of estuaries which will include addressing the conflicts between nature conservation and water sports. Figure 8 clearly illustrates how management plans can be integrated with the statutory planning system, and how Coast Subject Plans should still be a part of the overall framework according to the RSPB. However, although a re-introduction of Subject Plans would be welcomed, as they would provide an

FIGURE 6

Coastal Zone Plans and the Planning System



Source: RSPB - A Time for a Greater Thames p.14. 1992

opportunity to expand on water recreation and nature conservation policies in development plans, and address some of the issues between the two, it is not a very realistic suggestion as it would be seen as a U-turn in Government policy, and therefore unlikely to be even considered.

5.6 Conclusion

This chapter has examined a number of options for the improvement of the planning system to make it more able to address the conflicts between nature conservation and water based recreation. It has also touched upon a number of management issues.

The greatest potential for resolving conflicts, seems to lie in the development of disused mineral workings as water recreation centres, which local planning authorities need to encourage more effectively. They have the potential to take pressure away from the more ecologically sensitive and congested sites, and therefore to reduce conflicts in the long term.

There are a number of other options, however, that could make a contribution, including widening local planning authorities planning powers, and the implementation of a more strategic approach to water sport provision, so as to discourage it in areas of great wildlife importance. As we have seen there is also scope for local planning authorities to produce management plans to be closely integrated with the statutory development plan.

What is clear is that planners should take on board

and give greater recognition to the conflicts between nature conservation and water recreation and not necessarily see them as a problem to be solved by leisure industry managers. For as peoples leisure time increases and environmental damage continues, the role of planners will increase, and it is better to start addressing the conflicts now rather than later, when bird numbers on waters will have decreased and habitats will have been lost or damaged. There is a role for planners as chapter four argued, and this can increased by widening and strengthening their powers.

CHAPTER 6
CONCLUSION

6.1 Introduction

The preceding chapters indicate that although conflicts do exist between nature conservation and water based recreation, it is possible to work towards resolving them through the town and country planning system, integrated with pro-active management. It is clear that planners are increasingly realising the environmental implications of their decisions, and therefore when considering nature conservation and water recreation objectives the aim is to try and integrate the two, and provide for both sets of interests. It is, however, apparent that nature conservation is more and more taking precedence over provision for water sports; so although planners may often seek to achieve a balance between the two objectives, it can be an "unequal" equation.

However, it has been argued that recreational interests have to appreciate that as environmental concerns and standards of protection increase, alongside a growth in the demand for water sports, one set of interests must make concessions; and as

the natural environment is a scarce resource it would appear that planners are quite correct in their assumption that when irreconcilable conflicts are apparent nature conservation must take precedence.

6.1 The Main Findings and Recommendations

Conflicts between nature conservation and water based recreation are two-fold, firstly it was found that there are the land use conflicts and physical impacts such as disturbance to wildlife, habitat degradation and habitat destruction; and secondly conflicting values and interests, where differing perceptions and interests are either uninformed or unwilling to compromise.

It is apparent that conflicts are the most critical on the coastline, due to the ecological sensitivity of the area and the enormous recreational pressures placed upon it. Once an area of intertidal mudflat has been lost and birds moved away from the site due to disturbance from recreational craft, then neither are likely to reappear. The situation is particularly critical in winter when birds are most vulnerable to any sort of disturbance. With coastal waters getting ever more congested water sport enthusiasts are increasingly looking to inland

waters for additional facilities which will result in more pressure on these areas some of which are highly important in terms of their nature conservation value.

The County of Essex clearly illustrates many of the aforementioned points; its coastline is extremely important for wildlife and yet due to its length, estuaries and creeks it attracts a wide range of water based sports. The growing interest in water and waterside pursuits has placed significant pressure on these areas and has given cause for concern over the future health of the estuaries. Enclosed inland waters on the other hand are a scarce resource in Essex, and the few that exist are important for wildlife which limits their use as water recreation areas. The rivers although numerous are relatively narrow and so suitable only for angling, and canoeing in places, with boating being limited to just a few locations. Although there is a certain amount of pressure from sporting organisations to develop enclosed inland waters for water sports, the conflicts are minimal in Essex compared to other areas where conflicts such as disturbance to birds were more apparent.

Therefore, with environmental concerns and pressures rising at the same time as an increasing interest in

water sports as people generally have more leisure time now than in the past, the question must arise as to how address the conflicts that arise between the two interests and provide for the needs of water sports while recognising the need to protect the environment.

The town and country planning system clearly has a role to play. Recent government advice has concerned itself very much with environmental issues and the notion of "sustainable development", with PPGs issued on sport and recreation, the development plan system, the coast and nature conservation, each of which provide a role, and appropriate mechanisms for local planning authorities to address the conflicts between water recreation and nature conservation, whether it be through policies in development plans, development control decisions, supplementary planning guidance or management plans that should be closely integrated with the statutory planning system. Government advice therefore provides the framework within which local planning authorities must work.

Local planning authorities implement national and regional guidance, and are therefore the most important element of the British town and country planning system. They are in the best position to

address the conflicts between nature conservation and water recreation, being based at the local level, and have a number of options open to them to do so.

Policies within development plans both at a county and district level provide local planning authorities with a opportunity to stop any further growth in the physical conflicts, by discouraging recreational facilities in the most ecologically sensitive areas, or by encouraging water sports in areas where the implications for nature conservation will be minimal. Structure Plans take the strategic view while Local Plans can address the conflicts on a site specific basis.

District planning authorities may also be effective in addressing and controlling the conflicts through the development control process. By refusing planning permission for marinas, moorings and other water recreation facilities, which ultimately lead to an increase in activity on the water and consequently potential for an increase in conflicts, local planning authorities may contribute to limiting the conflicts between the two interests.

County Councils on the other hand may include policies within their Minerals Local Plan promoting

a recreational after use of sites, which would help take pressure away from the more ecologically sensitive sites. Additionally supplementary planning guidance provides a way of expanding on policies within the development plan, and therefore provide a mechanism to discuss issues in more detail, such as water sport provision and the implications for nature conservation.

Both development plans and the development control process are reactive controls in that policy and planning application decisions are based upon an assessment of current conflicts. To seek a reduction in the current conflicts a wider mechanism than can be provided by the planning system is needed: that is management. This can easily be integrated with the planning system as the cases of Hampshires' coastal plan, and the Norfolk Broads management plan illustrated.

It has proved more difficult for the town and country planning system to think about addressing the conflicting values and interests discussed in chapter two. The main way would seem to be through the establishment of forums or working parties set up as a result of a management plan or in relation to a specific issue or area such as planning in the coastal zone. This provides an opportunity for

different interests to discuss what they perceive to be the main problems and issues. Additionally it would be hoped that by seeking to address the physical land use conflicts, some of these differing values and perceptions would also be overcome.

Because conflicts between nature conservation and water recreation are still apparent, it is suggested that the current initiatives have not been entirely successful and so there is a need for improvement on both the management and planning side. It must however, be noted that the effects of policies within recent development plans discouraging water recreation for ecological reasons will not be felt immediately. This must be taken into account when critically assessing the role and effectiveness of the current planning system. Nonetheless, it has still been possible to make a number of suggestions for the improvement of the town and country planning system.

It would appear that the greatest potential lies in the after use of redundant minerals sites, for not only have they the potential to provide for any shortfall in water recreation facilities in a given area, but in conjunction with stringent restrictions on the development of water recreation facilities on ecologically sensitive areas and congested sites,

they have the potential to aid the process of reducing conflicts on these sites, by functioning as a "Honey Pot", that is encouraging water sport enthusiasts to the site and away from environmentally sensitive ones. Local planning authorities need to attach greater importance to this issue and not take the view that mineral sites will predominantly be returned to agricultural land.

It is argued that opportunities should be recognised early in the planning process, and that county councils should be responsible for the whole of the minerals planning process, in order to strengthen the decision making process and enable agreements to be made more easily with operators early on in the planning process regarding the preferred after use for the site.

It was seen in chapter five that by widening the powers of local planning authorities, for example by extending planning controls beyond the low water mark, new opportunities are opened up for local planning authorities to address the conflicts. Additionally it was argued that local planning authorities could strengthen their existing powers, for example by taking a more strategic approach to planning for water recreation and conservation needs, or by including more site specific proposals

in Local Plans.

One final recommendation is that planners should increasingly realise their role as managers and the fact that they are well placed to produce management plans so that they may be successfully integrated with statutory development plans which is essential if management is to be successful.

The issues discussed in this thesis are both topical and somewhat subjective, and although it may be difficult to put the conflicts into quantifiable terms, it is clear that they do exist. The major aim has been to examine and establish the role of planners in resolving the conflicts; what is clear from the discussion is that they do have an important role to play; which could be further enhanced if planning powers were to be extended and strengthened, and planners recognised their secondary role as managers. There is therefore, no reason why conflicts cannot be significantly reduced in the near future; for although the current mechanisms of the planning system would eventually see a reduction in conflicts, there is a need to quicken the process so that conflicts do not become any more deep rooted and so that no more irreversible ecological damage occurs.

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APPENDIX 1

Organisations interviewed

Royal Society for the Protection of Birds (RSPB)

English Nature

Essex Wildlife Trust

National Trust

Eastern Council for Sport and Recreation (ESCR)

National Rivers Authority (NRA)

Postal Questionnaires

Countryside Commission

ECSR

Essex Water Company

Jet Ski-ing Association

Maldon District Council

Sports Council

Tendring District Council

Water Ski-ing Federation

APPENDIX 2

Enclosed Waters in Essex used for Water Recreation

Site Name	Use
1. Northlands park, Basildon	Fishing, boating
2. Gloucester Park, Basildon	Fishing, boating
3. Lake Meadows, Billericay	Fishing, boating
4. Gosfield lake	Water ski-ing, angling
5. Straights Mill, Bocking	Angling - proposed
6. Western Road, Silver End	Angling
7. Lady's Pond, Navestock Park	Angling
8. Danbury Park Lakes	Country park
9. Brent Hall, Boreham	Planned recreational use
10. Gt.Holt and Wallaces Farm Boreham	Natural lakes
11. Broads Green	Angling
12. Channels	Boardsailing
13. Sandon Pit, Lower Green	Angling
14. Wivenhoe, Keelers Yard	Angling
15. Birch Pit	Angling, rowing, sailing canoeing
16. Inworth Grange Farm, Tiptree	Angling
17. Alresford Creek	Angling
18. Rowhedge	Angling
19. Luxborough Lake	Angling
20. New Barns Farm Lake	Boardsailing/ sailing
21. Connaught Water	Angling
22. Fishers Green, Waltham Abbey	Windsurfing, sailing, racing, cruising,angling
23. Paynes Lane Lake, Nazeing	Angling
24. Landridge Farm Lake, Nazeing	Angling
25. Rushey Mead Nursery, Nazeing	Sailing
26. Sedge Green Lane, Nazeing	Sailing, angling
27. Netherall/Glen Faba (3 pits)	Trout Fishery
28. Temple Farm	
29. Heybridge Hall	Angling, sailing
30. Bradwell Pit	Water ski-ing, angling
31. Asheldham	Angling
32. Hoes Mill, Ulting	Angling
33. Chigborough Farm Pits Maldon	Angling, planned recreational use, water ski-ing
34. Rochford Reservoir	Angling
35. Bobbing Pond, Doggets Chase	Angling
36. Star Lane, Gt Wakering	Angling
37. Lambourne Hall, Canewdon	Angling
38. West Barrow Hall, Rochford	Angling
39. Eastwood Rise, Rayleigh	Angling
40. Baldwins Pit, Barling Magna	Potential for water sports

Site	Use
41. Plumptons Farm, Alresford	Angling (Nature reserve)
42. Noah's Ark Fields, Brightlingsea	Angling
43. Mill Pond, St Oysth	Water Ski-ing
44. Walton Mere	Potential for water recreation
45. Buckles Lane	Angling
46. Grangewaters	Angling, windsurfing canoeing
47. Greenlands Quarry	Potential for water recreation
48. West Thurrock	Angling, boating planned
49. Warren Lane Pit	Recreational use planned
50. Lion Pit	Angling, nature conservation
51 Shell Fishery, Standford-le-Hope	Angling
52. Bushey lane Pit	Angling, potential for water ski-ing
53. Heronry Shaw, Mucking	Angling
54. Hill Farm, North Stifford	Angling
55. Little Belhus, Aveley	Angling
56. Marely Tile Pit, Aveley	Angling
57. Baldwins Farm, North Ockendon	Future Country park linking to Upminster Lake
58. Stump Cross, Great Chesterford	Angling

Major Rivers/Canals in Essex

River Blackwater	Informal recreation/angling
River Chelmer	Includes R.Can and R.Wid - angling, canoeing, informal recreation
Chelmer/Blackwater navigation	Boats, canoeing, angling moorings
River Colne	Upstream angling and informal recreation only. Boating, canoeing, and sub-aqua between Middle Mill and Marriages Mill, Colchester.
River Lee/ River Lee navigation	part of Lee Valley Regional Park. Boating,canoeing, sailing, angling, white water caoeing at Dobbs Weir
River Roding	Angling, informal recreation
River Stort	Boating, canoeing, angling moorings
River Stour	Boating, canoeing, angling canoe slalom a Dedham Mill

Main Reservoirs

Site	Use
Abberton	Important for nature conservation, angling, bird watching
Ardleigh	Sailing, angling, bird watching, sub-aqua
Hanningfield	SSSI, trout fishery Windsurfing
King George V	Part of Lee Valley Regional Park: sailing, dinghy racing, angling.

Source: Essex County Council, and ECSR Reports 5 & 14.

APPENDIX 3

Definitions of Nature Conservation Designations

Sites of Special Scientific Interest (SSSIs)

Under the Wildlife and Countryside Act 1981 (ammended 1985) English Nature designate an SSSI, which is a piece of land considered to be of special nature conservation interest by reason of its flora, fauna, geological or physiographical features.

National Nature Reserves

English Nature are empowered under the Wildlife and Countryside Act 1981 to declare NNRs which are designated because of their national and sometimes international importance for nature conservation.

Local Nature Reserves

Local Authorities (district councils in England) have the power to establish an LNR. They must normally be of a high nature conservation interest or have a high natural history value in a District or County context.

Ramsar Sites

Ramsar sites were established as a result of the Ramsar Convention (1971), which required the government to accept responsibility to promote the conservation of wetlands of international significance. In respect of birds it is defined as a site holding 20,000 wildfowl, or regularly supporting 1% of the individuals of a fly away population of one species of waterfowl.

Special Protection Areas (SPAs)

The EC Directive of April 1979 requires the designation of SPAs, which seek to provide Community- wide protection for all wild birds and their habitats with special protection for some endangered and migratory species. Britain is required to preserve a suffucient diversity of habitats for all species of wild birds occuring within its territory so as to maintain their population at an ecologically and scientifically sound level.


APPENDIX 5
Hamford Water
Key
SSSI Boundary
Boundary between A,B,C and D follows Mean Low Water Mark
A
B
C
D
River Stour
Bathside Bay Marina Proposal
Marina\Mooring Proposal
Harwich
Hamford Water
Horsey Island
Walton Backwaters
Marina
THE NAZE
Walton-on-the-Naze
TENDRING DISTRICT
HARWICH HARBOUR
1:50000

APPENDIX 5

HARVEY, Nature conservation
TP Lthir, 1993


APPENDIX 4
The Blackwater Estuary
Key
SSSI
Boundary
Boundary between A, B, C, D, E, and F follows Mean Low Water Mark
Scale 1:50 000
Mersea Island
Ray Island
Strood Channel
WEST MERSEA
Tollesbury Fleet
Tollesbury Marina
Maldon
Goldhanger Creek
NORTHEY ISLAND
OSEA ISLAND
MALDON DISTRICT
Bradwell Marina
Saint Lawrence Bay
A
B
C
D
E
F

APPENDIX 4

HARVEY, Nature conservation ...

D. Phil. 1993