



The Stour and Orwell Estuaries

EUROPEAN MARINE SITE

MANAGEMENT SCHEME

Compiled by the
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FOREWORD

The Conservation (Natural Habitats &c.) Regulations (1994) enables the organisations listed on the previous page, known as the 'Relevant Authorities', to produce a Management Scheme to guide the exercise of their functions, in order to secure compliance with the EU Habitats Directive (1992) and Birds Directive (1979).

A voluntary estuary management plan for the Stour and Orwell was published in 1996 and takes a broad view of the issues affecting sustainable use of the area's resources. By contrast, this Management Scheme for the European Marine Site is a statutory document which has been written in line with guidance set down by Government and sets out the responsibilities for managing the different elements of the European Marine Site as they are exercised by the Relevant Authorities.

The Management Scheme has been written by the Relevant Authorities, with support from the Stour and Orwell Estuaries Officer, and with appropriate consultation (between 28th June and 9th August 2002) with user groups and the wider Estuaries Management Group. It is important to note that the Scheme itself is more than just a document. It is a process, providing a framework within which existing management responsibilities for the European Marine Site can be exercised in a manner which safeguards the features for which the site has been designated. As such, monitoring the effects of those management measures on site features is an important element of the Scheme's implementation. The results of this monitoring will determine any changes that might be required for the Management Scheme at the end of the first monitoring period (2006). Further updates and general information relating to the estuaries' management can be found at www.stourandorwell.org.

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1 AIMS OF THIS MANAGEMENT SCHEME	1
2. THE IMPORTANCE OF THE STOUR AND ORWELL ESTUARIES	1
(a) History	1
(b) Environment	1
(c) Leisure	2
(d) The economy	3
3 PROTECTION OF THE STOUR AND ORWELL ESTUARIES	4
(a) The Birds Directive	4
(b) Designation of the Stour and Orwell estuaries	4
(c) The Habitats Regulations	4
(d) European Marine Sites	5
(e) Relevant Authorities	5
(f) Consultation with stakeholders.	6
4 REGULATION 33 ADVICE	6
(a) Site features.	6
(b) Site sub-features	7
(c) Conservation objectives for the Site.	7
(d) Maintaining favourable condition	8
5 PLANS AND PROJECTS	9
6 SUMMARY OF ACTIVITIES TAKING PLACE ON THE EUROPEAN MARINE SITE AND THEIR MANAGEMENT	10
Example table explaining categories	11
6 (a) Water Inputs and Quality	12
(a) i Agricultural diffuse pollution	13
(a) ii Agricultural water abstraction	14
(a) iii Contaminated run off from roads and hard surfaced areas	15
(a) iv Industrial discharges	16
(a) v Sewage discharges	17
(a) vi Oil spills	18
(a) vii Anti-fouling paints	19
6 (b) Land-Based Recreation.	20
(b) i Maintenance of rights of way.	21
(b) ii Public access to, and recreation around, the foreshore.	22
(b) iii Wildfowling	23
6 (c) Inshore/Recreational Fishing Activities	24
(c) i Hand gathering of shellfish	25
(c) ii Bait digging	26
(c) iii Shore-based angling	27
(c) iv Recreational boat angling	28

6 (d) Water-Based Recreation	29
(d) i Water ski-ing and the use of personal watercraft	30
(d) ii Windsurfing	31
(d) iii Swinging moorings and intertidal moorings (including half-tide moorings).	32
(d) iv Sailing and motor boats	33
(d) v Marinas and boat yards	34
(d) vi Canoeing	35
6 (e) Commercial Fishing	36
(e) i Molluscan shellfisheries	37
(e) ii Commercial fishing (other than molluscan shellfish)	38
6 (f) Ports and Shipping Activities	39
(f) i Maintenance dredging and disposal of dredge spoil	40
(f) ii Anchoring	41
(f) iii Ship wash from commercial vessels	42
(f) iv Non-toxic contamination (waste and sewage disposal) from ships	43
(f) v Introduction of non-native species from shipping	44
(f) vi Toxic contamination from shipping	45
(f) vii Disturbance from port activities and cargo handling	46
(f) viii Toxic contamination from port activities and cargo handling	47
(f) ix Non-toxic contamination from port activities and cargo handling	48
(f) x Port maintenance	49
6 (g) Aviation Activity	50
(g) i Military aviation activity	51
6 (h) Flood and Coastal Defence	52
(h) i Clearance of borrowdykes	53
(h) ii Maintenance of coastal defences	54
6 (i) Houseboats and Beach Huts.	55
(i) i Wrabness beach huts.	56
(i) ii Boats used for housing and industry at Pin Mill	57
7 SUMMARY OF ACTIONS ARISING.	58
8 COMPLIANCE MONITORING PLAN.	61
9 CONDITION MONITORING PROGRAMME.	61
APPENDIX I - LIST OF RELEVANT AUTHORITIES AND THEIR JURISDICTIONS	64
APPENDIX II – GLOSSARY	65
APPENDIX III – REFERENCES	73
APPENDIX IV - FURTHER INFORMATION ABOUT THE SITE'S FEATURE BIRD SPECIES	75





1 AIMS OF THIS MANAGEMENT SCHEME

- This Management Scheme has been drawn up as a framework to enable the Relevant Authorities to carry out their responsibilities and functions, in line with the requirements of the Habitats Regulations, and with regard to the nature conservation features for which the Stour and Orwell European Marine Site has been designated.
- The Management Scheme is concerned with promoting the sustainable use of a living, working estuarine environment. It does not aim to stop people using the Stour and Orwell estuaries or prevent leisure activities or commercial development in the area. Instead, it brings together all existing management measures in place around the estuaries, and provides the mechanism by which these can be delivered so that they do not damage the habitats or species for which the site has been designated.
- The Management Scheme will not be a static management plan, but an ongoing process that aids decision-making and continually evolves to take account of changing issues and legal obligations. It examines whether current management is sufficient to protect the European Marine Site, sets out a regime to monitor the condition of the Site's features and considers options to rectify any shortcomings in existing management measures.


2 THE IMPORTANCE OF THE STOUR AND ORWELL ESTUARIES

Anyone who has ever visited these estuaries would have been struck by both the beauty of their landscape, and the high levels of activity in and around the water. With large ships constantly passing through the shared mouth of the estuaries, and numerous yachts cruising around, the estuaries' wildlife inhabits the many peaceful havens amongst these pockets of activity. The Stour estuary straddles the Essex/Suffolk border. Ipswich, the county town of Suffolk, is at the head of the Orwell, and the towns of Felixstowe and Harwich sit opposite each other at the joint mouth of both rivers.

(a) History

The estuaries have played an important role in history. The Romans used the Orwell as a navigation route into Ipswich, and were the first to reclaim land for agricultural purposes. The fertile land has been used around both estuaries for many centuries now, with sea walls having been constructed around the entire perimeter of both estuaries to aid land reclamation, particularly in the 16th and 17th centuries. Around 983 hectares of land have been reclaimed around the Orwell, and 1,601 hectares around the Stour.

The Wet Dock (part of Ipswich Port) was built in the 1840s, and at the time was the largest wet dock in the country. Parkeston Quay was built on reclaimed land in 1883, and renamed Harwich International Port in 1990. It is now owned by Hutchison Port Holdings. The Port of Felixstowe, also owned by the same company, received its first ships back in 1886, but has grown considerably in the past 30 years, from a small fishing haven, to the 4th biggest container port in Europe. An expansion in 1989 led to the establishment of Trimley Marshes Nature Reserve as compensation for the loss of intertidal habitat. A major capital dredge took place in 1993-4, and again in 1998-2000, to deepen the approach channel to Felixstowe. The Port of Felixstowe is in the process of applying for an extension of approximately 200m. of the Trinity III terminal.



(b) Environment

Both estuaries are notified as Sites of Special Scientific Interest (SSSIs) under the Wildlife and Countryside Act (1981), in recognition of the nationally significant wader and wildfowl populations. The Stour Estuary SSSI contains nationally important geological features. The intertidal areas of the estuaries, being designated as SSSIs, are protected under the Wildlife and Countryside Act (1981), as amended by the Countryside & Rights of Way (CROW) Act (2000), giving them an additional level of protection. The estuaries are also designated as a Ramsar site under the Ramsar Convention (1971), which aims to promote the conservation and wise use of wetlands and their resources.

The estuaries' designation as a Special Protection Area (SPA) under the EU Birds Directive will be covered elsewhere within this chapter, as it is this designation which has given rise to this Management Scheme.

The banks of the River Orwell and the north side of the River Stour lie within the Suffolk Coast and Heaths Area of Outstanding Natural Beauty (AONB), designated in 1970. The landscape importance of AONBs is on a par with National Parks. With the introduction of the Countryside and Rights of Way Act in 2000, public bodies must now pay regard to AONB objectives and local authorities have a statutory duty to create a management plan for each AONB. It is not clear why the south side of the River Stour was not included in the AONB at the time of designation, but there is considerable local support for its inclusion, as it is considered to be of equal landscape value. The Essex and Southend-on-Sea Replacement Structure Plan strongly supports the extension of the AONB, containing policies which seek to conserve and enhance the area's landscape character and provide for quiet enjoyment of the coast and countryside (Policy NR3), ensuring that wildlife of the area is not adversely affected (Policy CC1). These policies clearly support the aims of this Management Scheme.

The Stour and Orwell estuaries support an interesting and diverse wildlife population, in both sub-tidal and intertidal areas. Much of the international interest relates to the large bird populations (which are dealt with in more detail further on), and these in turn are heavily dependent on the mudflats and saltmarshes around the estuaries. The mudflats contain vast numbers of invertebrates of many species, which provide a food source for various birds - the Orwell has the highest invertebrate diversity of any south-eastern English estuary. Over the past twenty years, the numbers of mollusc species within the mudflats have decreased, while numbers of polychaete worms have increased, although the cause of this is unknown. Saltmarshes also support invertebrate populations, and provide cover for roosting and feeding. Both types of habitat are threatened locally and nationally, because of land reclamation and potentially from 'coastal squeeze' - where saltmarsh is constrained by sea walls and is unable to respond to sea level rise. The Stour estuary lost an estimated 59.3% of its saltmarsh between 1973 and 1997, and the Orwell lost 46% over the same period. Most of this was due to erosion, but a relatively small percentage was lost as a result of land reclamation.

In the water, there are many invertebrate and fish species - the water quality in the Stour and Orwell is very good. All sections of the estuaries have been graded as 'A' according to the Environment Agency's estuarine classification system, apart from the uppermost parts of the Orwell around the Dock area, which has been graded 'B'. This classification system examines water quality in terms of dissolved oxygen, biological quality and pollution inputs.



(c) Leisure

The Stour and Orwell are important to local people for recreation and relaxation. Popular with sailors and walkers, they offer sheltered waters and unrivalled views and are easily accessible, with good transport links to the neighbouring counties. The Stour & Orwell Path follows the perimeter of both estuaries, linking up with the Suffolk Coast & Heaths Path to the north and the Essex Way to the south. The marinas dotted around the estuaries are a popular stopping-off point for yachts travelling along the east coast and for continental sailors. Over 1,700 leisure craft are moored on the River Orwell, with a further 800 on the River Stour. Birdwatchers are also attracted to the area, particularly when migrating and overwintering species appear in August and September. Other sports undertaken around the estuaries include wildfowling, angling, water-skiing, paragliding, wind surfing, canoeing and the use of personal watercraft ("jet-skis").

The Suffolk Structure Plan recognises that there is a long-term increase in demand for waterborne recreation facilities in the area. The Plan proposes to only allow new developments where they will be in or close to towns (such as Ipswich Wet Dock), particularly on existing derelict, redundant or under-used water frontages. The Plan also proposes to promote rights of way with full regard to protecting sensitive wildlife areas.

The Essex and Southend-on-Sea Replacement Structure Plan has identified a need for strategic areas for countryside recreation in Essex (Tendring District in particular). However Policy LRT4 indicates that such areas should be located close to main centres of population, and accessible to existing towns by a choice of means of transport. The areas should also be compatible with the conservation of features and buildings, or areas of importance for archaeology, architecture, history, nature conservation and landscape. Policy LRT6 directs the construction of new, or the expansion of existing, water recreation facilities, marinas, moorings, boat launches and parking facilities away from the area, thus protecting the European Marine Site.

It is considered important, not just to the wildlife of the estuaries, but also to the economic and developmental interests of south Suffolk and north Essex, to maintain the estuaries as an important natural resource. The Regional Planning Guidance for East Anglia (RPG6, published in 2001 and available from the Stationery Office), which relates to the area north of the River Stour, states that increased prosperity over the last 25 years has increased resources available to conserve and enhance the environment, which has in turn enhanced the region's attraction for further investment.



(d) The economy

Industry around the estuaries is, for the most part, situated around the major towns. One of the biggest employers is British Fermentation at Felixstowe, and other industries include breweries, maltings, boatyards, refineries and a specialist inkjet-paper plant. There is a relatively small fishing fleet associated with the estuaries. Arable farming is a key aspect of the economy, with many large farms bordering the estuaries. Crops such as sugar beet and cereals are most commonly grown. However the main industry in the area is generated by the three major ports in the estuaries.

The Port of Ipswich has brought prosperity to the town since Roman times. It is owned by Associated British Ports (ABP), and handles containerised traffic, forest products, liquid bulks, dry bulks and general cargo. A thrice-daily ro-ro ferry operates between Ipswich and Ostend and the port has also recently regenerated its Wet Dock, which now provides 500 yacht berths.

The ports at Harwich and Felixstowe provide even more jobs for the region and play a significant role in the economy, not just locally, but nationally too. The Port of Felixstowe is one of the most efficient ports in Europe (and indeed the World) in terms of space usage, and is also the largest container port in the UK (and 4th largest in Europe). Numerous lorries and 14 trains a day bring in the 300,000 containers that pass through Felixstowe each year.

Harwich International Port traffic includes hydrocarbons, container shipments, and ro-ro transport. DFDS and Stena Line both operate passenger ferries from Harwich to the continent, including the new Stena high-speed catamaran service to the Hook of Holland. Harwich is also an increasingly used stopover for cruise liners. The Essex and Southend-on-Sea Replacement Structure Plan supports improved road and rail access, the provision of improved port facilities at Harwich International Port (within the existing site) and the future development of Bathside Bay.

Tourism and leisure are major contributors to the area's economy, in terms of direct expenditure from tourists and from the jobs created by the industry. An estimated 58,000 people in East Anglia are employed by hotels, recreational facilities and other tourism/recreation related jobs and 11% of all UK domestic holidays taken in 1998 were taken in East Anglia. Just under 1.5 million passengers pass through Harwich International Port each year. Harwich has been identified as a priority area for economic regeneration and coastal tourism in the Essex and Southend-on-Sea Replacement Structure Plan (1996-2011).

The Haven Gateway Initiative, a partnership of local authorities and private companies (many of whom are involved in this Management Scheme), was launched in 2001 to raise the profile of the area and to encourage further economic development. This includes increasing the ports' reputation, both nationally and internationally, as desirable destinations for shipping, and encouraging 'new industries' into the area to provide jobs and bolster the economy. This Management Scheme has been written at the same time as the launch of the Haven Gateway Initiative and consultation has taken place to try to ensure that the aims of both do not conflict.





3 PROTECTION OF THE STOUR AND ORWELL ESTUARIES

(a) The Birds Directive

The Birds Directive (EU Council Directive 79/409/EEC) was introduced to protect all naturally occurring wild birds and their habitats in the European Union. Some species in particular are subject to special conservation measures under the Directive, protecting their habitats in order to ensure successful reproduction and survival. The required conservation measures must also take account of migratory species. To help achieve these aims, member states must establish Special Protection Areas (SPAs) where appropriate.

Special Protection Areas are classified for the conservation of:

- Internationally important populations of species listed under Annex I of the Directive

and/or

- Internationally important populations of regularly occurring migratory species listed in the Birds Directive.

In the UK, sites are selected using the Selection Guidelines for Special Protection Areas (JNCC, 1999), typically under one or more of three guidelines:

- Area used regularly by 1% or more of the Great Britain population of a species listed in Annex I in any season.
- Area used regularly by 1% or more of the biogeographical population of a regularly occurring migratory species (not listed in Annex I) in any season.
- Area used regularly by over 20,000 waterfowl or 20,000 sea birds in any season.

Sites chosen contain habitats necessary for the species' survival and reproduction in their area of distribution, including breeding, moulting and wintering areas and staging posts along migratory routes.

(b) Designation of the Stour and Orwell estuaries

A large part of the Stour and Orwell estuaries has been classified as a Special Protection Area (SPA), in order to protect those species listed in Section 4 (a) (i). It should be noted that at the time of going to press, English Nature were undertaking a review of the SSSI and SPA boundary, which may result in changes to the area of the Stour and Orwell Estuaries SPA.

(c) The Habitats Regulations

The EU Birds Directive, together with the EU Habitats Directive, (92/43/EEC) were transposed into UK law as the UK Conservation (Natural Habitats &c.) Regulations 1994 (known simply as 'the Habitats Regulations'). The UK was thus able to fulfil the requirements of the Directives, nominating appropriate sites and providing the legal framework with which to protect them.

Most UK sites were based on Sites of Special Scientific Interest (SSSIs), notified as a result of the Wildlife and Countryside Act 1981. SSSIs had often been notified for the same or very similar reasons to those specified in the Birds and Habitats Directives. There was already some protection in place for SSSIs and on land this served well to ensure that the requirements of the Directives were met. However, the situation became slightly more complicated for sites with a marine or intertidal area, as discussed in the next section.

(d) European Marine Sites

Where a Special Protection Area includes an intertidal or marine area, it is termed a European Marine Site. These are treated slightly differently to wholly terrestrial SPAs. Both are usually notified as SSSIs, but the protection of marine and intertidal areas afforded by the SSSI status was not considered to be sufficient to safeguard the interests identified in the Birds and Habitats Directives. This is because the notification did not extend below the Mean Low Water Mark in most cases.

The many demands made on a marine or coastal environment arising from its 3-dimensional nature (with issues relating to ownership and sectoral interests regarding the seabed, water column and water surface needing to be considered) led to a new form of management regime being proposed for European Marine Sites; a Management Scheme.

The Habitats Regulations enable Management Schemes to be established for European Marine Sites in order to deliver the requirements of Article 6(1) and 6(2) of the Habitats Directive and to give effect to their statutory duty under Regulation 3(3). Regulation 34(2) states that "only one management scheme may be made for each European Marine Site." It was felt that the best way for relevant authorities on the Stour and Orwell estuaries to discharge their management responsibilities was through a Management Scheme.

(e) Relevant Authorities

The Habitats Regulations use the terms 'relevant' and 'competent' authorities to describe the statutory bodies to which the Regulations apply.

A **competent authority** includes any statutory body or public office exercising legislative powers, whether on land or sea.

Relevant authorities are those competent authorities which have powers or functions which have, or could have, an impact within or adjacent to a European Marine Site.

For the Stour and Orwell Estuaries European Marine Site, the Relevant Authorities are:

- Associated British Ports (Ipswich)
- Babergh District Council
- Eastern Sea Fisheries Joint Committee
- English Nature
- The Environment Agency
- Essex County Council
- Harwich Haven Authority
- Harwich International Port
- Ipswich Borough Council
- The Port of Felixstowe
- Suffolk Coastal District Council
- Suffolk County Council
- Tendring District Council

For more information about the roles and jurisdiction of each of these Relevant Authorities, please refer to Appendix I.





The Crown Estate, although technically a Competent Authority, but not a Relevant Authority, has also had input into the construction of this Management Scheme, as has Anglian Water.

Associated British Ports, Harwich Haven Authority, Harwich International Port and the Port of Felixstowe are Statutory Harbour Authorities for the Stour and Orwell, as defined under the Harbours Act 1964. As such, they qualify as Relevant Authorities for the Stour & Orwell European Marine Site under the terms of the Conservation (Natural Habitats &c.) Regulations 1994. Although each organisation is separate, they share a broadly common legislative framework, with their responsibilities set out clearly in a succession of Parliamentary Acts relating both to their own particular operations and to the UK ports industry in general. While their policy and management approaches may differ, as Relevant Authorities, their responsibility towards the European Marine Site is the same. It is understood that all Relevant Authorities, including Harbour Authorities, are required to discharge their functions so as to secure compliance with the requirements of the Directive.

All the Relevant Authorities that have participated in the development of this Management Scheme recognise and understand that they can do no more than act within their existing powers. As a result, it will be up to each organisation to take responsibility for those areas over which they have statutory duties and powers and to deliver plans for the management of operations and activities within their own areas of jurisdiction.

(f) Consultation with stakeholders

The Relevant Authorities have full control over the contents of the Management Scheme. However, there has been a Stour and Orwell Estuaries Management Group in place since 1995, of which most of the Relevant Authorities are already part, along with NGOs (such as RSPB and local Wildlife Trusts) and user groups (such as the Royal Yachting Association). This Estuaries Management Group also holds an annual Forum, open to all members of the public with an interest in the estuaries. This allows public discussion of issues concerning the estuaries and promotes understanding. The Forum in June 2002 was the vehicle on which this Management Scheme was launched for public consultation.

Full Estuary Management Group meetings have been held as part of the process of writing this Management Scheme, to enable the Relevant Authorities to gain useful information about some activities and research. In addition, members of the Relevant Authorities group have held smaller meetings with specific stakeholder groups, which have either met just once, or are regularly meeting advisory groups, to discuss certain activities in more detail (e.g. wildfowling, baitdigging, water-sports etc.). This Management Scheme underwent a public consultation process in July 2002, seeking the views of local people regarding its contents.

4 REGULATION 33 ADVICE

Once a site has been classified as a Special Protection Area, Regulation 33 of the Habitats Regulations requires that English Nature advises other Relevant Authorities as to the conservation objectives for the site, and the types of activities that may adversely affect it. The resulting document, known as the 'Regulation 33 advice package', is the basis upon which the Management Scheme is written.

English Nature published their Regulation 33 advice for the Stour and Orwell estuaries in January 2001. It is summarised here, but a full copy can be obtained from the Suffolk office of English Nature.

(a) Site features

The Stour & Orwell Estuaries SPA supports one regularly occurring Annex I species and a number of internationally important populations of regularly occurring migratory species.

(a) i Populations of bird species (qualifying under the Birds Directive and using the Stour and Orwell Estuaries European Marine Site at the time of SPA classification)

Table 1 Internationally important population of regularly occurring Annex I species.

Species	Population in SPA (5 year peak mean for 1986/7-1990/1)*	% of GB population
Golden Plover (<i>Pluvialis apricaria</i>)		>1%

Table 2 Internationally important populations of regularly occurring migratory bird species.

Species	Population in SPA (5 year peak mean for 1986/7-1990/1)*	% of GB population
Dark-bellied Brent Goose (<i>Branta bernicla bernicla</i>)	2,640	>2%
Shelduck (<i>Tadorna tadorna</i>)	2,670	>3%
Ringed Plover (<i>Charadrius hiaticula</i>)	700	3%
Grey Plover (<i>Pluvialis squatarola</i>)	2,170	>10%
Dunlin (<i>Calidris alpina</i>)	23,760	>5%
Black-tailed Godwit (<i>Limosa limosa</i>)	1,610	>33%
Redshank (<i>Tringa totanus</i>)	2,520	>3%
Turnstone (<i>Arenaria interpres</i>)	880	>1%

* Data from SPA citation (October 1992) held on Register of European Sites for Great Britain.

These bird species for which the site was classified are known as the 'features' of the European Marine Site. The habitats on which they depend (for nesting or roosting sites, or because they support the birds' food species), are known as the 'sub-features' of the site.

Further information about each of the bird species listed above can be found in Appendix IV.

As well as the Annex I and internationally important migratory species listed above, the site also supports nationally important wintering numbers of Mute Swan (*Cygnus olor*), Wigeon (*Anas penelope*), Pintail (*Anas acuta*), Scaup (*Aythya marila*), Goldeneye (*Bucephala clangula*), Knot (*Calidris canutus*) and Curlew (*Numenius arquata*).

(b) Site sub-features

The sub-features are (for both Annex I & Annex II species) intertidal mudflats and saltmarshes.

(c) Conservation objectives for the Site

The conservation objective for the internationally important populations of the regularly occurring Annex I species:

Subject to natural change, maintain in favourable condition the habitats for the internationally important populations of regularly occurring Annex I bird species, under the Birds Directive, in particular:

- Intertidal mudflat
- Saltmarsh

The conservation objectives for the internationally important populations of regularly occurring migratory bird species:

Subject to natural change, maintain in favourable condition the habitats for the internationally important populations of regularly occurring migratory bird species, under the Birds Directive, in particular:

- Intertidal mudflat
- Saltmarsh

NOTE: These SPA conservation objectives focus on habitat condition, in recognition that bird populations may change as a reflection of national or international trends or events. Annual counts for qualifying species will be used by English Nature, in the context of 5-year peak means, together with available information on UK population and distribution trends, to assess whether this SPA is continuing to make an appropriate contribution to the Favourable Conservation Status of the species across Europe.





(d) Maintaining favourable condition

The Regulation 33 advice package from English Nature considers a range of generic impacts that could affect the favourable condition of the estuaries. These impacts are also ranked in terms of sensitivity of the interest features. This is a summary of the impacts that are potentially damaging to the interest features and sub-features of the Stour and Orwell European Marine Site.

Table 3 Summary of operations which may cause deterioration or disturbance to the Stour & Orwell Estuary European Marine Site interest features (based on levels of use in July '00).

	Standard list of categories of operation which may cause deterioration or disturbance	Internationally important populations of regularly occurring Annex 1 birds (i.e. Golden Plover)	Internationally important populations of reg. occurring migratory species
Physical loss	Removal (e.g. harvesting, coastal development) Smothering (e.g. by artificial structures, disposal of dredge spoil).	✓ ✓	✓ ✓
Physical damage	Siltation (e.g. through run-off, dredging, outfalls etc.) Abrasion (e.g. boating, anchoring, trampling) Selective extraction (e.g. aggregate dredging).	✓ ✓	✓ ✓ ✓
Non-physical disturbance	Noise (e.g. boat activity) Visual (e.g. recreational activity)	✓ ✓	✓ ✓
Toxic contamination	Introduction of synthetic compounds (e.g. pesticides, TBT, PCBs). Introduction of non-synthetic compounds (e.g. heavy metals, hydrocarbons). Introduction of radionuclides		
Non-toxic contamination	Changes in nutrient loading (e.g. agricultural run-off, outfalls) Changes in organic loading (e.g. mariculture, outfalls) Changes in thermal regime (e.g. power stations) Changes in turbidity (e.g. run-off, dredging) Changes in salinity (e.g. water abstraction, outfalls).	✓ ✓	✓ ✓ ✓
Biological disturbance	Introduction of microbial pathogens Introduction of non-native species and translocation Selective extraction of species (e.g. bait digging, wildfowling, fishing).	✓	✓

This table has been extracted from the Regulation 33 advice for the Stour and Orwell estuaries (available from English Nature Suffolk office). It is not a list of prohibited activities, but a general checklist for discussion amongst the Relevant Authorities. The operations indicated with a tick may require new or further management measures to be put in place – the features to which the tick applies are considered to be highly or moderately vulnerable to the effects of the operations. Examples of activities under Relevant Authority jurisdiction have also been provided.

5 PLANS AND PROJECTS

This Management Scheme can only deal with managing activities currently taking place on the estuaries. A new activity, whether intended to be a one-off, or ongoing, proposed on or near or anywhere where it could affect the European Marine Site could potentially qualify as a 'plan or project' under Regulation 48 of the Habitats Regulations. Any activity or proposal requiring a licence, permission, consent or authorisation from a competent authority would qualify as a 'plan or project' if it would occur in or near the European Marine Site.

Examples:

- Port extension
- Road building
- New houses
- Capital dredging proposals
- Extension of marinas
- Laying of utility cables/pipes

Relevant Authorities (and any other appropriate Competent Authorities) have specific statutory duties to determine applications for certain plans or projects falling within their jurisdiction and often have to work together when a plan or project requires multiple consent from more than one Relevant Authority. This following section briefly outlines the procedure required to deal with plans and projects. Further information can be found in Planning Policy Guidance 9 (PPG9), available from the Office of the Deputy Prime Minister.

1. The Relevant Authority makes an initial consideration (in consultation with English Nature) on the likelihood of a 'significant effect' occurring on the European Marine Site, considering other plans and projects and activities on the site and possible cumulative effects.
2. If a significant effect is likely to occur, then an 'Appropriate Assessment' must be undertaken to establish whether or not the plan or project will have an adverse effect on the integrity of the site, before any decisions are made regarding progression. This will be carried out by the Competent Authority, but the developer must supply information as required, and English Nature must be consulted throughout the process. Public consultation may also be appropriate. Further details about carrying out Appropriate Assessments can be found in PPG9, or are available from the English Nature offices for Suffolk (in Bury St. Edmunds) and Essex (in Colchester). The scope and content of an Appropriate Assessment will depend on the location, size and significance of the proposed plan or project and this will be advised on by English Nature. An Environmental Impact Assessment (as required by the EIA Directive) may be sufficient, or a different kind of assessment may be needed.
3. Following completion of the Appropriate Assessment, it will then be determined whether or not the plan or project can go ahead. If it can be ascertained that there will be no adverse impact then the plan or project can proceed. However, if the Appropriate Assessment indicates a potential adverse effect, the Competent/Relevant Authority must look at alternative solutions which could remove or reduce the possibility of damage to the site. A plan or project may be allowed to go ahead in the case of overriding public interest (determined by the Secretary of State), in which case compensation would be necessary.





6 SUMMARY OF ACTIVITIES TAKING PLACE ON THE EUROPEAN MARINE SITE AND THEIR MANAGEMENT



The range of activities taking place on the Stour and Orwell estuaries is very large indeed and they have been broken down into broad categories, as follows:

- (a) Water inputs and quality
- (b) Land-based recreation
- (c) Inshore/recreational fishing activities
- (d) Water-based recreation
- (e) Commercial fishing
- (f) Ports and shipping activities
- (g) Military aviation activity
- (h) Coastal defence
- (i) Houseboats and beach huts



These categories reflect the range of activities known by the Relevant Authorities to be taking place at present, adjacent to or on the European Marine Site. However, this list could be changed in future reviews in order to take account of new activities, if they arise.

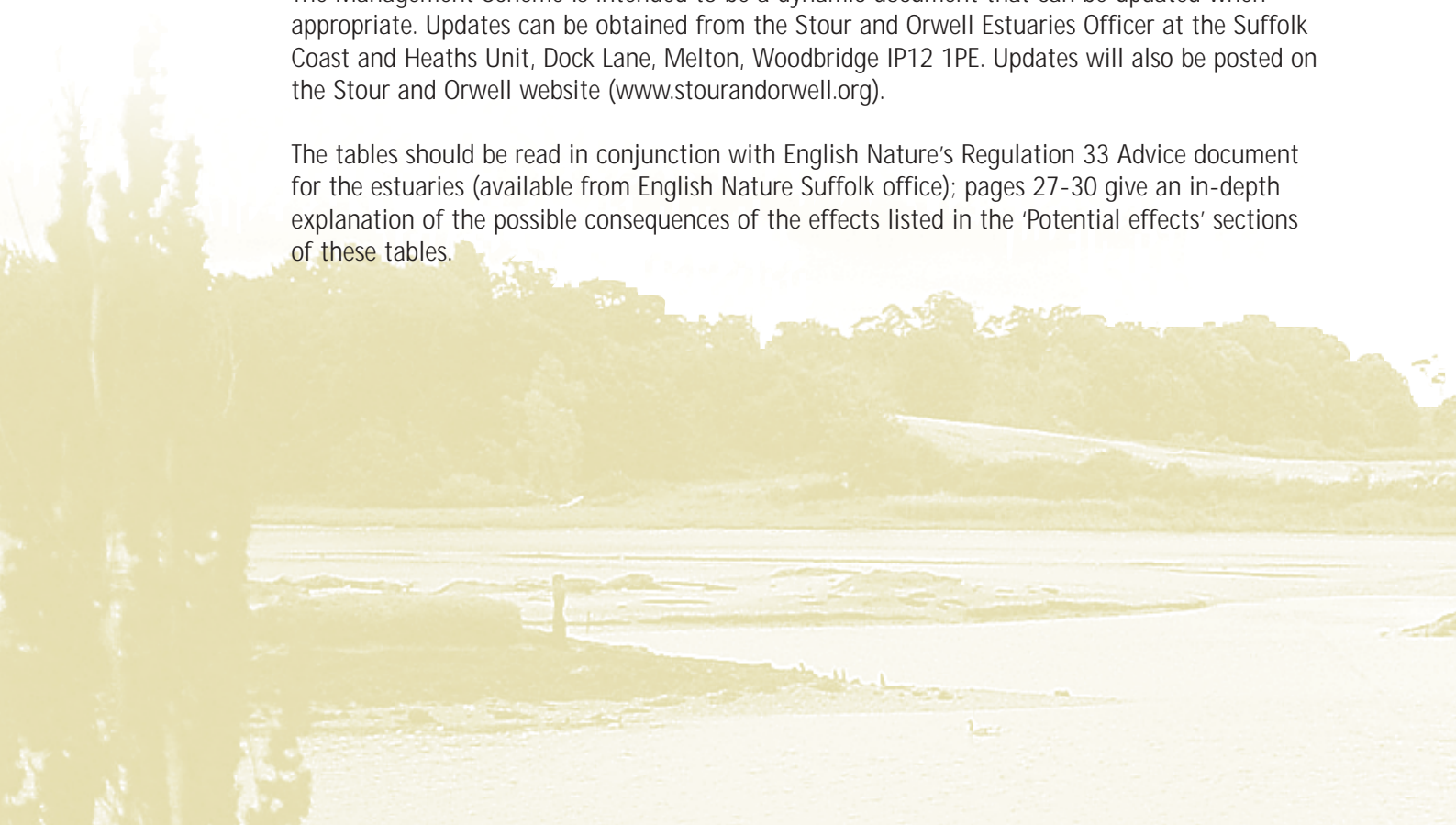
For each activity group, consideration is made of individual activities and their current management, together with an assessment of any gaps in the management or in the knowledge about the activity's effect on the Site.

Please note that a large number of the entries in the 'Research Undertaken' sections of these tables should refer to a website which specifically brings together research on impacts on European Marine Sites. To avoid repetition, it has been omitted from the tables. The website is www.ukmarinesac.org and the reader is advised to visit this website if further information is required about a particular activity's effects.

These tables have been completed to the best of the Relevant Authorities' knowledge at the time of going to press. For information about how the Management Scheme will be kept up to date and how we will ensure the actions are carried out, please refer to section 8 (Compliance Monitoring).

The Management Scheme is intended to be a dynamic document that can be updated when appropriate. Updates can be obtained from the Stour and Orwell Estuaries Officer at the Suffolk Coast and Heaths Unit, Dock Lane, Melton, Woodbridge IP12 1PE. Updates will also be posted on the Stour and Orwell website (www.stourandorwell.org).

The tables should be read in conjunction with English Nature's Regulation 33 Advice document for the estuaries (available from English Nature Suffolk office); pages 27-30 give an in-depth explanation of the possible consequences of the effects listed in the 'Potential effects' sections of these tables.




	Relevant Authorities for this activity	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Those Relevant Authorities with powers to directly control the activity locally.	Any other Competent Authority (incl. Relevant Authorities) who can influence management of this activity but not directly manage it locally.	Any other organisations who may be able to influence management of this activity.
Location	This describes, to the best of the Relevant Authorities' knowledge and as specifically as possible, areas in or adjacent to the European Marine Site where this activity is known to occur.		
Frequency	The number of times per year the activity takes place, or general times of the year when it occurs.		
Potential effects with regards to Reg. 33 advice	All potential effects of the activity, whether theoretical or proven, drawn up using Table 3 of the Regulation 33 advice for guidance (which is also on page 8 of this Management Scheme).		
Research undertaken	Useful research undertaken nationally or locally, which has helped the Relevant Authorities understand the management requirements of this activity. Results of each study are summarised where possible, but if the results are too complex to explain here, a reference is given to direct the reader to the appropriate publication.		
Research required	If the Relevant Authorities feel that they need more information about this particular activity, the requirements are outlined here. Like the 'gaps in management' box, this then feeds into 'New actions required', resulting in a new action with an appropriate timescale and lead authority.		
Ongoing management	ACTION POINT: Outline of all Relevant Authorities' current management of this activity, which must continue into the future unless good reason can be given for changing this management. At each annual review, Relevant Authorities will be required to give an update on how these ongoing management measures are working and whether any changes are needed. There are usually no timescales for actions outlined in this box, as it is assumed that they are ongoing and will be done continually.		
Gaps in management	If the Relevant Authorities feel that the activity could still impact on the European Marine Site, in spite of the above ongoing management measures, the reason for this must be clearly stated here. Likewise, it is also clearly stated when the Relevant Authorities feel that current management of this activity is sufficient and are therefore not proposing any new management actions.		
New actions required	Relevant authority to implement new actions	Timescale	
ACTION POINT: If research is required, or if gaps in management have been identified by the Relevant Authorities, then these gaps will be filled by the introduction of new measures which are described in this box. These management or research measures, if deemed successful and intended to be used continually after the first annual review, may then be moved to the 'Ongoing Management' box.		The Relevant Authority(s) with overall responsibility for ensuring the new action is done – they may enlist the help of other Relevant Authorities to do so.	
		Dates often refer to September (when the annual review takes place). All new actions will be reviewed at the annual September meeting.	



6 (a) WATER INPUTS AND QUALITY


Although not heavily industrialised or populated like some other estuaries in the UK, there are a number of discharges into the estuarine waters of the Stour and Orwell. With designated bathing beaches just outside the estuaries (at Felixstowe and Dovercourt) it is important to the Environment Agency and water companies that good water quality is achieved within the estuaries, especially as this will have a positive impact on the whole of the European Marine Site.

All discharges are heavily regulated in the estuaries and are monitored by the Environment Agency, who also respond to reports of pollution incidents and can co-ordinate clean-up campaigns. The message that the 'polluter pays' is key and the Agency will prosecute the polluter. In 1999, the Environment Agency nationally responded to 36,623 reports of environmental pollution, resulting in 113 cautions being issued and a total of £1.1 million recovered in costs.



Farming is an important industry around the estuaries and one which can contribute to 'diffuse pollution' (i.e. pollution which does not arise from point sources). Diffuse pollution includes agricultural run-off, which is more prevalent during periods of heavy rain and carries bacteria, fuels, fertilisers, pesticides and herbicides into the estuaries. Nutrient input (from fertilisers) can disrupt algal growth, which has knock-on effects on the whole ecosystem. It can increase invertebrate numbers, which can have a positive effect on bird populations, but it can also cause the growth of algal mats on the intertidal, which restrict food availability. Pesticides and herbicides can deplete the birds' food supplies and directly affect the birds themselves when toxic compounds have been used, particularly as a result of bioaccumulation.

Another aspect of water quality is the process of 'Review of Consents' - as part of the Habitats Regulations' requirements, the Environment Agency is currently going through the process of reviewing all existing discharge consents in light of the designation of the European Marine Site.

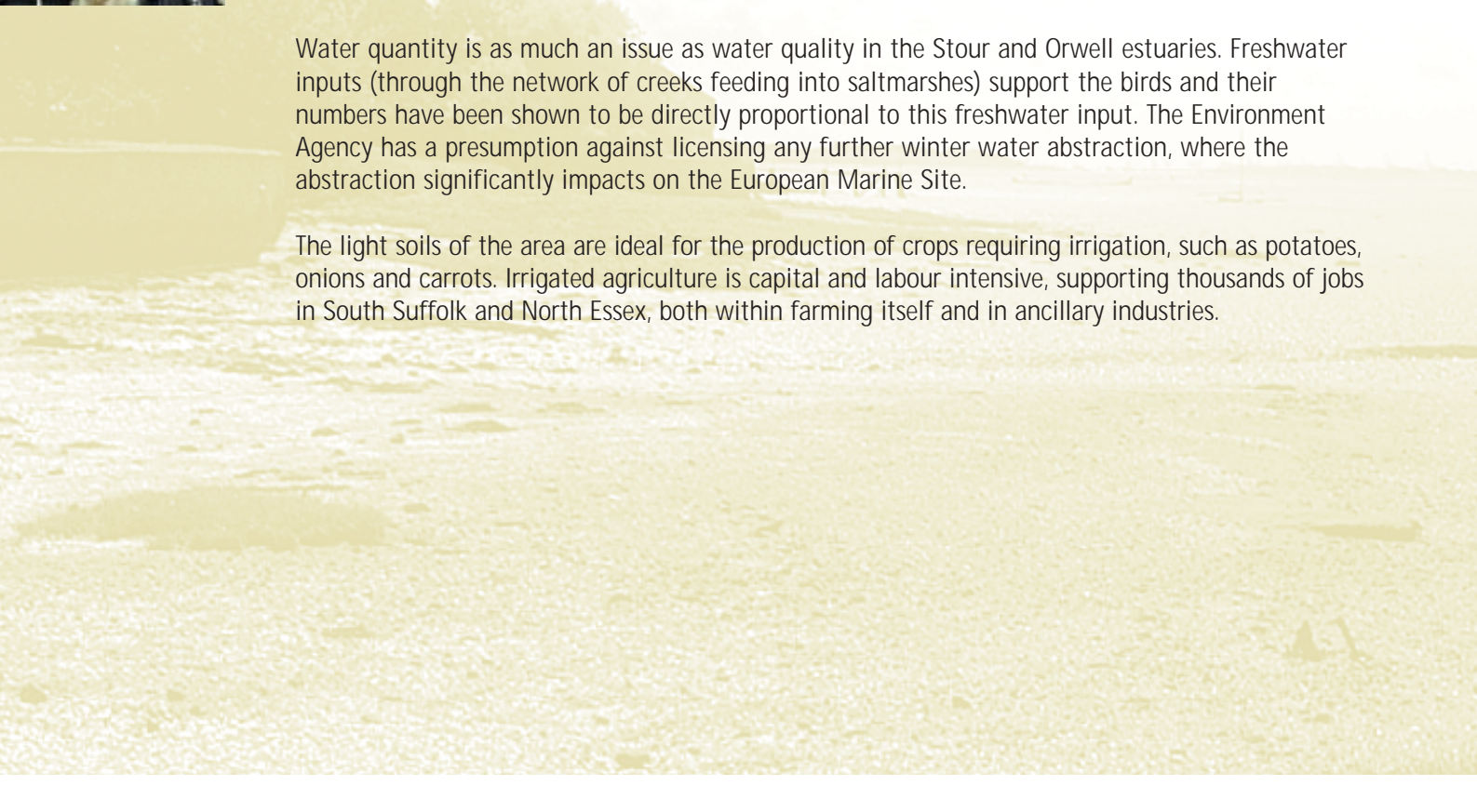


Oil spills are a potentially serious threat to the European Marine Site, given the numbers of ships entering the estuaries each day. However, there are strong local plans in place which would be implemented in the event of an oil spill, which would help to safeguard as much as possible against damage.

To aid guidance on assessing the impacts of water quality on European Marine Sites, a technical manual designed to give an idea of the chemical properties of toxic and non-toxic chemicals, their fate and behaviour in the marine environment and their potential effects can be found at www.ukmarinesac.org.

Water quantity is as much an issue as water quality in the Stour and Orwell estuaries. Freshwater inputs (through the network of creeks feeding into saltmarshes) support the birds and their numbers have been shown to be directly proportional to this freshwater input. The Environment Agency has a presumption against licensing any further winter water abstraction, where the abstraction significantly impacts on the European Marine Site.

The light soils of the area are ideal for the production of crops requiring irrigation, such as potatoes, onions and carrots. Irrigated agriculture is capital and labour intensive, supporting thousands of jobs in South Suffolk and North Essex, both within farming itself and in ancillary industries.



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity		DEFRA (Rural Development Services).	Private landowners.
Location	A large proportion of the area of both estuaries is flanked by agricultural land.		
Frequency	All year round, more of a problem during prolonged or heavy rainfall.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Non-toxic contamination through siltation and excessive nutrification from organic matter • Toxic contamination from agricultural chemicals (such as fertilisers), oils, diesels etc., which can enter the food chain and may potentially affect saltmarsh vegetation composition. The growth of Enteromorpha mats can constitute a serious problem on many estuaries. • High possibility of pesticides entering estuaries via this route • Potential for biological disturbance from microbial pathogens • Birds and mudflats are thought to be moderately sensitive to nutrient changes 		
Research undertaken	<p>The Environment Agency samples freshwater monthly around the estuaries, to test various quality parameters. They also sample estuarine waters at outfalls, which enables monitoring of nutrient levels, biological oxygen demand, dissolved oxygen etc. Herbicide run-off has been shown to cause stress to the Stour's saltmarsh plants, which may account for losses in recent decades (Mason et al., 2003).</p> <p>Draft hydro-ecological reviews of selected European Sites within the Agency's Anglian Region have been done for the Stour (Dec. 2001) and the Orwell (Feb. 2002) – these will inform the Review of Consents for the Environment Agency.</p>		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • Farms in the Suffolk River Valleys and Essex Coast Environmentally Sensitive Areas (ESAs) can be paid for certain management schemes, including fertiliser and herbicide usage restrictions (amongst other things). This scheme is operated by DEFRA, but only includes some farms around the Orwell and on the south side of the Stour. • Most farmers abide by a Code of Good Agricultural Practice (produced by DEFRA). • The Environment Agency is working hard with DEFRA and the agricultural industry to reduce diffuse pollution and a framework is being produced for Environment Management Schemes for farmers, which will increase awareness and justify farmers' actions. 		
Gaps in management	<ul style="list-style-type: none"> • All farms are regulated to some extent, but only farms participating in the Environmentally Sensitive Area schemes are subject to more stringent requirements. • Only some of the land around the estuaries is included in the Environmentally Sensitive Area schemes. • There is no Relevant Authority able to directly control agricultural diffuse pollution. 		
New actions required	Relevant authority to implement new actions	Timescale	
A1 Determine lead authority for influencing farming practices.	Environment Agency	By Sept. 2003	
A2 Encourage participation in agri-environment schemes. 95% of farms in Environmentally Sensitive Area to be signed up to schemes by 2004/5.	Environment Agency to ask DEFRA	To have begun by Sept. 2003	
A3 Inform farmers as to good agricultural practice, distribute new booklet on good farming practice to farmers, organise seminar and enforce agricultural regulations.	Environment Agency	Sept. 2003	
A4 Management Group to talk with DEFRA regarding possibility of review of ESA boundaries.	Environment Agency to organise	Sept. 2003	
A5 Environment Agency to review how Water Framework Directive and Nitrates Directive may affect regulation of diffuse pollution (and if Nitrates Directive will cover Stour/Orwell).	Environment Agency	As soon as information is available	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Environment Agency.		
Location	Freshwater abstraction takes place at various creeks around the estuaries, including Levington Creek, Freston Brook, Pin Mill etc.		
Frequency	All year round.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Non-toxic contamination through changes in salinity, nutrient levels and turbidity – these changes can have complex ecosystem effects, which may result in changes to the birds' prey. Freshwater flows have been found to be a highly important influence on bird numbers (see below) but it is not known why. It has been suggested that water abstraction affects species composition of the freshwater transition communities on the upper marshes, making it a highly important influence on bird numbers. 		
Research undertaken	<p>Environment Agency has commissioned extensive research into the importance of freshwater inputs into the SPA (Ravenscroft, N., 1999.). Findings indicate that the number of birds is directly proportional to the amount of freshwater input. Thus, freshwater abstraction can have significant impacts on the features of the European Marine Site.</p> <p>Draft hydro-ecological reviews of selected European Sites within the Agency's Anglian Region have been done for the Stour (Dec. 2001) and the Orwell (Feb. 2002) – these will inform the Review of Consents for the Environment Agency.</p>		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Anyone wishing to abstract water must hold a licence issued by the Environment Agency. Abstraction licences contain restrictive conditions designed to protect the environment. Existing licence holders around the estuaries are currently allowed to irrigate directly from the rivers. No new summer surface water licences will be issued. Drought Orders can restrict water extraction when issued, but most farmers operate within a voluntary agreement amongst themselves to share out limited water. The Environment Agency has started a Review of Existing Consents (under Reg. 50 of Habitats Regulations) and this will be completed by 2010. There is a presumption against permitting abstraction for winter storage reservoirs, where the amount of water needed to fill the reservoir would impact on the SPA. 		
Gaps in management	None – Relevant Authority considers current management to be sufficient.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Suffolk County Council. Essex County Council. Ipswich Borough Council. All ports.	Environment Agency (monitor water quality).	
Location	Ipswich Port area associated with drainage outfalls Any other hard paved road ways including public highways		
Frequency	Occasional. More frequent when heavy rainfall follows a period of dry weather. (Dry weather reduces the water levels in the gulleys, potentially allowing the floating oil to be low enough to reach the level of the outlet pipe. Turbidity within the gulley as a result of heavy rainfall could then cause some oil to flow through the outlet pipe. Similarly, water level changes and turbidity could allow heavier contaminants collecting at the bottom of the gulley to flow through the outlet pipe.)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Toxic contamination from agricultural chemicals, oils, diesels etc. Toxins can enter the birds directly, or through bioaccumulation. Golden Plover are known to be sensitive to bio-accumulative effects. Toxic contamination can also reduce food palatability and availability. • Turbidity and habitat smothering may occur close to outlets. 		
Research undertaken	ABP Ipswich monitor in Ipswich Port area Oil and other contaminant presence in water is monitored by the Environment Agency.		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • Trapped gulleys intercept most fuel, oil and heavier contaminants running off from the roads. The gulleys are cleaned out every eight months, more frequently in the Port of Ipswich. • If the Environment Agency found oil and other contaminants in water samples, which were thought to be coming from road run-off, then they would look at ways of mitigating against it. • The Port of Felixstowe controls storm water discharges via penstock valves, which can be closed off in the event of a major spillage in the Trinity port area. 		
Gaps in management	None – the Relevant Authorities consider current management to be sufficient.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Environment Agency.		
Location	Various locations within the estuaries. There are 6 trade effluent discharges into the estuaries.		
Frequency	Continuous		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Toxic contamination through synthetic and non-synthetic compounds (dependent on discharge), which can affect the birds in various ways [see sheet (a) iii] and could also affect the saltmarsh vegetation composition. • Golden Plover are known to be sensitive to bio-accumulative effects from toxic contamination • Non-toxic contamination (type dependent on discharge) • Changes in salinity near outfalls (can affect invertebrate food species) 		
Research undertaken	Outfalls are monitored by the Environment Agency		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • Discharge consents are issued by the Environment Agency • Reed-bed filtration system used by ICI inkjet-paper plant at Manningtree • Contingency plans are in place for large incidents. • All industrial discharges are heavily regulated and are monitored by Environment Agency sampling (which takes place 1-50 times per year, depending on the volume of discharge being sampled) – this monitoring is to be continued. • The Environment Agency has started a Review of Existing Consents (under Reg. 50 of Habitats Regulations) and this will be completed by 2010. • The Environment Agency responds to reports of pollution incidents and can co-ordinate cleanups and prosecutes polluters to recover costs. 		
Gaps in management	None – industrial discharges are very strongly regulated and the Relevant Authority does not feel that there are any gaps in the management of this activity.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Environment Agency.	Anglian Water.	Private landowners.
Location	Various locations throughout estuaries.		
Frequency	Continuous, plus combined sewer overflows operate occasionally.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Toxic contamination from contaminants in sewage (particularly if sewage discharge contains industrial effluents) – effects already listed in previous tables • Non-toxic contamination through nutrient input, salinity changes, turbidity changes, organic inputs, changes in thermal regime – effects already listed in previous tables • Saltmarsh can be negatively affected by sewage pollution • Decrease in oxygen availability near outfalls could reduce prey availability for birds • Biological disturbance through possible introduction of microbial pathogens 		
Research undertaken	Environment Agency carries out routine outfall sampling (testing dissolved oxygen (DO), biochemical oxygen demand (BOD), nutrients, turbidity, salinity etc.).		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • The Environment Agency issues discharge consents, either as quantitative requirements (specifying BOD and DO standards) for big discharges, or qualitative requirements (description of type of outfall) for small discharges. • Discharges are subject to European Regulations (Bathing Water Directive, Urban Waste Water Treatment Directive). • Following the AMP3 process, all continuous sewage discharges will be required to have had secondary treatment installed by March 2005 (Shotley is the only Anglian Water discharge outstanding). • The Environment Agency monitor all discharges by sampling them (frequency between 1 and 50 times per year, depending on volume of discharge) – this monitoring is to be continued. • Intermittent discharges critical to Dovercourt bathing waters are monitored by Anglian Water (9 to Stour, 1 to Orwell). • The Environment Agency has started a Review of Existing Consents (under Reg. 50 of Habitats Regulations) and this will be completed by 2010. • The Environment Agency respond to pollution incidents and can co-ordinate cleanups and prosecute polluters to recover costs. 		
Gaps in management	Shotley sewage treatment works have not yet been upgraded in line with the AMP 3 programme.		
New actions required	Relevant authority to implement new actions	Timescale	
A6 Shotley Sewage Treatment Works to be upgraded.	Anglian Water.	March 2005	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority (HHA). Associated British Ports (ABP) Ipswich. Port of Felixstowe. English Nature. Environment Agency.	Harwich Navyard. Harwich International Port. Maritime & Coastguard Agency. Suffolk County Council and Essex County Council for emergency co-ordination.	Petrochemical Carless Ltd. refining.
Location	Incidents could occur throughout the estuary; small spills more likely on the berths, major spills from collisions in shipping channels. Tidal flow, wind and waves could transport material to all areas and foreshores.		
Frequency	Could occur at any time Minor incidents (tier1, and 'trace') currently approximately <10 per year Major incidents have not occurred, so insufficient data exists to predict.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Toxic contamination to the water and to inter-tidal areas (short term and long term) – see previous tables for consequences of this • Loss of food species in the mudflats (short term and long term) • Physical damage (oiling) to birds resulting in direct or indirect loss of life • Large oil spills can cause smothering of saltmarsh vegetation and loss of food species in the mudflats. 		
Research undertaken	Sediment analysis and water quality surveys carried out by Environment Agency Sediment analysis carried out for maintenance dredging disposal licences		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • Merchant Shipping (Oil Pollution Preparedness, Response and Co-ordination Convention) Regulations (1998) (known as OPRC) require all competent Authorities to produce Oil Spill Contingency Plans. The Haven Oil Working Group (HOWG) has produced a memorandum of understanding that provides for estuary-wide co-operation between the Port and Harbour authorities and other relevant agencies (Environment Agency, local authorities etc.). • Each port maintains equipment and personnel for a 'Tier 1' incident (small spill, size of which varies depending on circumstances, but could be up to 500 litres). • For larger Tier 2 spills (size depending on circumstances but up to 50m3), HOWG activates joint response to make available equipment and personnel of all members. HHA and ABP retain oil spill contractors (currently Oil Spill Response Ltd.) to meet requirements of OPRC, which is integrated with HOWG response. HHA also own a multi-purpose vessel with oil recovery capabilities. • An incident greater than this is a 'Tier 3' national incident, overseen by the Maritime and Coastguard Agency Counter Pollution Branch, who assist with equipment from national stockpile. • An independent Environment Advisory Group has been set up to advise HOWG when managing a cleanup operation in the area and plans will continue to be monitored and updated. • Exercises are undertaken on a regular basis for personnel, incident management, and deployment of equipment, in particular to test sites chosen for booms. 		
Gaps in management	Existing contingency plans need to be integrated with this Management Scheme.		
New actions required	Relevant authority to implement new actions	Timescale	
A7 Ensure contingency plan and Management Scheme are integrated.	English Nature.	Ongoing (through Environment Advisory Group meetings).	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity		Environment Agency. DEFRA.	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. CEFAS (monitor dredging). Marina operators and yacht clubs.
Location			
Frequency	Continual, and related to the number of boats in the estuaries.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Copper contamination – most boats in the estuaries are small (boats less than 25m in length are not allowed to use tributyltin (TBT)-based antifoulants, so use copper-based instead). TBT contamination from boats over 25m – can affect food availability by causing molluscan imposex, and can accumulate through the food chain. 		
Research undertaken	The Environment Agency has discovered elevated levels of copper in the estuaries.		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Most boats in the estuaries are under 25m long and therefore subject to the European ban on TBT-based antifouling paints. The Environment Agency routinely monitors for 'dangerous substances' in the estuaries, as part of the EU Dangerous Substances Directive. The only anti-fouling paints available legally to small (less than 25m) boat owners do not contain TBT and most are well aware of legal and acceptable forms of antifouling Port maintenance dredging disposal applications are tested by CEFAS for TBT and metals. In January 2008, a barrier will be needed on big ships to prevent TBT leaching. The Environment Agency maintains a watching brief on this issue. 		
Gaps in management	<p>There is a potential for future changes to the types of anti-fouling paints that are permitted (as TBT may be phased out altogether), which could lead to an increase in copper-based paints being used.</p> <p>It is not known whether boat owners around the estuaries are fully aware of regulations regarding the use of anti-fouling paints.</p>		
New actions required	Relevant authority to implement new actions	Timescale	
A8 If regulations change regarding use of TBT (which could lead to an increase in use of copper-based anti-foulants), assess results of monitoring and future monitoring requirements.	Environment Agency.	Dependent on regulations, report every September to Relevant Authorities Group.	
A9 Ensure that list of treatments that comply with Control of Pollution Regs. (1987) and Control of Pesticides Regs. (1986), both issued by DEFRA, are available to boat owners.	Harwich Haven Authority.	Sept. 2003.	

6 (b) LAND-BASED RECREATION

The estuaries' recreational value is high and they are popular with local people and tourists. Through recreation, the public can glean a greater understanding of conservation issues and appreciate the demands on the estuaries.

Tourism is an important player in the local economy, with large numbers of visitors coming from abroad, particularly Holland, because of the passenger ferries operating from Harwich. Many visitors come from within the UK, especially London. The estuaries can be used as an important tool in persuading overseas visitors to stay in the area after getting off their ferries and in attracting UK holidaymakers who are looking for versatile and interesting destinations.

The Stour and Orwell Path follows most of the shore of the estuaries and links to 2 other Long-distance footpaths (the Essex Way and the Suffolk Coast and Heaths Path). Other recreational activities undertaken include angling, wildfowling, horse-riding, cycling, dog-walking and birdwatching.

There is some debate as to the impact of recreation on Special Protection Areas. It has been argued that the presence of people (and especially those with dogs or horses) can disrupt birds' feeding and draw on their energy reserves which should be stored up for migration and to help them get through the winter. However, the estuaries have been well used by walkers, anglers and wildfowlers for many years now and bird populations are still present in large numbers. There is also a link to development and land-loss around the estuaries, as the impact of disturbance can be somewhat lessened if the birds are able to fly to a site close by, where they can continue feeding.



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Essex County Council. Suffolk County Council. Ipswich Borough Council.		Suffolk Coast and Heaths Unit.
Location	All around estuaries – footpaths, foreshore, permissive paths.		
Frequency	All year round, more in summer.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance, to which water birds are considered highly sensitive. Trampling causing abrasion, if workers venture onto mudflats and saltmarsh – these habitats are considered to be sensitive to trampling. 		
Research undertaken			
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Essex County Council Rights of Way staff consult English Nature when it is believed that any works could affect the European Marine Site. Suffolk County Council consult their ecologists regarding their potential impacts on the European Marine Site. 		
Gaps in management	Ipswich Borough Council does not formally consult English Nature on this issue.		
New actions required	Relevant authority to implement new actions	Timescale	
B1 Ipswich Borough Council to follow Essex County Council's example, consulting English Nature about maintaining rights of way.	Ipswich Borough Council.	Sept. 2004.	

(B) II PUBLIC ACCESS TO, AND RECREATION AROUND, THE FORESHORE

Incl. hiking, walking, dog-walking, cycling, bathing, bird-watching, horse-riding and motor vehicle access

	Relevant authorities	Competent authorities	Other associated organisations
Authorities associated with activity	Essex County Council. Suffolk County Council. Babergh District Council. Ipswich Borough Council. Suffolk Coastal D. Council. Tendring District Council. English Nature.		RSPB. Suffolk Wildlife Trust. Suffolk Coast and Heaths Unit.
Location	All around estuaries – foreshore, footpaths & permissive paths. Visitors concentrated around rights of way and near access points. Access to the estuaries is difficult (because much of the land around the estuaries is privately owned) and limited to sites close to car parks, picnic sites, towns and villages. Bridleways from Nether Hall (Bradfield, TM 140 314) to Oakfield Wood Nature Reserve, Wrabness (TM 163 319) and also at Trimley. Suffolk C.C permit riding on Nacton Shore Vehicular access to foreshore sometimes occurs at Pin Mill and Bradfield.		
Frequency	Generally more activity in summer, although birdwatching can be more popular in winter.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance (people, horses, vehicles, dogs) Trampling causing abrasion (if people/vehicles/animals venture onto intertidal) Public access & dog fouling can affect saltmarsh directly through trampling and nitrification which reduces diversity in favour of ruderal species. Non-toxic contamination from litter Potential for major access points to concentrate visitors at certain sites on the estuaries which may intensify disturbance and contamination at these sites. 		
Research undertaken	<p>WeBS counts could act as indicators of recreation-based problems.</p> <p>Many national studies have looked at trampling and disturbance effects, both on saltmarsh and on birds (e.g. Davidson et al., 1993 and Riffell et al., 1996).</p> <p>RSPB have carried out local monitoring (O'Hara, 1994).</p> <p>Environment Agency surveys have, using WeBS methodology, examined overwintering populations (but for water abstraction reasons) (Ravenscroft, 1999.)</p> <p>Local conservation experts do not consider recreation to be causing problems on the Stour, but there are thought to be problems on certain parts of the Orwell.</p>		
Research required	Identify areas of potential conflict. Gain more detailed information of visitor usage. Review current research and apply knowledge to estuaries where applicable.		
Ongoing management	<ul style="list-style-type: none"> CRoW Act will allow authorities to manage public access more effectively The AONB Management Plan (Suffolk Coast & Heaths Unit, 2002) examines certain aspects of recreational management. Suffolk Wildlife Trust provide birdhides, which determine where most birdwatchers go within the Trimley Nature Reserve, and likewise the RSPB for Stour Wood. RSPB & the Wildlife Trusts educate birdwatchers about responsible birdwatching. CRoW Act amended Highways Act to make driving on SSSIs an offence. Motorbikes have been banned from Nacton foreshore. It is illegal to cycle on sea walls (unless they are bridleways) There is foot-only access to the shore at Orwell Country Park. 		
Gaps in management	Little management with regards to effects on European Marine Site. Public awareness of people's potential impacts on the site is not known.		
New actions required	Relevant authority to implement new actions	Timescale	
B2 Assess where access points and public rights of way coincide with important areas in terms of European Marine Site (feeding & roosting sites, intertidal areas).	B2 & B3: Suffolk & Essex County Councils (thro' Suffolk Coast & Heaths Unit) to assess access points & visitor numbers.	Sept. 2004	
B3 Survey visitor numbers and activities in relation to important bird areas over winter 2003/4 (coinciding with WeBS surveys).		Sept. 2004	
B4 Include information on conservation issues in the 'Guide to the Essex Way' and guides to the Tendring Circular Walks.	Essex County Council (Essex Way); Suffolk C.C. (thro' Suffolk Coast & Heaths Unit) (Tendring Circular Walks).	Sept. 2003	
B5 Encourage responsible birdwatching through liaison with RSPB & Wildlife Trusts.	Suffolk and Essex County Councils (through Suffolk Coast & Heaths Unit).	Sept. 2003	
B6 Assess vehicle foreshore access periodically – if cars/motorbikes begin to access shore via unauthorised points again, review current management measures.	All local authorities.	Ongoing, report every Sept.	
B7 Where appropriate, use the provisions of the CRoW Act to deter or prevent third party damage to the SSSI.	English Nature.	Ongoing, report every Sept.	

	Relevant authorities	Competent authorities	Other associated organisations
Authorities associated with activity	English Nature (give consent through approved management plans).	The Crown Estate (in the Stour). Ipswich Borough Council (in the Orwell).	BASC (British Association for Shooting and Conservation), affiliated clubs & individual shooting members.
Location	Various bays on both estuaries, including Holbrook Bay and Seafeld Bay. Occurs between the high and low watermark and saltmarsh under private ownership or Crown foreshore leases.		
Frequency	The legal quarry season runs from 1st September to 20th February (Wildlife and Countryside Act 1981 as amended). Frequency during the season depends on tides, weather and individual opportunity, subject to club rules.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance, to which water birds are considered highly sensitive Abrasion through trampling – saltmarsh and mudflats considered to be sensitive to this 		
Research undertaken	<p>A Review of Wildfowling commissioned by the Crown Estate through English Nature was undertaken in 2000 by the British Trust for Ornithology (BTO). The report studied the potential impacts of wildfowling on the Stour Estuary. From the available evidence there was no significant indication that the wildfowling was having a direct impact on the bird use of the Stour estuary as a whole (Musgrove et al., BTO 2000). However, over the study period, there was no change in wildfowling effort.</p> <p>Appropriate Assessments have been done for some other sites and research is also taking place nationally through English Nature.</p>		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Wildfowling clubs leasing from the Crown Estate and Ipswich Borough Council are affiliated to BASC. Ipswich Borough Council license clubs on the Orwell All Crown Estate sporting rights leases (i.e. on the Stour) are managed through plans approved by the Joint Group for Conservation and Wildfowling Over Tidal Land (JTG) (which includes BASC and English Nature) procedure. A lease is granted by the Crown Estate once the management plan has been approved. English Nature must review all wildfowling management plans as part of the Review of Consents process. New plans or projects undertaken by wildfowling clubs or others are subject to the necessary conditions of SSSI consent and review by English Nature under section 28 of the Wildlife & Countryside Act (1981) (as amended by the CRoW Act 2000) and assessments under the Habitats Regulations where appropriate. All clubs under Crown Estate leases are responsible for administering a wildfowling return to BASC annually to aid monitoring. This is supplied by BASC to English Nature and the Crown Estate (as members of the JTG) in confidence. 		
Gaps in management	<p>Clubs' management plans come up for renewal at different times and do not take into account the activities of other clubs around the estuaries. Replace this statement with: 'All Stour and Orwell club leases are due for renewal and review simultaneously from 2002.'</p> <p>Bag returns are a condition of the Crown Estate's lease for wildfowling clubs on the Stour, but Ipswich Borough Council licenses (for wildfowling on the Orwell) do not require bag returns to be done.</p> <p>Private sporting shooting interests in & around the estuaries are not subject to this mechanism of management. Ipswich Borough Council licences (for wildfowling on the Orwell) need to address the issue of wildfowl returns to be part of the lease agreement.</p>		
New actions required	Relevant authority to implement new actions	Timescale	
B8 All Stour and Orwell wildfowling clubs to meet at least annually to review with the BASC and English Nature and to address any issues that may arise. A summary of wildfowling activity will be produced to aid future liaison and strategic management for all parties.	English Nature (helped by Suffolk Coast & Heaths Unit) and BASC.	Sept. 2003	
B9 Orwell Wildfowling clubs to start doing bag returns, using standard forms as per JTG procedure, so that wildfowl return data from the Orwell and be directly comparable with data from the Stour.	English Nature assisted by Suffolk Coast & Heaths Unit. BASC to prepare summary of wildfowling in consultation with English Nature & Suffolk Coast & Heaths Unit.	Sept. 2003	

6 (c) INSHORE/RECREATIONAL FISHING ACTIVITIES

The Stour and Orwell estuaries offer sheltered fishing for anglers and are popular sites for collecting bait. The baitdiggers are attracted by the expanses of mudflats, which provide a plentiful supply of worms. Baitdigging has been going on for many years and collection for personal use is a common-law right, but there has been ongoing debate as to whether unlawful baitdiggers could be exerting an unsustainable pressure on some mudflats (through disturbance and removal of species). This is as yet unresolved, but an existing Baitdigging Group for the estuaries has been reconvened to examine this issue. There is also the issue of sediment mobilisation associated with baitdigging, particularly when holes are not 'backfilled' by baitdiggers. This can contribute to sediment loss, particularly in areas lower down the estuaries where sediment is naturally lost anyway, and can also re-release pollutants which have been 'locked' into the sediment.

Summaries of existing research concerning the effects of all aspects of recreational fishing activities can be found at www.ukmarinesac.org

The Management Group has considered the possibility that hand-picking of shellfish could start to happen around the European Marine Site, but it is not thought to be occurring at present. However, by considering it for the Management Scheme, we are equipped to manage it better, should it become an issue before the next update.



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity		Eastern Sea Fisheries Joint Committee.	
Location	Not known to be occurring at present		
Frequency	Not known to be occurring at present, but would be seasonal depending on species.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance to feeding/roosting birds Abrasion through trampling Non-toxic contamination through litter Biological disturbance through removal of species, possibly resulting in reduced food availability for birds through complex ecosystem effects. 		
Research undertaken	A review of the effects of recreational interactions and the effects of fishing within UK European Marine Sites can be found at www.ukmarinesac.org		
Research required	None identified		
Ongoing management	Eastern Sea Fisheries Joint Committee maintain a watching brief to determine if activity ever takes place.		
Gaps in management	None - does not take place in the estuaries at the moment (Eastern Sea Fisheries Joint Committee would regulate hand gathering if it were to take place).		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	English Nature.	Ipswich Borough Council (own foreshore in Orwell). The Crown Estate (own foreshore in Stour).	Suffolk Coast and Heaths Unit.
Location	Nacton, Wrabness, Levingon, Stutton, The Strand (by the Orwell Bridge), Harkstead, Holbrook Bay, Erwarton Bay and Jacques Bay are the favoured sites.		
Frequency	Convenient low tides. Voluntary Code of Practice introduced a voluntary closed season between December and February (for Ragworm), but it is not always adhered to.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance to roosting and feeding birds, particularly during low tides when birds should be feeding Damage to sediment structure – alterations in particle size gradients and oxygen availability resulting in possible changes to birds' prey species. Abrasion through trampling Toxic contamination through re-release of heavy metals (sediment disturbance) Non-toxic contamination through littering Biological disturbance through removal of species, resulting in complex ecosystem effects which may result in changes to birds' food types and availability – some bays have reportedly been 'dug out' in the past by the more unscrupulous baitdiggers. 		
Research undertaken	Lots of research has been done nationally and studies show that impacts are very much site dependent (e.g. Blake, 1979, Cryer et al., 1987 and Olive, 1993). English Nature commissioned 'Baitdigging in the Stour and Orwell Estuaries'; a report by Suffolk Wildlife Trust in March 1998. Found that in general, estuaries not dug heavily, but some localised intense digging went on. These areas showed impacts incl. spoil heaps and holes. Concluded baitdigging an unlikely cause of bird disturbance, but that it was possibly increasing and there were potential impacts on invertebrates and through indirect effects such as toxin release – management was required.		
Research required	The impact of the Stour and Orwell voluntary Code of Practice has not yet been assessed, and there is little knowledge of the true impact of local baitdigging.		
Ongoing management	A voluntary Code of Practice for the Stour and Orwell estuaries was introduced and distributed to angling shops and clubs in 2000, as a result of the 1998 study done for English Nature.		
Gaps in management	Voluntary Code of Practice may not be getting through to its target audience, who may either be unaware of it, or not adhere to its suggestions. There may also be a problem with groups of baitdiggers coming to the estuaries from elsewhere, who dig in less sustainable ways. There are difficulties in distinguishing between digging for personal use and digging for commercial purposes, which is technically not a legal activity.		
New actions required	Relevant authority to implement new actions	Timescale	
C1 Ensure voluntary Code of Practice is more widely distributed and understood. C2 Hold discussions with Baitdigging Group as to best management options and success of Code of Practice. C3 Commission monitoring programme.	C1, C2 and C3 English Nature (with help from Suffolk Coast & Heaths Unit).	Sept. 2003	
		Ongoing, report every Sept.	
		Sept. 2004	
C4 Consideration of options available for management of baitdigging, based on results of monitoring programme.	English Nature.	Sept. 2004	


	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity		DEFRA. Eastern Sea Fisheries Joint Committee.	
Location	Nacton Shore Piper's Vale Bridge Wood Wrabness Along the Strand (south side of the Orwell near the Orwell Bridge) Shotley Harwich		
Frequency	High tides Low tides (when fishing from gravel hards)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance through human presence Non-toxic contamination through littering and loss of line – can be ingested by birds or can cause entanglement Abrasion through trampling 		
Research undertaken			
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Angling is a common-law right but anglers must adhere to minimum landing sizes determined by DEFRA. Permits are required for migratory species such as sea trout and eels (issued by the Environment Agency). Eastern Sea Fisheries Joint Committee enforces these DEFRA regulations and the Environment Agency permit scheme. Eastern Sea Fisheries Committee will maintain a watching brief to ensure problems do not arise in the future. 		
Gaps in management	None – not considered by the authorities to be having an impact at present.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity		Maritime and Coastguard Agency Environment Agency Eastern Sea Fisheries Joint Committee	
Location	Throughout European Marine Site		
Frequency	Unknown		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance Non-toxic contamination through littering and loss of line, which can result in ingestion or entanglement. 		
Research undertaken			
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Angling is a common-law right but anglers must adhere to minimum landing sizes determined by DEFRA. Permits are required for migratory species such as sea trout and eels (issued by the Environment Agency). Eastern Sea Fisheries Joint Committee periodically board boats to check compliance. Eastern Sea Fisheries maintain a watching brief on this issue. 		
Gaps in management	Not considered to be having a significant impact on features and sub-features, although the Relevant Authorities would like to find out more about the sport.		
New actions required	Relevant authority to implement new actions	Timescale	
C5 Compile database of angling boats and engage in dialogue (to find out more about the sport).	Eastern Sea Fisheries Joint Committee.	Sept. 2004	



6 (d) WATER-BASED RECREATION

The sheltered waters and the dramatic views of the estuaries make this area very popular with water-sports enthusiasts. The marinas are popular ports of call for yachts cruising down the East Coast, and many locals have boats in the estuaries, moored at the marinas or on moorings. This recreational provision attracts people to the area, not just as holidaymakers, but as permanent residents who enjoy the high quality of life that the estuaries can offer. Through their excellent recreational potential, these estuaries contribute further to the local economy.



Water sports other than sailing take place within the confines of the estuaries. Personal watercraft are increasingly popular in the UK, as they can be launched from virtually any site with car access, although few are seen on these estuaries. Some water-skiing is enjoyed in the area too, and there is a dedicated water ski-ing zone, about 1 mile long, near Levington (on the Orwell). Quieter vessels such as canoes and rowing boats are sometimes seen on the waters, particularly in the warmer summer months. However, sailing remains the most popular water sport taking place on the estuaries. The 1997 Moorings Survey [carried out by The Landscape Partnership on behalf of The Sports Council (Eastern Region)] indicated that there were around 2,954 moorings and marina berths on the rivers, not all of which are always occupied. This figure is not thought to have changed much since the report came out, and there has been a shift towards more boats being kept in marinas and fewer on moorings over the past two decades.

The issues surrounding water-based recreation are much the same as for land-based recreation.

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Associated British Ports (ABP) Ipswich. Harwich Haven Authority.		Royal Yachting Association (Eastern region).
Location	Only permitted in the Orwell – both types of vessel are restricted to a special area between Levington and Trimley (ABP Ipswich bye-law). Not permitted within the European Marine Site in the Stour.		
Frequency	Mostly in summer, although season could be extending with the use of warmer wetsuits and drysuits.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Physical damage (through wave generation) Noise and visual disturbance to birds – water birds (particularly Golden Plover) are highly sensitive to unpredictable movements and increases in noise. Trampling of mudflat and saltmarsh in order to launch 		
Research undertaken	Generic national research has been carried out (e.g. Disturbance to waterfowl on estuaries, Wader Study Group Bulletin 68, Special Issue, Aug. 1993. Eds. Davidson, R. & Rothwell, P.) but there have only been limited attempts to quantify this activity on these estuaries (e.g. O'Hara, D., Report on usage and disturbance survey of the Stour Estuary, Report to the RSPB, Jan. 1994).		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> The RYA produce a personal watercraft management guide to promote responsible use. The Harwich Haven Yachting Guide (widely distributed in surrounding areas) publicises the speed limits and environmental information for the estuaries. ABP Ipswich bye-laws restrict the use of water skis to the area between Levington and Trimley (but also apply this to personal watercraft). The Harbour Master polices illegal launches of personal watercraft on sight (which sometimes occur at Woolverstone). Water ski-ing or use of personal watercraft is not permitted without specific approval from the Harbour Master in the Stour – permission is not given in the European Marine Site. The 8-knot speed limit also effectively rules it out. Sign reminding people of speed limit and prohibition of water ski-ing is being replaced at Bradfield by Harwich Haven Authority (May 2002). Harwich Haven Authority and ABP Ipswich will maintain a watching brief on this issue (using information from people working around the estuaries, such as conservation wardens). 		
Gaps in management	None – the Relevant Authorities do not consider water ski-ing or the use of personal watercraft to be causing a problem around the estuaries.		
New actions required	Relevant authority to implement new actions		Timescale
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich.		
Location	In the Orwell at Ipswich Wet Dock Popular in the Stour (particularly Wrabness and occasionally off Harwich)		
Frequency	Very rare occurrence at Ipswich Wet Dock. In the Stour, it is very much dependent on weather conditions – most activity only occurs in the summer and autumn, at weekends.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Trampling of mudflats and saltmarsh in order to launch Noise and visual disturbance to birds – water birds (particularly Golden Plover) are highly sensitive to unpredictable movements and increases in noise. 		
Research undertaken			
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> ABP Ipswich regulate windsurfing activity within their areas of jurisdiction. Harwich Haven Authority bye-laws forbid windsurfing in shipping lanes or anywhere which would be a hazard to other users, but not in other areas. Harwich Haven Authority and ABP Ipswich will maintain a watching brief, re-examining their management and contacting local groups to establish dialogue if changes occur or if problems are identified. 		
Gaps in management	Not considered to be having a significant impact on the European Marine Site at present.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Associated British Ports (ABP) Ipswich. Harwich Haven Authority. Babergh District Council. English Nature.	The Crown Estate (Stour only).	All sailing clubs within the estuaries. Royal Yachting Association (Eastern region).
Location	There are 447 moorings in the Orwell and 478 in the Stour with boats on them (2001 figures).		
Frequency	Used all year round, but more activity in the yachting season (1st April – 31st October)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Saltmarsh and mudflats are sensitive to damage from abrasion due to swinging moorings, although intertidal moorings are limited only to the mudflat areas and may not impact on saltmarsh. • Noise and visual disturbance • Toxic contamination through sediment re-suspension • Toxic contamination through paint leaching, diesel, fuels etc. • Non-toxic contamination through litter 		
Research undertaken	<ul style="list-style-type: none"> • Moorings survey carried out for The Sports Council (Eastern Region) in 1997 concluded that marina development had led to a large increase in boats moored/berthed on estuaries since 1980 and that conservation and access pressures meant that new moorings were very unlikely. • ABP commissioned an aerial survey of moorings in 2001 • ABP carry out an annual inspection of mooring positions 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • The Babergh Local Plan prohibits further moorings being created off the Shotley peninsula. Suffolk Coastal District Council only has planning policies relating to the landward developments that may be associated with moorings. • On Crown Estate land in the Stour, blocks of moorings (either as a fixed area, or a specified number of moorings) are leased out to sailing clubs, who manage the moorings themselves. Harwich Haven Authority regulates moorings in the Stour and is currently reviewing this process. • In the Orwell, moorings are let and regulated by ABP Ipswich, with individual clubs managing their own moorings. • Harwich Haven Authority and ABP Ipswich have started a Review of Existing Consents (under Reg. 50 of Habitats Regulations) and this will be completed by 2010. 		
Gaps in management	<p>Previously, new moorings were established without specific consideration of the European Marine Site.</p> <p>Tendring District Council has no local plan policy for moorings.</p>		
New actions required	Relevant authority to implement new actions	Timescale	
D1 Ensure appropriate consideration is given to the requirements of the Habitats Regulations during laying of new moorings.	Harwich Haven Authority and ABP Ipswich.	Ongoing, report every September	
D2 Investigate the need and potential scope for a policy on moorings in the Tendring District Review Local Plan.	Tendring District Council.	Sept. 2003	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich.		Royal Yachting Association. Local yacht clubs. Suffolk Yacht Harbour.
Location	Numerous locations within the estuaries		
Frequency	All year round, more intense over summer (May-October)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance Toxic contamination through fuels, oils, zinc (used as a sacrificial anode) etc. Non-toxic contamination through litter, sewage discharges and waste water. 		
Research undertaken	<ul style="list-style-type: none"> National research has been carried out regarding the impact on birds The Environment Agency has identified high levels of Zinc within the estuaries (used as a sacrificial anode) RSPB have carried out local monitoring (O'Hara, D., Report on usage and disturbance survey of the Stour Estuary, Report to the RSPB, Jan. 1994). 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Motor boats tend to keep to the commercial channel – away from roosting and feeding birds Most sailors on these estuaries are day sailors and their sinks and toilets on board have minimal use Marinas take most of the yachts' waste – all have receptors for rubbish, batteries and oil Speed limits are in effect around the estuaries. ABP have publicised speed limits more effectively (placing buoys at each end of channel with speed limits clearly displayed in May 2002). Environment Agency monitor zinc as part of Dangerous Substances Directive monitoring The Royal Yachting Association distribute guidance on environmental issues (such as the 'Tide Lines' leaflet) to members, affiliated clubs and training courses Harwich Haven Authority's Yachting Guide (widely distributed around the area) publicises the speed limits and gives information about the environmental sensitivity of the estuaries 		
Gaps in management	<ul style="list-style-type: none"> Speed limits are not always adhered to. Relevant Authorities are unsure whether boat users receive advice on sailing within the European Marine Site. 		
New actions required	Relevant authority to implement new actions	Timescale	
D3 Re-erect sign at Bradfield about speed limits.	Harwich Haven Authority.	Sept. 2003	
D4 Disseminate existing environmental guidance for recreational boat users.	Harwich Haven Authority (through Suffolk Coast & Heaths Unit).	Sept. 2003	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich.		All marinas and yacht berths.
Location	<div> <div> Neptune Marina (Ipswich) Haven Marina (Ipswich) Debbages (Ipswich) George Prior's shipyard (Ipswich) Orwell Yacht Club (nr. Ipswich) Foxes Marina (nr. Ipswich) </div> <div> Stoke Sailing Club (nr. Ipswich) MDL (Woolverstone) Royal Harwich Yacht Club (Woolverstone) Suffolk Yacht Harbour (Levington) Webs Dry Dock (Pin Mill) </div> </div>		
Frequency	All year round, more intense usage over summer (May-October) 1,230 boats are in marinas in the River Orwell. 350 boats are moored at Shotley Point Marina (the only marina in the Stour)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance Toxic contamination through runoff. Non-toxic contamination through litter, sewage discharges and waste water 		
Research undertaken	<ul style="list-style-type: none"> Environmental Impact Assessments were produced for initial developments of some marinas around the estuaries UK Marine SACs Life Report (available from English Nature) 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Good practice recommends the installation of interceptors at all facilities where boats are lifted from the water and washed. These interceptors catch run-off. The EU Recreational Craft Directive (94/25/EC) requires all new boats (between 2.5 and 24m in length) which have toilets on board to be fitted with either permanent holding tanks, or the means to attach temporary holding tanks. Most marinas have mains sewage provision (the only tidal provision is at Royal Harwich Yacht Club). Sewage pumpout facilities may have to be installed in due course (as part of MARPOL Annex IV). Marina owners usually discourage sewage discharge in their waters and the Environment Agency are not aware of any water quality issues arising from marinas. The Environment Protection Act (1990) prohibits discharge of certain substance into the water (such as copper scrapings). 		
Gaps in management	None - not considered to be having a significant impact on the European Marine Site.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich.		Ipswich Canoe Club.
Location	Most canoeing activity on the estuaries takes place at Manningtree, where a local club practises.		
Frequency	Unknown		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance - water birds (particularly Golden Plover) are highly sensitive to unpredictable movements and increases in noise. Damage to saltmarsh and mudflat through trampling and dragging canoes to water 		
Research undertaken	None		
Research required	Identify location, frequency and intensity of canoeing activity on estuaries		
Ongoing management	None		
Gaps in management	The Relevant Authorities have little knowledge about canoeing activity on the estuaries.		
New actions required	Relevant authority to implement new actions	Timescale	
D5 Identify local canoe clubs and engage in dialogue to determine location, frequency and intensity of canoeing activity on the estuaries and to promote the importance of the European Marine Site.	Harwich Haven Authority and ABP Ipswich (through Suffolk Coast and Heaths Unit).	Sept. 2003	

6 (e) COMMERCIAL FISHING

Little commercial fishing activity takes place within the estuaries. Large boats are banned within the 12-mile limit and even the smaller boats only tend to come into the estuaries during periods of bad weather.

The presence of wild beds of native oysters (*Ostrea edulis*) enhances the environmental importance of the site and the Eastern Sea Fisheries Joint Committee will ensure that the gathering of this species, if permitted, would be carried out in accordance with national Biodiversity Action Plan guidelines as well as the Habitats Regulations.

There is no known commercial hand gathering of shellfish taking place within the estuaries at present. This is because shellfish are not readily accessible to hand-gatherers around the estuaries, especially in numbers large enough to warrant a commercial operation. If this activity were to be discovered before the next review of this Management Scheme, Eastern Sea Fisheries Joint Committee would consider the application of bye-laws for fisheries management purposes, or if the Relevant Authorities Group felt it to be threatening the integrity of the European Marine Site.

A review of the effects of fishing within UK European Marine Sites can be found at www.ukmarinesac.org

Fisheries do not compete directly with the designated birds in the Stour and Orwell SPA, as most of the birds feed on invertebrates in the saltmarsh and mudflats. However, changes in the fisheries side of the ecosystem could have complex knock-on effects on the invertebrate populations. Because commercial fishing in the estuaries is not considered to be having a significant impact, it is proposed in this section that Harwich Haven Authority and the Eastern Sea Fisheries Joint Committee will continue their extensive and thorough monitoring programmes and that any changes in fishing effort will be dealt with by revising this section.



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Eastern Sea Fisheries Joint Committee (ESFJC).	DEFRA (licensing of commercial fishing vessels).	District Councils (responsible for water quality testing). CEFAS. English Nature (through Biodiversity Action Plan).
Location	If fisheries were to be opened, potentially throughout the site, but areas must be identified as designated shellfish waters (based on water quality test results) before commercial fishing could be permitted.		
Frequency	If fisheries were to be opened, would be seasonal, depending on fishery (e.g. cockles from June to October, mussels throughout the winter).		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Physical damage to sediment structure through abrasion Biological disturbance (through extraction of species, possible introduction of non-native species, and through disturbance of non-target species such as worms and other molluscan shellfish in substrate). 		
Research undertaken	<ul style="list-style-type: none"> Eastern Sea Fisheries Joint Committee carry out periodic commercial shellfish surveys (reported in Annual Research Report). Harwich Haven Authority carry out fisheries research in relation to proposed port developments (supporting documentation for public inquiries). 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Mechanical Dredging for molluscan shellfish is banned under ESFJC Bylaw 3. If a new fishery was proposed, an appropriate assessment would be necessary if it was determined to be likely to have a significant effect. Shellfish stock assessment is carried out by Eastern Sea Fisheries Joint Committee to guide fishery management decisions and ensure the sustainability of the fishery. A Biodiversity Action Plan is being developed for Native Oysters (<i>Ostrea edulis</i>). 		
Gaps in management	None, as activity does not take place at present.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

(E) II COMMERCIAL FISHING (OTHER THAN MOLLUSCAN SHELLFISH)

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Eastern Sea Fisheries Joint Committee. Environment Agency.	DEFRA (licensing of commercial fishing vessels).	
Location	Throughout estuaries, although most effort is concentrated at the seaward end of the estuaries, outside the European Marine Site area. Trawling is the only fishing method used within the European Marine Site. Outside the European Marine Site, some fixed-gear fishing occurs.		
Frequency	Throughout the year		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Possible physical damage through sediment abrasion by trawl gear. • Possible disturbance (noise, light, visual disturbance) • Biological disturbance through extraction of species, possibly resulting in changes in food availability through complex ecosystem effects 		
Research undertaken	<ul style="list-style-type: none"> • Harwich Haven Authority undertake frequent fisheries studies • Centre for Environment, Fisheries and Aquaculture Science (CEFAS) undertake juvenile fish counts every year. 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • Trawlers over 15.24m are not allowed in the estuaries (Eastern Sea Fisheries Joint Committee bye-law) • DEFRA and Eastern Sea Fisheries Joint Committee officers enforce EU and UK technical regulations (net size, fish sizes etc.) • Environment Agency regulates eel and sea trout fishing – a licence is required to catch these species and Environment Agency bailiffs periodically check compliance. (For this purpose, Eastern Sea Fisheries Joint Committee officers act as Environment Agency bailiffs). • Eastern Sea Fisheries Joint Committee maintain a watching brief. 		
Gaps in management	None, because fishing activity is very limited within the estuaries.		
New actions required	Relevant authority to implement new actions	Timescale	
None			



6 (f) PORTS AND SHIPPING ACTIVITIES

The Stour and Orwell European Marine Site is home to Britain's largest container port at Felixstowe, the expanding Harwich International Port and one of the UK's major roll-on/roll-off facilities at Ipswich. There are a number of other quays and wharves around the its edges. The Haven Ports form one of the busiest areas for commercial shipping in the UK, with approximately 12,000 vessels visiting every year. The largest container ships can be up to 350m long with a gross tonnage of 91,000 tonnes.

With expanding demand and the trend towards larger and deeper ships, there is, nationally, a requirement for developing new sites for port operations and for ensuring the existing ones are fully and efficiently utilised. Many suitable coastal and estuarine sites have been designated as SSSIs or SPAs, and so the process of identifying and developing schemes has to take into account these conservation designations. New projects, such as those proposed at Felixstowe, Ipswich and Bathside Bay, are covered by the Habitats Regulations as "plans or projects" and cannot be dealt with through this Management Scheme. This Management Scheme considers the on-going operation of the Ports and the impact that this has on the European Marine Site.

Ports have become markedly more aware of their environmental responsibilities in recent years and are actively pursuing policies that limit the impact of their operations and potential new projects on the environment, whilst contributing to sustainable development. The discharge of their functions through this Management Scheme should enable them to comply with the requirements of the Habitats Directive and protect the natural features for which the Stour and Orwell European Marine Site has been designated.

Good practice guidelines for ports and harbours operating within or near to European Marine Sites and a summary of known research can be found at www.ukmarinesac.org



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port.	Ipswich Borough Council. Crown Estate. English Nature (monitor impacts). DEFRA.	Harwich Navyard. Fox's, Shotley, Woolverstone and Levington Marinas. Orwell Yacht Club and Royal Harwich Yacht Club. Mistley Quay & Forwarding Co.
Location	Approach channel; berths and approaches within Harwich Haven, including Port of Felixstowe, Harwich International Port and Mistley Quay. River Orwell Channel to the Port of Ipswich. Berths and navigation channels at Port of Ipswich. All marinas listed in 'associated organisations'.		
Frequency	As required: Approx. every 3 months for Harwich and Felixstowe berths and approaches Typically twice per year at Ipswich. Approx. once per year or less at Mistley Marinas – every 2-3 years		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Physical damage – indirect losses due to erosion or changes in sedimentary transport patterns Changes in sediment structure leading to potential change in infauna and birds Noise / visual disturbance of feeding / roosting birds Disposal of dredgings leading to siltation / smothering of habitats and food Potential release of contaminants through sediment redistribution Beneficial accretion through sediment redistribution 		
Research undertaken	<ul style="list-style-type: none"> ABP Ipswich and Harwich Haven Authority undertake regular surveys of depths. Sediment samples are provided for analysis as part of FEPA licensing. Harwich Haven Authority – Continuing studies on mitigation works from previous capital projects; ongoing hydrological and bathymetric research programme; fish and benthos surveys; bird counts (Suffolk Wildlife Trust on behalf of Harwich Haven Authority). Also doing biotope mapping. Chemical analyses of sediment and water undertaken by Environment Agency. Harwich Haven Authority commissioned the British Trust for Ornithology to compare these estuaries with others in UK: indicated that a major shift in bird populations has occurred (fewer Dunlin and Shelduck and more Oystercatchers). One hypothesis to explain this is a shift in sediment particle size structure, possibly caused by dredging. 		
Research required	Improve liaison and integration of current research		
Ongoing management	<ul style="list-style-type: none"> Dredge disposal (by ports or marinas) is licensed through FEPA and CPA, which takes into account environmental considerations. All Statutory Port maintenance dredging is carried out under powers from various Acts and Orders, (Port of Felixstowe, Harwich International Port, ABP Ipswich, Harwich Haven Authority, Harwich Dock Co.) Harwich Haven Authority and ABP Ipswich redistribute some maintenance sediments within the estuary system under FEPA consents. Annual reporting on Harwich Haven Authority mitigation and monitoring schemes. 		
Gaps in management	None, as Harwich Haven Authority and Associated British Ports (Ipswich) have extensive knowledge about the potential impacts of dredging and already do as much as they can within their powers to mitigate its effects. However, there is a need to pull all the extensive research together and to improve liaison between the researchers.		
New actions required	Relevant authority to implement new actions	Timescale	
F1 Improve liaison and integration of current research.	Harwich Haven Authority.	Ongoing, report every September.	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich.		Mistley Quay Forwarding and Freight Company. Harwich Navyard.
Location	Parkeston, Erwarton, and Wrabness anchorages on the Stour Shelf anchorage in lower harbour No commercial vessel anchorages on the Orwell (Possibility of occasional anchoring outside recognised areas)		
Frequency	Infrequent use of Parkeston, Erwarton, and Wrabness anchorages on the Stour. Anchoring outside designated areas is unusual and normally very short term.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Abrasion through anchoring • Toxic contamination from spillages etc., but unlikely to be from fuel as fuelling must be permitted by harbour masters, who never grant permission for ships to re-fuel at anchor. • Non-toxic contamination from litter, waste water etc. • Noise and visual disturbance 		
Research undertaken			
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • Long term (storage) anchoring of vessels is not encouraged, although it has occurred in the past off Wrabness. • The ports take regular sediment samples in maintenance dredging activity areas, which could potentially identify anchoring-based problems • Harwich Haven Authority, the Port of Felixstowe and ABP Ipswich will continue to maintain their watching brief on the situation 		
Gaps in management	None – abrasion through anchoring is not considered to have a significant impact on sub-features, because ships do not anchor on the intertidal areas and all anchoring is already strictly regulated.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port		Mistley Quay & Forwarding Co.
Location	Vessels approaching: Port of Ipswich, Mistley Quay, Harwich International Port.		
Frequency	Approximately 950 vessels / month within Harwich Haven as a whole: 65 % to Felixstowe 15% to Port of Ipswich 18% to Harwich International Port 1% to Harwich Navyard 1% to Mistley Quay		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Shipwash can cause physical damage to the mudflats and particularly saltmarsh, leading to erosion and loss of these habitats. Shipwash waves can cause disturbance of feeding / roosting birds 		
Research undertaken	National Rivers Authority (now Environment Agency) published a report in 1993; "Study of the impacts of ship wash on the Orwell Estuary in Suffolk" which found that shipwash can have an impact on intertidal habitats.		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Shipwash is regulated through speed limits in some areas (8 knots in Harwich Harbour and the Stour and 6 knots for small vessels in the Orwell), enforced by local bye-laws. ABP Ipswich and Harwich Haven Authority can measure and record vessel speeds using Radar systems. Any plan or project involving commercial vessels needs to evaluate any alterations in shipping and therefore impacts of ship wash. Amelioration works may then be required. 		
Gaps in management	None, because speed limits are already observed by commercial shipping.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

(F) IV NON-TOXIC CONTAMINATION (WASTE AND SEWAGE DISPOSAL) FROM SHIPS

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port.		Mistley Quay & Forwarding Co. Harwich Navyard.
Location	All ports in the estuaries: Port of Ipswich, Port of Felixstowe, Harwich Navy Yard, Harwich International Port, Mistley Quay.		
Frequency	Approximately 950 vessels/month within Haven as a whole: 65 % to Felixstowe 15% to Port of Ipswich 18% to Harwich International Port 1% to Harwich Navyard 1% to Mistley Quay		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Non-toxic contamination through waste disposal, sewage disposal – this can lead to nutrient enrichment (birds are moderately sensitive to such changes) or entanglement/ingestion problems associated with litter. 		
Research undertaken	Sediment analysis and water quality surveys carried out by Environment Agency		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Non-toxic waste is regulated through MARPOL and Port Waste Management Plans. Port plans and facilities are in place. If water quality was found to be deteriorating, the Environment Agency would investigate cause. Environment Agency responds to reports of pollution incidents, and can co-ordinate cleanups and prosecute to recover costs 		
Gaps in management	None, because non-toxic disposal is already controlled and monitoring is in place to detect any changes.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe.		Mistley Quay & Forwarding Co. Harwich Navyard.
Location	All ports in the estuaries: Port of Ipswich, Port of Felixstowe, Harwich Navyard, Harwich International Port, Mistley Quay.		
Frequency	Approximately 950 vessels / month within Haven as a whole: 65 % to Felixstowe 15% to Port of Ipswich 18% to Harwich International Port 1% to Harwich Navyard 1% to Mistley Quay		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Introduction of non-native species can result in competition with and succession over existing species – this can have complex ecosystem effects. Depending on the species, this could result in a reduction in food type or availability. • Introduction of alien strains of diseases, which could directly cause illness in the birds themselves, or affect other species in the ecosystem resulting in complex indirect effects. • Increasing stress on existing habitats and food species. 		
Research undertaken	Ongoing fisheries and benthos surveys undertaken by Harwich Haven Authority. Wide ranging international research is currently underway to assess risks and bring forward proposals for legislation (http://globallast.imo.org).		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • International regulations are soon to be put in place regarding non-native species and ballast water management. • The following International Maritime Organisation (IMO) voluntary guidelines have already been adopted: 'Guidelines for the control and management of ships' ballast water to minimise the transfer of harmful aquatic organisms and pathogens' (Resolution A.868 (20) adopted 27th Nov. '97) • The following IMO International Convention is under discussion: 'Draft text of international convention for the control and management of ships' ballast water and sediments' (MEPC 46/3/2) • Harwich Haven Authority's biological surveys highlight non-native species if they occur. 		
Gaps in management	None. The Relevant Authorities accept that this could have theoretically large impacts on the European Marine Site, but already conform to current international requirements and are not in a position to change the management with regards to ballast water.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port. Babergh District Council. Suffolk Coastal District Council. Tendring District Council.		Mistley Quay & Forwarding Co. Harwich Navyard.
Location	All ports in the estuaries: Port of Ipswich, Port of Felixstowe, Harwich Navyard, Harwich International Port, Mistley Quay.		
Frequency	Approximately 950 vessels / month within Haven as a whole: 65 % to Felixstowe 15% to Port of Ipswich 18% to Harwich International Port 1% to Harwich Navyard 1% to Mistley Quay		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Toxic contamination (to the water) from TBT [sheet (a) vii], oil spills [sheet (a) vi], re-fuelling etc. As explained in previous tables, bioaccumulative effects (to which Golden Plover are particularly sensitive) and direct effects can occur. Toxic contamination (to the atmosphere) including air pollution and dust emissions could impact on the birds, their prey species and their habitats. 		
Research undertaken	<ul style="list-style-type: none"> Sediment analysis and water quality surveys carried out by Environment Agency Sediment analysis carried out for maintenance dredging disposal licences TBT is tested for in sediment sampling for maintenance dredging disposal licences, covering the main areas of commercial shipping. Environment Agency test for dangerous substances throughout the estuaries. Local Air Quality Assessments commissioned by the District Councils (1999-2001), which looked specifically at port activities, indicated that the combined emissions from shipping, industry and road transport in the Stour & Orwell estuaries area are unlikely to be of concern with regard to national air quality objectives. 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Toxic contamination is controlled by national legislation and pollution controls. An oil spill contingency plan is in place and has been rehearsed (see oil spill section). ABP carries out dust / air quality surveys in cargo handling areas in Ipswich Harwich Haven Authority is giving questionnaires to ships to find out what fuels they use and whether or not they use less heavy fuels in harbour Environment Agency responds to reports of pollution incidents, and can co-ordinate cleanups and prosecutes to recover costs. Where on-going monitoring and assessment indicates that air quality fails to meet government standards District Councils are required to declare Air Quality Management Areas and implement action plans to improve air quality. Could show up in impacts on saltmarsh or other intertidal habitats. If this is noticed during English Nature's condition monitoring then further research could be required. International legislation could be brought in by the International Maritime Organisation, which will be implemented locally by the ports and harbour authorities, within the deadlines set by the legislation. District Councils carry out ongoing management and reviews of air quality within their districts. 		
Gaps in management	None – the Relevant Authorities consider current management to be sufficient.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port.		Mistley Quay & Forwarding Co. Harwich Navyard.
Location	All ports in the estuaries: Port of Ipswich, Port of Felixstowe, Harwich Navyard, Harwich International Port, Mistley Quay.		
Frequency	Operations throughout the day and night, every day of the week and all days of the year (except Christmas Day in some ports)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise disturbance to feeding/roosting birds, background and occasional (although background noise is not thought to be as much of a problem as occasional, sudden noise) Noise from lorries Visual disturbance (potentially including light disturbance, although this is not thought by English Nature to be a major problem). 		
Research undertaken	<ul style="list-style-type: none"> Disturbance is considered in Environmental Impact Assessments for development projects. Noise and lighting studies have been carried out by the Haven ports. National research on disturbance indicates a complex issue – very much site dependent. Ongoing bird counts by Suffolk Wildlife Trust are undertaken on behalf of Harwich Haven Authority. 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Shore operations take place outside the European Marine Site and only impact on small areas. Operations are subject to the Docks Regulations, the ports' specific development acts and also agreements on on-going improvement to noise and light spill. Extensive management measures have been brought in to reduce disturbance to local people, including sound reduction measures and more focussed lighting, which also reduce any possible impacts to birds. Harwich Haven Authority and ABP Ipswich maintain watching briefs on this issue. 		
Gaps in management	None – the Relevant Authorities do not believe that port disturbance threatens the European Marine Site, or that any more could realistically be done to minimise disturbance.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

(F) VIII TOXIC CONTAMINATION FROM PORT ACTIVITIES AND CARGO HANDLING

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port.		Mistley Quay & Forwarding Co. Harwich Navyard.
Location	All ports in the estuaries: Port of Ipswich Port of Felixstowe Harwich Dock Company Harwich International Port Mistley Quay		
Frequency	Operations throughout the day and night, every day of the week and all days of the year (except Christmas Day in some ports)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Toxic contamination (to the water and sediments) from surface water run-off Toxic contamination (to the atmosphere) - air pollution, dust emissions Accidents involving cargo handling (breakage, spillage, fire) can result in the release of toxic materials <p>All toxic contaminants can cause indirect effects (including bioaccumulation and a reduction in food availability and palatability) and direct effects (through poisoning).</p>		
Research undertaken	<ul style="list-style-type: none"> Sediment analysis and water quality surveys are carried out by the Environment Agency. Sediment analysis is carried out for maintenance dredging disposal licences. Local Air Quality Assessments commissioned by the District Councils (1999-2001) indicated that the combined emissions from shipping, industry and road transport in the Stour & Orwell estuaries area are unlikely to be of concern with regard to national air quality objectives. Tendring District Council Air Quality Assessment (Enviros Aspinwall, May 2000) concluded that baseline sulphur dioxide levels were low in the Harwich/ Parkeston area, with no evidence of significant increase close to quays. This continues to be monitored. An assessment of sulphur dioxide emissions from shipping in the Thames (DETR, 2000) indicated that the impact of ships in port was very localised, with high concentrations of sulphur dioxide arising only during the worst meteorological conditions and only lasting for a short period of time (approx. 20 mins.). It also concluded that the impacts of emissions from large ships moving along the Thames was both small and localised (Environmental Research Group, Kings College London, November 2000). 		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> All ports have spillage / leakage programmes which are subject to housekeeping audits, carried out quarterly at Ipswich, Harwich and Felixstowe Various drainage controls exist at the likely spillage and storage areas (penstocks, interceptors etc.) Operations are subject to Docks regulations, various development Acts and controls and special licences for dusty or hazardous cargoes. Environment Agency responds to reports of pollution incidents, and can co-ordinate cleanups and prosecute to recover costs. Where on-going monitoring and assessment indicates that air quality fails to meet government standards District Councils are required to declare Air Quality Management Areas and implement action plans to improve air quality. Air quality impacts could show up in condition of saltmarsh or other intertidal habitats. If this is noticed during English Nature's condition monitoring then further research could be required. 		
Gaps in management	None – the Relevant Authorities consider current management to be sufficient.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port.		Mistley Quay & Forwarding Co. Harwich Navyard.
Location	All ports in the estuaries: Port of Ipswich, Port of Felixstowe, Harwich Dock Company, Harwich International Port, Mistley Quay.		
Frequency	Operations throughout the day and night, every day of the week and all days of the year (except Christmas Day in some ports)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Non-toxic contamination from litter, packaging, debris etc. (which can lead to entanglement and ingestion problems). Bulk food-stuffs are imported at Harwich International Port, Mistley Quay and Ipswich, which could lead to a significant local increase in the biochemical oxygen demand if leakage into the estuaries took place. 		
Research undertaken	Sediment analysis and water quality surveys carried out by Environment Agency		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> All ports have spillage / leakage programme, including special provision for grain / other organic materials. Skips and waste bins are provided for waste disposal Housekeeping audits are carried out monthly at Ipswich and quarterly at Harwich and Felixstowe Environment Agency responds to reports of pollution incidents, and can co-ordinate cleanups and prosecute to recover costs. 		
Gaps in management	Importance of the European Marine Site should be included in induction and on-going training for Relevant Authorities' staff.		
New actions required	Relevant authority to implement new actions	Timescale	
F2 Ensure the importance of the European Marine Site is promoted in staff induction training.	Harwich Haven Authority, ABP Ipswich, Port of Felixstowe, Harwich International Port.	Sept. 2003	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Harwich Haven Authority. Associated British Ports (ABP) Ipswich. Port of Felixstowe. Harwich International Port.		Mistley Quay & Forwarding Co. Harwich Navyard.
Location	All ports in the estuaries: Port of Ipswich, Port of Felixstowe, Harwich Dock Company, Harwich International Port, Mistley Quay.		
Frequency	As required - most jobs occur infrequently (Operations which may impact include: fender or piling repair, surfacing works, quayside painting etc.)		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance to feeding/roosting birds Toxic contamination through air pollution, run-off or from cleaning or painting materials (effects listed in other tables) Non-toxic contamination through debris, waste etc. 		
Research undertaken	Suffolk Wildlife Trust do ongoing bird counts on behalf of Harwich Haven Authority. Sediment analysis and water quality surveys carried out by Environment Agency. Sediment analysis carried out for maintenance dredging disposal licences.		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> Health & Safety Risk assessments are carried out for each maintenance programme. Noise, waste disposal, air & water pollution also covered by other Acts & regulations A painting technique recently employed at Harwich International Port, for the painting of the pontoon, guarantees that no paint is dropped into the water. Shot-blasting at Felixstowe uses inert materials as an alternative to shot, including recycled glass and garnet. 		
Gaps in management	Need to ensure that the environmental element is included in the risk assessments.		
New actions required	Relevant authority to implement new actions	Timescale	
F3 All ports to ensure that environmental assessments are included in health and safety risk assessments before maintenance programmes can begin.	Port of Felixstowe, Harwich International Port and ABP Ipswich.	Sept. 2003	

6 (g) AVIATION ACTIVITY

The European Marine Site is under the flight path of some commercial travel, but these flights cross the site at very high altitudes and are not considered to have an impact on the site.

However, there is other low-level flight activity which sometimes passes over the European Marine Site, including Coastguard and Police activities and military operations. Only the latter has been considered for the purposes of this Management Scheme, because the flights undertaken by Coastguard and Police are in the interests of human health and safety, and occur at random and only in response to incidents. However, there are frequent military flights over the estuaries, of which many are thought to be exercises which may not necessarily need to take place over such a sensitive site.

The counties surrounding the estuaries have historically sited many military bases, including those of the RAF and the US Air Force. Most of the aircraft seen over the European Marine Site are thought to come from one specific air base, but the Relevant Authorities are investigating this further, as the frequency, origin and range of flights are currently unknown.



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity		Ministry of Defence.	Wattisham air field.
Location	Low flight exercises are thought to take place all around the estuaries. Mudflat landings have reportedly been witnessed on the Stour.		
Frequency	Occasional manoeuvres take place, which, when underway involve many flights per day.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance to feeding/roosting birds, particularly from helicopters and planes flying at low altitude and when landing takes place. 		
Research undertaken	<ul style="list-style-type: none"> WeBS counts record incidents if they occur. Relevant Authorities have contacted Wattisham Army Air Corps. Base to find out more. Information note on impact of aviation on European Marine Sites has been issued by English Nature. 		
Research required	None identified		
Ongoing management	<p>This activity is not currently managed with respect to the European Marine Site. A response has been received from Wattisham Air Base stating that:</p> <ol style="list-style-type: none"> 1. They are not the only organisation conducting flights over the estuaries (coastguards, the RAF, the US Air Force and private flights also occur). 2. A Temporary Local Avoid can be requested from Wattisham (for their flights only) 3. Permanent avoids can only be applied for from Whitehall. 		
Gaps in management	Little is known about the frequency and impact of this activity.		
New actions required	Relevant authority to implement new actions	Timescale	
G1 Engage in further dialogue with Wattisham Air Base and act appropriately.	English Nature.	Sept. 2003	



6 (h) FLOOD AND COASTAL DEFENCE

With the East Anglian coastline being subjected to great pressure from rising sea levels and sinking land, this is certainly a hot topic locally! Many people's land adjoins the estuaries and is gradually being subjected to erosion and land-slip.

Habitats are also under threat. Intertidal habitats are being 'squeezed' out, as rising sea levels meet artificial sea walls and this poses a severe threat to the European Marine Site. Existing flood defences in one area can have unintended 'knock-on' effects elsewhere and the hydrodynamic regimes of the estuaries are further complicated by bathymetric changes as a result of dredging and other activities.

We are fortunate in that the estuaries have been subjected to extensive sediment and bathymetric surveys commissioned by the Harwich Haven Authority. These surveys have enabled the Authority to gain understanding about the behaviour of water within the estuaries and to be able to predict changes in the estuaries as a result of certain activities.

DEFRA have overall responsibility for flood defence policy in England and Wales. Under the Water Resources Act (1991), the Environment Agency has a duty to exercise general supervision over all matters relating to flood defence. New works and maintenance improvements can be undertaken on sea defences and main river defences. In such instances, the Environment Agency ensures all works comply with environmental requirements. Local authorities are responsible for coastal defence along the length of frontage not subject to flooding (such as cliffs).

Some of the issues arising from this section will be picked up by the CHaMPs (Coastal Habitat Management Plans) process currently beginning in Suffolk (the Suffolk CHaMP will include both estuaries). These new plans will examine the issues and conflicts relating to flood defence and the Habitats Regulations.



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Environment Agency.		Private landowners. Norfolk and Suffolk Local Flood Defence Committee (LFDC). Essex LFDC.
Location	North side of Stour and both banks of River Orwell.		
Frequency	Never more frequent than once a year for each borrowdyke		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Maintenance work can cause noise and visual disturbance • Changes in turbidity can arise from clearances. 		
Research undertaken	<p>Annual surveys assess drainage within channels and sluices.</p> <p>Consultations with English Nature and Suffolk Wildlife Trust have already taken place, as part of the process of establishing environmental standards to work to.</p> <p>The 1999 North Essex and South Suffolk Pilot Borrowdyke Study (Andy Schofield, for the RSPB) found that borrowdykes support a diverse wildlife population, including many birds, particularly in bad weather when they are used for sheltered feeding.</p>		
Research required	None identified		
Ongoing management	<ul style="list-style-type: none"> • Environment Agency contractors adhere to environmental standards drawn up with Suffolk Wildlife Trust and English Nature • Work is only carried out between August and October, to minimise disturbance to birds. • Not considered to be having a significant effect on European Marine Site features at present. 		
Gaps in management	None – Relevant Authority considers current management to be sufficient.		
New actions required	Relevant authority to implement new actions	Timescale	
None			

(H) II MAINTENANCE OF COASTAL DEFENCES

NB: Will be treated as a plan or project unless no significant effect will occur on the European Marine Site

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Environment Agency. Port of Felixstowe (responsible for Trimley Sea Wall).		Private landowners. Local Flood Defence Committees.
Location	Various locations around the estuaries.		
Frequency	Maintenance is only carried out a maximum of once per year at any given site, and only between the end of August and the end of October. Emergency works are carried out as required, at any time of year.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Physical loss of mudflat and saltmarsh Noise during construction Physical damage to intertidal habitats during construction Visual impacts from disturbance to view from feeding and roosting grounds Visual impacts of construction materials and equipment 		
Research undertaken	<p>Suffolk County Council and English Nature have commissioned saltmarsh surveys, which examine current areas of saltmarsh and compare to areas in the 1970s, using aerial photography and GIS techniques – found that holding the line is causing coastal squeeze (e.g. Erosion of the saltmarshes of Essex between 1988 and 1998, A report to the Environment Agency by the University of Newcastle, May 2000).</p> <p>Bathymetric modelling of the whole coast is carried out by the Environment Agency.</p> <p>Harwich Haven Authority carry out sediment flow, hydrodynamic and bathymetric surveys of the rivers.</p>		
Research required	Intertidal surveys are required to look at habitats other than saltmarsh (which has only been studied because areas are easy to identify from aerial photographs).		
Ongoing management	<ul style="list-style-type: none"> A Shoreline Management Plan is in place for the Stour. The Environment Agency nationally has an agreement with English Nature regarding the maintenance of coastal defences in European Marine Sites: If maintenance work was likely to have a significant effect on the site, it would be treated as a plan or project Holding the line has been shown to be having a significant effect – so maintenance is treated as a plan or project. If work is not going to have an adverse effect, it is subject to this Management Scheme. Emergency works are carried out in line with the Environment Act (1995), as agreed with English Nature. Maintenance is only carried out at times of the year which would have minimum impact on the bird species present at the site (avoiding disturbance to breeding and feeding patterns) and is done under Permitted Development Rights (Town and Country Planning Act, 1995). Environment Agency's consent is required before third parties can carry out sea wall maintenance. The Suffolk Coastal Habitat Management Plan (CHaMP) is examining the relationship between important habitats and coastal defence – this will be taken into account in the next round of SMP reviews. 		
Gaps in management	The Orwell has not been included in previous Shoreline Management Plans (SMPs).		
New actions required	Relevant authority to implement new actions	Timescale	
H1 Ensure estuaries' European Marine Site status is recognised in the next SMP review.	Environment Agency.	2005-2006	
H2 Include the Orwell in the next Essex SMP review.	Environment Agency.	Sept. 2003	
H3 Set date for review of Essex SMP (which will include both estuaries).	Environment Agency.	To be decided (see above)	
H4 Ensure communication and integration between Management Scheme and new Suffolk CHaMP (which includes both estuaries).	English Nature (with help from Suffolk Coast & Heaths Unit).	Sept. 2003	
H5 Consider study to assess impacts on intertidal habitats other than saltmarsh.	Environment Agency.	Sept. 2007	



6 (I) HOUSEBOATS AND BEACH HUTS

There are two sites peculiar to this European Marine Site, where longstanding temporary housing causes particular issues to arise that may not arise at other sites around the country. The first is Pin Mill, a pretty waterside village on the south banks of the River Orwell. Houseboats have been moored here for many years now, and are locally controversial because some people see want them removed, whereas others see them as part of the local character.

There are certain issues that have yet to be considered regarding their potential impacts on the European Marine Site and this section seeks to examine these.

At Wrabness, a cluster of beach huts sit on the foreshore, much-loved by their owners and offering unrivalled views and a great 'getaway' place. They are more sturdily built than an average beach hut, and are more like holiday homes, predominantly used during the summer months. Again, it was felt amongst the Estuaries Management Group that their potential impact on the European Marine Site should be considered and we have examined the issues here.



	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Tendring District Council.		
Location	Around the Wrabness foreshore (shore around grid reference TM 172323)		
Frequency	Beach huts are present all year round, but there is more activity associated with them during summer.		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> • Non-toxic contamination through litter • Toxic contamination through maintenance of huts (e.g. painting). • Noise and visual disturbance by people • Damage to mudflats and saltmarsh by the boats associated with the huts. • Abrasion of neighbouring mudflats by hut owners/visitors 		
Research undertaken			
Research required	None		
Ongoing management	<ul style="list-style-type: none"> • Balhaven Ltd. manage the running of the beach huts. • Beach hut owners have produced a management plan, which specifically refers to the European Marine Site. • An annual beach clean is undertaken by residents at start of season. • Waste plan is in place for moorings. • Beach recharge is undertaken occasionally using sand and gravel from capital dredge work. 		
Gaps in management	Tendring District Council's Plan policy on plotland development (which relates to the beach huts at Wrabness) does not specifically refer to European Marine Site issues.		
New actions required	Relevant authority to implement new actions	Timescale	
11 Planning policies to be reviewed in the Tendring District Local Plan.	Tendring District Council.	Sept. 2003	

	Relevant Authorities	Other Competent Authorities	Other associated organisations
Authorities associated with activity	Babergh District Council. Associated British Ports (ABP) Ipswich.	Ipswich Borough Council.	National Trust (license for provision of facilities on their land).
Location	Pin Mill foreshore (grid reference TM 206380)		
Frequency	All year round		
Potential effects with regards to Reg. 33 advice	<ul style="list-style-type: none"> Noise and visual disturbance to feeding/roosting birds Abrasion through trampling for access Toxic contamination from boat maintenance and possible re-release of toxic chemicals if boats are moved Non-toxic contamination through litter and sewage Abrasion from movement of boats Smothering of mudflats 		
Research undertaken	None known		
Research required	Abrasion issue needs to be looked at by English Nature in condition assessment.		
Ongoing management	<ul style="list-style-type: none"> Permission is unlikely to be granted as the safety of houseboats in this position cannot be guaranteed. Pin Mill task group is in operation and looking at some of the issues (as the houseboats are controversial locally). Individual boats on saltings might not be regulated/managed. Otherwise, most of the management is determined by the Babergh Local Plan, the new draft of which has a new policy re: erection of structure and reducing houseboat area. 		
Gaps in management	The impacts of the houseboats on the Special Protection Area are not currently considered as a part of their management		
New actions required	Relevant authority to implement new actions	Timescale	
I2 The Babergh Local Plan must take into account the Special Protection Area.	Babergh District Council.	Sept. 2004	
I3 Sewage impact study to be carried out by Babergh District Council Environmental Health department, and action to be taken appropriately on the basis of the results.	Babergh District Council.	Sept. 2004	
I4 Take abrasion from houseboats into account in condition assessments.	English Nature	Sept. 2006	

7 SUMMARY OF ACTIONS ARISING

(a) Water inputs and water quality

Activity	Action Number	Action	Lead Authority	Timescale
Agricultural diffuse pollution	A1	Determine lead authority for influencing farming practices.	Environment Agency	By Sept. 2003
	A2	Encourage participation in agri-environment schemes. 95% of farms in Environmentally Sensitive Area to be signed up to schemes by 2004/5.	Environment Agency to ask DEFRA	To have begun by Sept. 2003
	A3	Inform farmers as to good agricultural practice, distribute new booklet on good farming practice to farmers, organise seminar and enforce agricultural regulations.	Environment Agency	Sept. 2003
	A4	Management Group to talk with DEFRA regarding possibility of review of ESA boundaries.	Environment Agency to organise	Sept. 2003
	A5	Environment Agency to review how Water Framework Directive and Nitrates Directive may affect regulation of diffuse pollution (and if Nitrates Directive will cover Stour/Orwell).	Environment Agency	As soon as information is available
Sewage discharges	A6	Shotley Sewage Treatment Works to be upgraded.	Anglian Water	March 2005
Oil spills	A7	Ensure contingency plan and Management Scheme are integrated.	English Nature	Ongoing (through Environment Advisory Group meetings)
Anti-fouling paints	A8	If regulations change regarding use of TBT (which could lead to an increase in use of copper-based anti-foulants), assess results of monitoring and future monitoring requirements.	Environment Agency	Dependent on regulations, report every September to Relevant Authorities group.
	A9	Ensure that list of treatments that comply with Control of Pollution Regs. (1987) & Control of Pesticides Regs. (1986), both issued by DEFRA, are available to boat owners.	Harwich Haven Authority	Sept. 2003

(b) Land-based recreation

Activity	Action Number	Action	Lead Authority	Timescale
Maintenance of rights of way	B1	Ipswich Borough Council to follow Essex County Council's example, consulting English Nature about maintaining rights of way.	Ipswich Borough Council	Sept. 2004
Public access to, and recreation around, the foreshore	B2	Assess where access points and public rights of way coincide with important areas in terms of European Marine Site (feeding & roosting sites, intertidal areas)	Suffolk & Essex County Councils (thro' Suffolk Coast & Heaths Unit)	Sept. 2004
	B3	Survey visitor numbers and activities in relation to important bird areas over winter 2003/4 (coinciding with WeBS surveys)	to assess access points & visitor numbers	
	B4	Include information on conservation issues in the 'Guide to the Essex Way' and guides to the Tendring Circular Walks	Essex County Council ('Essex Way'); Suffolk County Council (thro' Suffolk Coast & Heaths Unit) (Tendring Circular Walks)	Sept. 2003
	B5	Encourage responsible birdwatching through liaison with RSPB & Wildlife Trusts	Suffolk and Essex County Councils (thro' Suffolk Coast & Heaths Unit)	Sept. 2003
	B6	Assess vehicle foreshore access periodically – if cars/ motorbikes begin to access shore via unauthorised points again, review current management measures	All local authorities	Ongoing, report every September.
	B7	Where appropriate, use the provisions of the CRoW Act to deter or prevent third party damage to the SSSI.	English Nature	Ongoing, report every September.
Wildfowling	B8	All Stour and Orwell wildfowling clubs to meet at least annually to review with the BASC and English Nature and to address any issues that may arise. A summary of wildfowling activity will be produced to aid future liaison and strategic management for all parties.	English Nature (helped by Suffolk Coast & Heaths Unit) and BASC.	Sept. 2003
	B9	Orwell Wildfowling clubs to start doing bag returns, using standard forms as per JTG procedure, so that wildfowl return data from the Orwell can be directly comparable with data from the Stour.	English Nature (helped by Suffolk Coast & Heaths Unit) and BASC.	Sept. 2003

(c) Inshore and recreational fishing activities

Activity	Action Number	Action	Lead Authority	Timescale
Baitdigging	C1	Ensure voluntary Code of Practice is more widely distributed and understood.	English Nature (with help from Suffolk Coast & Heaths Unit)	Sept. 2003 Ongoing, report every September. Sept. 2004 Sept. 2004
	C2	Hold discussions with Baitdigging Group as to best management options and success of Code of Practice.		
	C3	Commission monitoring programme.		
	C4	Consideration of options available for management of baitdigging, based on results of monitoring programme.		
Recreational boat angling	C5	Compile database of angling boats and engage in dialogue (to find out more about the sport).	Eastern Sea Fisheries Joint Committee	Sept. 2004

(d) Water-based recreation

Activity	Action Number	Action	Lead Authority	Timescale
Swinging moorings & intertidal moorings (incl. half-tide moorings)	D1	Ensure appropriate consideration is given to the requirements of the Habitats Regulations during laying of new moorings.	Harwich Haven Authority and ABP Ipswich Tendring District Council	Ongoing, report every September. Sept. 2003
	D2	Investigate the need and potential scope for a policy on moorings in the Tendring District Review Local Plan.		
Sailing and motor boats	D3 D4	Re-erect sign at Bradfield about speed limits. Disseminate existing environmental guidance for recreational boat users	Harwich Haven Authority	Sept. 2003 Sept. 2003
Canoeing	D5	Identify local canoe clubs and engage in dialogue, to determine location, frequency and intensity of canoeing activity on the estuaries and to promote the importance of the European Marine Site.	Harwich Haven Authority (through Suffolk Coast & Heaths Unit)	Sept. 2003

(e) Commercial fishing

No new actions

(f) Ports and shipping activities

Activity	Action Number	Action	Lead Authority	Timescale
Maintenance dredging & disposal of dredge spoil	F1	Improve liaison and integration of current research.	Harwich Haven Authority	Ongoing, report every September.
Non-toxic contamination from port activities & cargo handling	F2	Ensure the importance of the European Marine Site is promoted in staff induction training.	Harwich Haven Authority, ABP Ipswich, Port of Felixstowe, Harwich International Port	Sept. 2003
Port maintenance	F3	All ports to ensure that environmental assessments are included in health and safety risk assessments before maintenance programmes can begin.	Port of Felixstowe, Harwich International Port and ABP Ipswich	Sept. 2003

(g) Aviation activity

Activity	Action Number	Action	Lead Authority	Timescale
Military aviation activity	G1	Engage in further dialogue with Wattisham Air Base and act appropriately.	English Nature	Sept. 2003

(h) Flood and coastal defence

Activity	Action Number	Action	Lead Authority	Timescale
Maintenance of coastal defences	H1 H2 H3 H4 H5	Ensure estuaries' European Marine Site status is recognised in the next SMP review. Include the Orwell in the next Essex SMP review. Set date for review of Essex SMP (which will include both estuaries). Ensure communication and integration between Management Scheme and new Suffolk ChaMP (which includes both estuaries). Consider study to assess impacts on intertidal habitats other than saltmarsh.	Environment Agency Environment Agency Environment Agency English Nature (with help from Suffolk Coast & Heaths Unit) Environment Agency	2005 – 2006 Sept. 2003 To be decided (see above) Sept. 2003 Sept. 2007

(i) Houseboats and beach huts.

Activity	Action Number	Action	Lead Authority	Timescale
Wrabness beach huts	I1	Planning policies to be reviewed in the Tendring District Local Plan.	Tendring District Council	Sept. 2003
Boats used for housing and industry at Pin Mill	I2 I3 I4	The Babergh Local Plan must take into account the Special Protection Area. Sewage impact study to be carried out by Babergh District Council Environmental Health department, and action to be taken appropriately on the basis of the results. Take abrasion from houseboats into account in condition assessments.	Babergh District Council Babergh District Council English Nature	Sept. 2004 Sept. 2004 Sept. 2006



8 COMPLIANCE MONITORING PLAN

The Management Scheme is not intended to be a static document – the Relevant Authorities, with the help of the Project Officer, will monitor the progress of the action plan over the coming months and years, to ensure that all action points are carried out successfully.

An annual meeting will take place each September to review the Management Scheme's progress. This enables issues raised at the annual Estuaries Public Forum (held each June) to be taken into account and leaves enough time for any proposed changes to be implemented before the overwintering birds arrive. At this meeting, the Management Scheme will be looked at in great detail. English Nature (and other Relevant Authorities where appropriate) will report back on the condition of the site. Each of the tables in Section 6 will be examined closely.

For each activity, appropriate Relevant Authorities will discuss the Ongoing Management measures, outlining whether or not these are still used, how successful they are and if any problems have arisen, why. They will also discuss progress with the actions listed under 'New actions needed', particularly if any problems have been encountered with regards to meeting the timescales set out.

General reports for the public, regarding progress on the Management Scheme as a whole, will also be made at the annual Stour and Orwell Estuaries Forum, which takes place in June each year, and through the website (www.stourandorwell.org).



9 CONDITION MONITORING PROGRAMME

The ports and English Nature are not currently in agreement as to which of the following statements should open this section:

English Nature are the Relevant Authority with the responsibility for condition monitoring of the site, and regular monitoring will be carried out to establish whether the conservation objectives are being met. The favourable condition table derived from the conservation objectives (included in the Regulation 33 package) outlines the condition in which the site should be maintained.

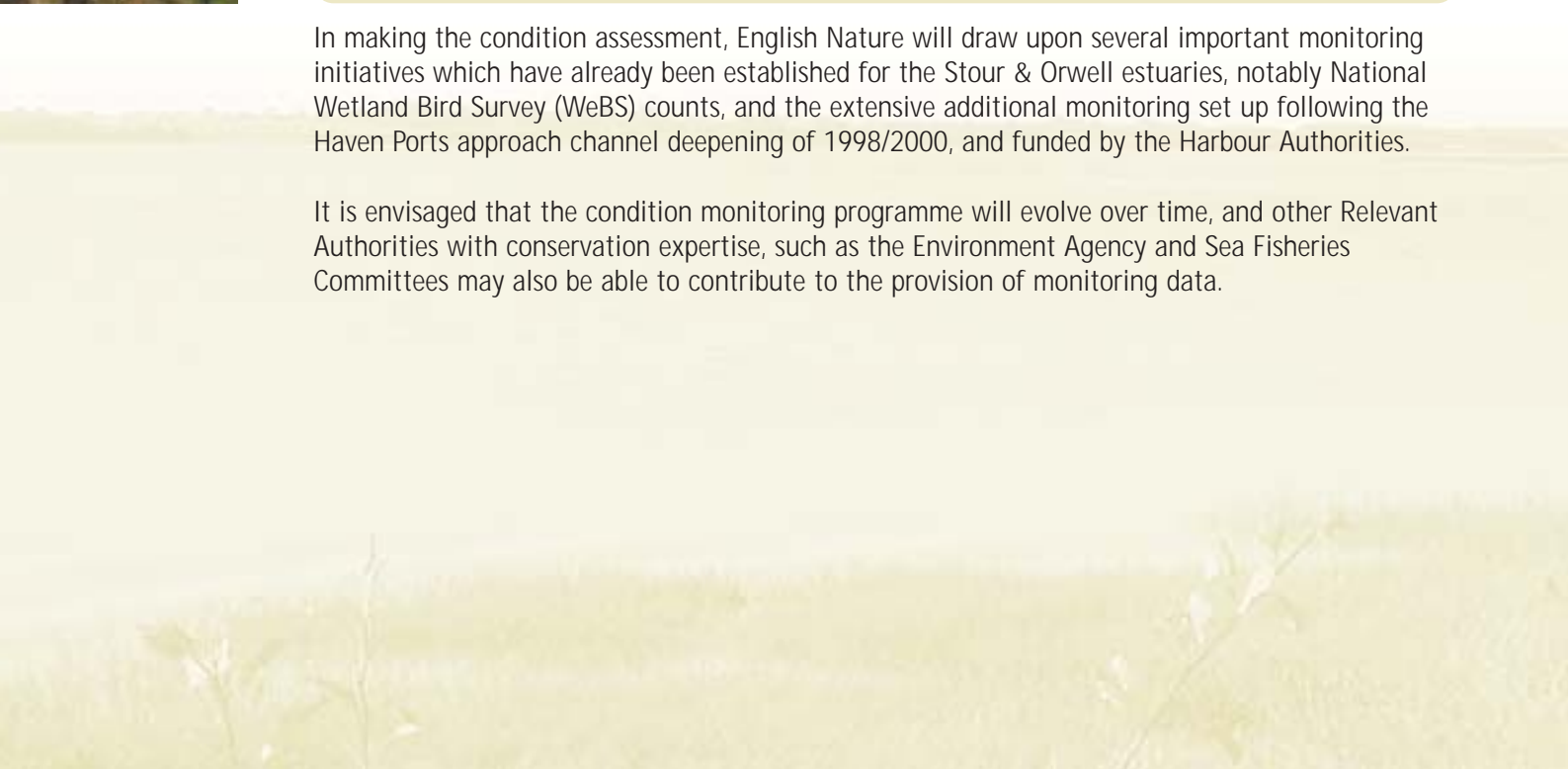
OR

English Nature will regularly monitor the Site to establish whether the conservation objectives are being met. The favourable condition table derived from the conservation objectives (included in the Regulation 33 package) outlines the condition in which the site should be maintained.



In making the condition assessment, English Nature will draw upon several important monitoring initiatives which have already been established for the Stour & Orwell estuaries, notably National Wetland Bird Survey (WeBS) counts, and the extensive additional monitoring set up following the Haven Ports approach channel deepening of 1998/2000, and funded by the Harbour Authorities.

It is envisaged that the condition monitoring programme will evolve over time, and other Relevant Authorities with conservation expertise, such as the Environment Agency and Sea Fisheries Committees may also be able to contribute to the provision of monitoring data.



Periodically and in particular if the conservation objectives are not being achieved, the Management Scheme will be reviewed with a view to adjusting, as necessary, the strategy for meeting the conservation objectives, or the measures taken to implement the strategy.

There is, at present, some uncertainty as to where the onus of proof lies in the demonstration of a link between specific operations and an observed deterioration of the Site and advice is being sought from DEFRA/ODPM.

Any proposed changes to the management of an activity will be considered in light of the precautionary principle and an analysis of their cost-effectiveness.

According to the DETR/Welsh Office guidance on European Marine Sites (4.12), in establishing the extent to which the Management Scheme will need to provide for change, the presumptions in most cases will be for the continuing day-to-day use of the estuary in general and for the existing regulatory scheme to be retained where it does not damage the existing features for which the site is designated. Therefore, changes to the existing management of an activity will only be necessary to avoid deterioration of the conservation interest of the European Marine Site and significant disturbance of the protected species.

When damage to the site is both potentially significant and uncertain, Relevant Authorities should have regard to the precautionary principle in introducing any changes to existing management (DETR Guidance 5.4.11). This means that "where there are real risks to the Site, lack of full scientific certainty should not be used as a reason for postponing measures that are likely to be cost-effective in preventing such damage" (DETR Guidance 5.2.7). Equally, however, the precautionary principle should not be used to prevent existing management actions continuing where there is no significant disturbance to site features.

Where English Nature or a Relevant Authority suspect that the deterioration in the condition of the Site is linked to a particular activity, the onus will be on English Nature and the Relevant Authorities to agree the factors which may be affected by the activity and work together to identify the cause/effect relationship.

This approach may be amended accordingly, subject to future clarification from DEFRA.

The conservation objectives themselves will also need to be reviewed in the light of improved scientific knowledge and practical experience.

English Nature will report to the Joint Nature Conservation Committee on the condition of each interest feature and the site every six years. Monitoring will therefore be based on a rolling six-year timetable.





Table 4 Condition monitoring timetable to be co-ordinated by English Nature

Monitoring issue	Target	Interest feature affected	Monitoring technique	Frequency of reporting to JNCC
Extent & distribution of saltmarsh & intertidal mudflat	No decrease in extent from established baseline, subject to natural change	Annex 1 and migratory birds	Harwich Haven Authority Biotope mapping HHA Bathymetry EN condition monitoring	5 year rolling cycle 5 year rolling cycle 6 year rolling cycle
Vegetation characteristics of saltmarsh	Open, short vegetation required for roosting and feeding	Annex 1 and migratory birds	EN condition monitoring	6 year rolling cycle
Food availability in saltmarsh & intertidal mud	Presence and abundance of marine and intertidal invertebrates, and of soft leaved saltmarsh plants.	Annex 1 and migratory birds	EN condition monitoring	6 year rolling cycle
Disturbance	No significant reduction in numbers, or displacement of birds from an established baseline, subject to natural change.	Annex 1 and migratory birds	WeBS high tide counts WeBS low tide counts Land based recreation monitoring	Monthly Monthly One off study planned
Absence of obstructions to view lines	No increase in obstructions to existing bird view lines, subject to natural change.	Annex 1 and migratory birds	EN condition monitoring	6 year rolling cycle

NB: Please refer to Regulation 33 advice package for full attribute tables



APPENDIX I - LIST OF RELEVANT AUTHORITIES AND THEIR JURISDICTIONS

Authority	Type of authority	Area of jurisdiction
Babergh District Council	District Council	North side of Stour and south/ west bank of Orwell up as far as Belstead Brook.
Ipswich Borough Council	Borough Council and river bed owner (River Orwell)	Both banks of the Orwell, upstream of Bridge Wood on the north/east side and Belstead Brook on the south/west side, to Ipswich
Suffolk Coastal District Council	District Council	North/east side of Orwell, as far up as Bridge Wood, near the Orwell bridge
Tendring District Council	District Council	South side of the Stour
Suffolk County Council	County Council	Whole of Orwell and north side of Stour
Essex County Council	County Council	South side of the Stour
The Port of Felixstowe	Port Authority	Parliamentary limits of port and berths
Harwich Haven Authority	Statutory Harbour Authority	Landguard to Fagbury Point (in the Orwell) to Cattawade Bridge (in the Stour)
Associated British Ports Port of Ipswich	Port Authority	Stoke Bridge to Fagbury
The Environment Agency	Environment protection; Regulatory authority for discharges and other consents	Throughout European Marine Site
English Nature	Government's statutory nature conservation advisor for England (agency of DEFRA). Implements statutory nature conservation duties, including European duties, on behalf of Government.	Throughout European Marine Site
Eastern Sea Fisheries Joint Committee	Local fisheries committee (under the Sea Fisheries Regulation Act 1966) – fisheries management body.	Throughout European Marine Site



APPENDIX II – GLOSSARY

AMP3 (Asset Management Plan 3): The AMP process is the five-yearly planning process that all privatised water companies use to plan investment. The process is governed by OFWAT, the economic regulator. OFWAT receives Business Plans for each AMP period, prior to the period beginning, and sets pricing limits accordingly. The Environment Agency lobbies OFWAT for environmental improvements. AMP3, the current AMP period, lasts from 2000 – 2005. AMP4 will start in April 2005 and end in March 2010.

Annex I Bird Species: The species listed in Annex I of the Birds Directive are the subject of special conservation measures concerning their habitat. These measures ensure the survival and reproduction of the birds in their area of distribution. Species listed on Annex I are in danger of extinction, rare or vulnerable. The only Annex I bird species for the Stour and Orwell Estuaries is the Golden Plover.

Anthropogenic: Originating from human activity.

Anti-fouling paint: Used to prevent 'fouling' (the attachment of organisms) on the hulls of boats. The paint releases small amounts of active substances into the layer of water next to the hull, preventing settlement of organisms. If not used, boats can suffer from reduced manoeuvrability and control, as well as reduced fuel efficiency and some organisms can burrow into paint layers and cause corrosion of the hull.

AONB (Area of Outstanding Natural Beauty): AONBs are created by the Countryside Agency, under the National Parks and Access to the Countryside Act 1949. Their purpose is to conserve and enhance the natural beauty of the area. An AONB is not a statutory authority in its own right but local authorities are required to produce a Management Plan for the AONB, which in the Suffolk Coast & Heaths has been produced through a partnership of statutory authorities and voluntary bodies.

Appropriate Assessment: The assessment of plan or project's implications on the conservation objectives of a European Site. The scope and content of what constitutes an appropriate assessment will depend on the location, size and significance of the proposed plan or project. The conclusions of the assessment should enable the competent authority to ascertain whether the proposal would adversely affect the integrity of the site.

Ballast water: Water taken on by a ship to add weight and increase stability, when the ship has a light load. It is discharged when the ship has a heavy load.

Bathymetric: Pertaining to bathymetry; relating to the measurement of depths, especially of depths in the sea.

Benthos: Those organisms (described as benthic) attached to, or living on, in or near the seabed, including that part which is exposed by tides.

Bioaccumulation: The concentration of fat-soluble chemical substances in the tissues of animals. These can concentrate through the food-web, reaching higher levels in top predators.

Birds Directive (EU Birds Directive): The abbreviated term for Council Directive 79/409/EEC of 2 April 1979 on the Conservation of Wild Birds. This Directive aims to protect bird species within the EC through the conservation of populations of certain birds and the habitats used by these species.

Biochemical Oxygen Demand (BOD): An empirical standardised laboratory test designed to measure the oxygen requirements (demands) of the bacteria which break down the organic matter in a given effluent. It is an approximate measure of biochemically degradable organic matter in a water sample.

Borrowdyke: A ditch created by the removal of spoil for the creation of sea defences. Borrowdykes vary between 1m. to 4m. in width and 6" to over 4 foot in depth. They must be cleared to promote land drainage and can support a variety of habitats (e.g. deep open water, wet reedbed or dry reedbed with scrub).

Coastal Habitat Management Plan (CHaMP): These form an important link in the coastal planning process for managing European Marine Sites and Ramsar sites, ensuring that coastal Shoreline Management Plans (SMPs) and flood and coastal defence strategies are compliant with the Habitats and Birds Directives.

Competent Authority: Any minister, government department, public or statutory undertaker, public body or person holding a public office that exercises legislative powers.

Compliance monitoring: Monitoring undertaken against accepted standards to ensure that agreed or required measures are being followed.

Condition monitoring: Monitoring undertaken against the conservation objectives to ensure that the Site's interest features are attaining favourable condition, as set out in the favourable condition table of the Regulation 33 advice document. For those interest features of which there is little or no knowledge, it involves monitoring to establish a baseline against which future change in the condition of the features can be assessed.

Conservation objective: A statement of the nature conservation aspirations for a site, expressed in terms of the favourable condition that we wish to see the species and/or habitats for which the site has been selected to attain. Conservation objectives for European Marine Sites relate to the aims of the Birds and Habitats Directives.

Contaminant: A substance released anthropogenically (it only becomes a pollutant once it has exerted an adverse biological effect).

CRow Act: The Countryside and Rights of Way Act (2000). This act is in 5 parts. Part I of the Act will create a public right of access to mountain, moor, heath, down and registered common land. This will eventually open up some 1.2 to 1.8 million hectares of countryside for people's enjoyment. Part II of the Act introduces new rights of way legislation which is complex and wide ranging. Part III deals with nature conservation and wildlife protection. Part IV introduces new powers to manage Areas of Outstanding Natural Beauty (AONBs). These include a requirement for local authorities to prepare and publish management plans for their AONB and provide for the establishment of Conservation Boards, where locally supported, to take on the management of an AONB. It will also place a duty on public bodies to have regard to the purpose of AONBs in carrying out their statutory functions. Part V draws together miscellaneous and supplementary material.

DEFRA: The government Department for Environment, Food and Rural Affairs. Formed in 2000 to integrate functions of old MAFF and DETR departments.

Designated shellfish waters: The EU Shellfish Waters Directive (79/923/EEC) sets standards for waters designated for shellfish and aims to ensure a suitable environment for their growth.

DfT: Department for Transport. Government department dealing solely with transport issues (formerly dealt with under the old DTLR).

Dissolved oxygen: The concentration of free molecular oxygen, usually expressed as mg/litre, parts per million or % saturation. A commonly used indicator of water quality.





Disturbance: In the context of this Management Scheme, disturbance refers to the effect of any activity which results in the instinctive reaction of birds, causing them to be displaced, or to stop feeding or behaving normally.

DTLR: The government Department for Transport, Local Government and the Regions, which has now been broken up into two separate departments – Department for Transport (DfT) and The Office of the Deputy Prime Minister (ODPM).

EIA (Environmental Impact Assessment): An EIA is a statutory procedure for undertaking an assessment of a project's likely significant environmental effects. This procedure helps to ensure that the predicted effects, and scope for reducing them, are properly understood by the local planning authority or Secretary of State when determining a planning application. In the first instance the local planning authority will consider the EIA in parallel with the planning application. An EIA is not necessarily sufficient to be used as an appropriate assessment for plans and projects.



Environmentally Sensitive Area (ESA): The ESA scheme was introduced by MAFF in 1987 to pay farmers for maintaining or adopting agricultural methods which promote the conservation and enhancement of the countryside in areas of high wildlife, landscape or historic value. The Suffolk River Valleys ESA includes the north bank of the River Orwell between Levington and Trimley, and the south bank between Shotley Point and Pin Mill. The Stour is also included, but only upstream of the European Marine Site.

Estuaries Management Group: In the context of the Stour and Orwell Estuaries, this refers to the group set up in the mid-1990s to write the voluntary Estuaries Management Plan (published 1996). Most of the site's Relevant Authorities are members, along with NGOs such as the Suffolk Wildlife Trust and user groups such as the Royal Yachting Association. Although only the Relevant Authorities group has written this Management Scheme, the wider Estuaries Management Group has also had some valuable input.



European Marine Site: A European Site which consists of, or in so far as it consists of, areas covered intermittently or continuously by seawater.

European Site: A classified Special Protection Area, designated Special Area of Conservation, site of Community Importance (selected as a candidate SAC, adopted by the European Commission but not yet designated), candidate Special Area of Conservation (in England only), or a site hosting a priority species in respect of which Article 5 of the Habitats Directive applies.

Favourable condition: A range of conditions for a natural habitat or species at which the sum of the influences acting upon that habitat or species are not adversely affecting its distribution, abundance, structure or function within an individual Natura 2000 site in the long term. The condition in which the habitat or species is capable of sustaining itself on a long-term basis.

Favourable conservation status: A range of conditions for a natural habitat or species at which the sum of the influences acting upon that habitat or species are not adversely affecting its distribution, abundance, structure or function throughout the EC in the long term. The condition in which the habitat or species is capable of sustaining itself on a long-term basis.

FEPA licensing: DEFRA strictly controls waste disposal at sea through a licensing system under the Food and Environmental Protection Act (FEPA) 1995. In the context of this Management Scheme, references to FEPA specifically concern the disposal of dredge spoil. Before issuing a disposal license, a full assessment is made of the effect the deposit may have on fish, water quality and marine life. A license is only issued if there will be no significant risk of damage to the marine ecosystem, no risk to human health and provided there would be no undue interference with other users of the sea. DEFRA policy is that dredged material should be used, wherever practicable, in a beneficial way, in preference to disposal at sea.

Feature: A conservation feature (natural or semi-natural) for which a European site has been selected. This includes any population of a bird species for which an SPA has been classified under the Birds Directive.

Foreshore: The part of the shore between high and low tide marks.

Geographical Information System (GIS): A system for capturing, storing, checking, integrating, manipulating, analysing and displaying digital data which are spatially referenced to a geographical region.

Habitat: The place in which a plant or animal lives.

EU Habitats Directive: The abbreviated term of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora. It is the aim of this Directive to promote the conservation of certain habitats and species within the European Union.

'Habitats Regulations': The Conservation (Natural Habitats, &c.) Regulations 1994 transpose the requirements of the Habitats Directive into national law and provide for the conservation of SACs and SPAs in Great Britain.

Haven ports: Collective name for the Port of Felixstowe, Harwich International Port, Harwich Navyyard, Mistley Quay and Forwarding Co. and ABP (Ipswich).

Hydrological: Of the properties, distribution, and effects of water on the earth's surface, in the soil and underlying rocks, and in the atmosphere.

Imposex: An abnormality in which male sexual characteristics are imposed on the genital systems of females. The female develops a penis, which may block the genital opening so that egg capsules cannot be laid, sometimes causing reproductive failure and ultimately death.

Infauna: Animals living in the sediment.

Interest feature: A natural or semi-natural feature for which a European Site has been selected. This includes any population of a bird species for which a site has been selected under the Birds Directive.

Intermittent discharges (sewage): An intermittent discharge occurs typically from storm management facilities at sewage treatment works and from points on the sewerage system. These discharges are ephemeral and usually consented by the Environment Agency. There are three types of intermittent discharge: (1) Combined sewer overflow (CSO), where a sewer containing sewage and storm water overflows due to heavy rain (this can happen at sewage treatment works too). (2) Emergency overflow, where sewage is spilled to the environment due to power or plant failure. (3) Storm discharge, where a storm sewer discharges to the environment during wet weather.

Intertidal: Of or being the region between the high tide mark and the low tide mark.

LEAP (Local Environment Agency Plans): The Agency's integrated local management plans, used to identify, assess, prioritise and hopefully solve, local environmental issues or problems. Many issues are tackled in partnership with the local community and other organisations. The actions aim to bring about environmental improvements to maximise benefits for the local environment and to deliver sustainable improvement. For each LEAP, a consultation report has been followed by an action plan and then a series of annual reviews.

Management Scheme: The framework established by the Relevant Authorities at a European Marine Site under which their functions (including any power to make bye-laws) are exercised so as to secure in relation to that Site, compliance with the requirements of the Habitats Directive





MARPOL: The MARPOL Convention is the main international convention covering prevention of pollution of the marine environment by ships from operational or accidental causes. It is a combination of two treaties adopted in 1973 and 1978 respectively and updated by amendments through the years. The combined instrument is referred to as the International Convention for the Prevention of Marine Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78), and it entered into force on 2 October 1983 (Annexes I and II). The Convention includes regulations aimed at preventing and minimising pollution from ships - both accidental pollution and that from routine operations - and currently includes six technical Annexes.

Mean Low Water mark: The line on a chart or map which represents the intersection of the land with the water surface at the average elevation of low water.

Migratory: Removing regularly or occasionally from one region or climate to another. UK estuaries are important stopover grounds for birds on annual migratory routes. Many birds, which breed elsewhere, overwinter on British estuaries. Other birds use them as stopping-off points as they head to more southerly areas for the winter, calling in both in spring and autumn as they pass by.

Mudflat: Flat unvegetated wetlands subject to periodic flooding and minor wave action.

Natura 2000: The European network of Special Areas of Conservation and Special Protection Areas

Nitrates Directive: The UK adopted the EC Nitrates Directive (91/676/EC) in 1991. This is an environmental measure designed to reduce water pollution by nitrate from agricultural sources and to prevent such pollution in the future. The UK has designated areas draining into ground and surface waters where nitrate concentrations exceed or are likely to exceed 50mg/litre as Nitrate Vulnerable Zones (NVZs), within which farmers must apply agricultural Action Programme measures to reduce nitrate leaching. Following a range of detailed consultations, 66 NVZs were originally designated in England in 1996, covering an area of some 600,000 hectares. Following further consultation, NVZ areas will increase during 2002.

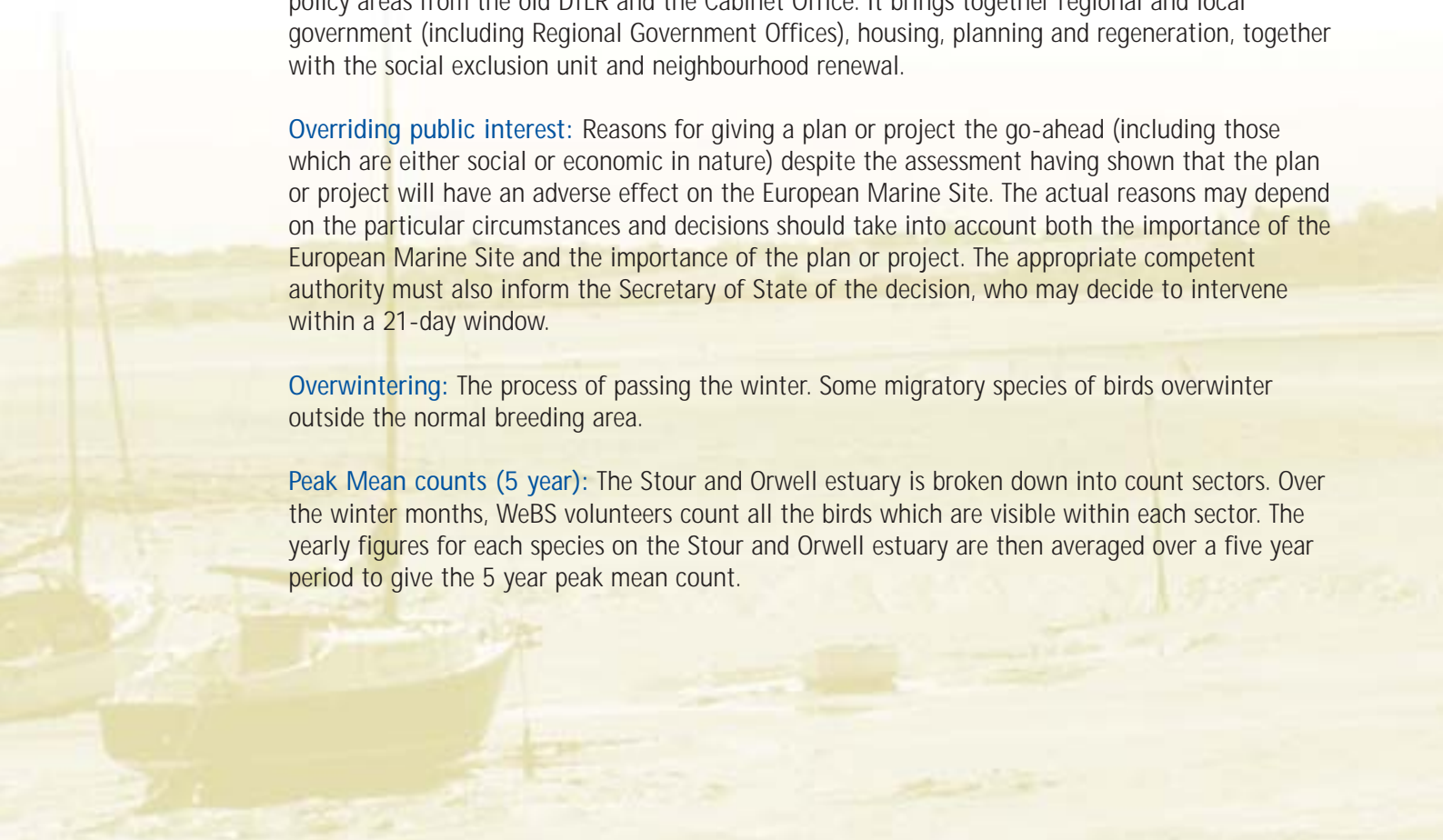
Non-native species: A species which has only been able to colonise an area through anthropogenic interference.

ODPM: Office of the Deputy Prime Minister. The Government department with responsibility for policy areas from the old DTLR and the Cabinet Office. It brings together regional and local government (including Regional Government Offices), housing, planning and regeneration, together with the social exclusion unit and neighbourhood renewal.

Overriding public interest: Reasons for giving a plan or project the go-ahead (including those which are either social or economic in nature) despite the assessment having shown that the plan or project will have an adverse effect on the European Marine Site. The actual reasons may depend on the particular circumstances and decisions should take into account both the importance of the European Marine Site and the importance of the plan or project. The appropriate competent authority must also inform the Secretary of State of the decision, who may decide to intervene within a 21-day window.

Overwintering: The process of passing the winter. Some migratory species of birds overwinter outside the normal breeding area.

Peak Mean counts (5 year): The Stour and Orwell estuary is broken down into count sectors. Over the winter months, WeBS volunteers count all the birds which are visible within each sector. The yearly figures for each species on the Stour and Orwell estuary are then averaged over a five year period to give the 5 year peak mean count.



Plan/project: Any proposed development that is within a Relevant Authority's function to control, or over which a Competent Authority has a statutory function to decide on applications for consents, authorisations, licences or permissions.

Pollutant: A substance that occurs in the environment, at least in part as a result of anthropogenic activities, which has a deleterious effect on living organisms.

Port Waste Management Plans: Consist of a report to Government on the planning process and a description (and location map if relevant), including cost, of the waste reception facilities of each port. All ports, harbours, terminals, installations, marinas, piers and jetties in the UK should plan how they provide waste reception facilities. Exemptions will normally only be granted to small non-commercial harbours with a low level of use where the cost of producing a plan would considerably outweigh any environmental benefit. Port authorities should ensure that terminals within their authority also produce plans in accordance with these guidelines. Preliminary Guidance was given in Merchant Shipping Notice No. M.1659, which has been updated in Merchant Shipping Notice No. MSN.1709. Powers have been taken in the Merchant Shipping and Maritime Security Act 1997 to make this process mandatory through regulation. These regulations require ports to follow the guidelines in these plans. The penalty for not doing so is £5000.

Ramsar Convention (1971): The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an intergovernmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 131 Contracting Parties to the Convention, with 1150 wetland sites, totaling 96.3 million hectares, designated for inclusion in the Ramsar List of Wetlands of International Importance.

Regional Planning Guidance (RPG): RPG provides a clear strategy for the sustainable development of a region, supporting urban renaissance, economic growth and the housing needs of all sectors of the community, while protecting the environment. Its primary purpose is to set out the regional framework for development plans and it is also a material consideration that must be taken into account in relevant decisions on planning applications. RPG for the Stour and Orwell area is provided by two documents. The River Orwell and the north bank of the Stour are covered by RPG6 (Regional Planning Guidance for East Anglia) (RPG6), which covers the counties of Cambridgeshire, Norfolk and Suffolk and was published by the Secretary of State for the Environment, Transport and the Regions on 23 November 2000. However, the south side of the Stour falls within the ambit of RPG9 (Regional Planning Guidance for the South East, March 2001). Both documents uphold the advice given by Planning Policy Guidance Note 9 (PPG9) which protects the European nature conservation designations which apply to both estuaries. However, RPG for this area is currently being revised and the two RPGs (6 and 9) will be replaced by one RPG (14, for the East of England) which will include both sides of both rivers.

Relevant Authority: The specific competent authority which has powers or functions which have, or could have, an impact on the marine environment, or adjacent to, a European Marine Site.

Review of consents: Regulation 50 of the Habitats Regulations requires a competent authority to undertake a review of any existing consent or permission to which Regulation 48(1) would apply if it were being considered as of the date on which the site became a European Site. Where a review is required under these provisions, it must be carried out as soon as reasonably practicable. This will have implications for discharge and other consents, which will need to be reviewed in light of these objectives and may mean that lower targets for background levels of contaminants etc. will need to be set.

Rights of way: Highways (which can include anything from footpaths to bridleways to roads) along which any member of the public has a right to pass and re-pass at any time.

Ro-ro: A ferry designed for road transport links, onto which cars and lorries can drive on through one end and drive off again at the destination through the other end of the ferry.





Roost: A place where birds regularly settle in order to sleep.

Saltmarsh: A community of salt tolerant plants growing on intertidal mud in brackish conditions in sheltered estuaries and bays.

Secondary treatment: Secondary treatment is a biological purification stage in which settled sewage from primary sedimentation is digested by microorganisms, mainly bacteria, removing up to 99% of bacteria and 90% of enteroviruses. The Government announced in September 1998 that secondary treatment will be the minimum requirement for all significant coastal discharges (serving populations of greater than 2000) in England and Wales.

Sediment analysis: Using grab samples or boreholes, samples of sediment are taken which may, for example, be analysed in terms of particle size and cohesiveness, concentration of contaminants, or organic matter content.

Sensitivity: The intolerance of a habitat, community or individual species to damage from an external force.

Shoreline Management Plan (SMP): A plan which identifies appropriate lines for coastal defence, based on land use and coastal processes.

SSSI (Site of Special Scientific Interest): A designation given to sites considered to be of nature conservation and/or geological importance in a national context.

Special Protection Area (SPA): A site classified under the Birds Directive by Member States, where appropriate steps are taken to protect the bird species and their habitats for which the Site is classified.

Structure plan: Applies the Government's Regional Planning Guidance to a county, sets out key strategic policies and provides a strategic framework for Local Plans, which are prepared by District Councils, and Minerals and Waste Plans, which are produced by County Councils. Structure Plans are required to be set within the context of sustainable development objectives. They do not identify specific sites for development, but indicate the general location for major and strategic developments likely to have a significant effect on the area, whilst also indicating broad areas where restraint will be applied to development.

There are 2 structure plans relevant to this area. In Essex the current structure plan is the Essex and Southend-on-Sea replacement Structure Plan. It was adopted in April 2001, but is currently being reviewed with a consultation on 'spatial options' due to being in December 2002. The Suffolk Structure Plan was adopted in June 2001.

Sub-feature: An ecologically important sub-division of an interest feature.

Sustainable: (in the context of this Management Scheme) The use of resources to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Tributyltin (TBT): A chemical incorporated into anti-fouling paints, which prevents the attachment and growth of organisms which would otherwise colonise the boat hull's surface. TBT is toxic to marine life and has been linked to imposex in dog whelks (*Nucella lapillus*).

Turbidity: The measure of light penetration through the water column.

Vulnerability: The exposure of a habitat, community or individual of a species to an external factor to which it is sensitive.

Wader: A name given to the group of birds which have relatively long legs and beaks and spend most of their time in wetland areas in winter. Most avoid swimming and move up and down the shore with the tides.

Water Framework Directive (WFD): Directive 2000/60/EC. A new EU Directive which will introduce a single system of water management through river basin management.

WeBS Counts: Wetland Bird Survey. A collaborative national surveillance scheme of the UK's waterfowl, based on counts undertaken once per month outside of the breeding season.

Wetland: Wetlands are areas where water is the primary factor controlling the environment and the associated plant and animal life. They occur where the water table is at or near the surface of the land, or where the land is covered by shallow water.

Wildfowl: Birds of the Anseriformes order (ducks, geese and swans).

Wildlife and Countryside Act 1981: the principle mechanism for the legislative protection of wildlife in Great Britain. The Wildlife and Countryside Act is divided into four parts. Part I is concerned with the protection of wildlife, Part II relates to the countryside and national parks (and the designation of protected areas), Part III covers public rights of way and Part IV deals with miscellaneous provisions of the Act

APPENDIX II – GLOSSARY

A list of selected publications relevant to these estuaries, including those referred to in the text, which may be of interest to readers and help to explain some of the issues surrounding activities taking place on the Stour and Orwell estuaries.

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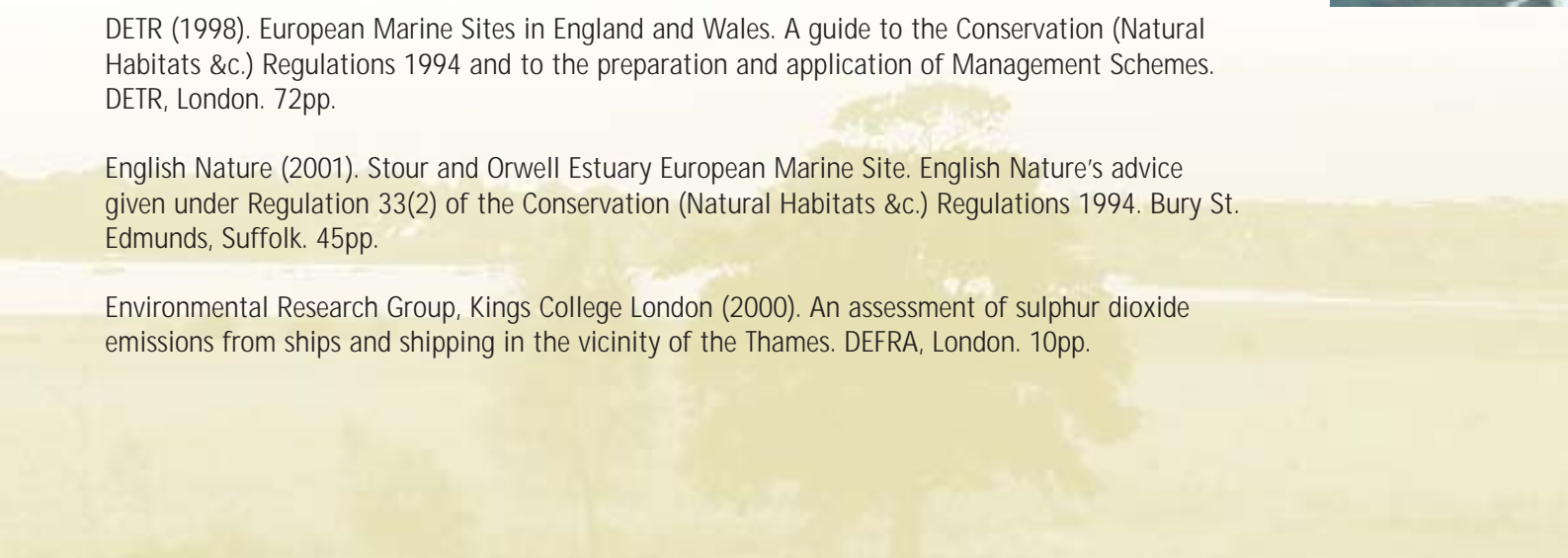
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APPENDIX IV – FURTHER INFORMATION ABOUT THE SITE'S FEATURE BIRD SPECIES

Shelduck (*Tadorna tadorna*)

These sea ducks nest in burrows, often among sand dunes. Males and females are very similar, with chestnut breast-bands and green heads, but the male has a very conspicuous knob, like a mute swan's, above its bill. Shelduck usually collect in estuaries in winter time, but in recent years, some have stayed in Britain all year round to moult, rather than in the Wadden Sea with the rest of the NW European population. They feed throughout the estuaries, particularly in the upper reaches of the Stour and on the softer substrates of the middle reaches of the Orwell. In line with a national trend, numbers on the Orwell decreased between 1995 and 2000, although the bigger Stour population remained fairly steady.

Dark-bellied Brent Goose (*Branta bernicla*)

The only strictly maritime goose species, the highly gregarious Dark-Bellied Brent Goose comes to eastern Britain in winter from the arctic breeding grounds in Russia. This small, duck-sized goose rests on the water and usually feeds on eel grass (*Zostera* spp.) at low tide, but this species has died back around most of the estuaries. It also feeds on saltmarsh, particularly newly-established saltmarsh, which provides its preferred plant species such as Glasswort (*Salicornia* spp.). Favourite feedings sites are Copperas Bay (on the Stour) and on the arable fields next to Jacques Bay. Additionally, they feed and roost on marshy grassland outside the European Marine Site.

The species is subject to an International Action Plan. Nationally, numbers are increasing (subject to some fluctuations), although they have remained fairly steady on the Stour and Orwell Estuaries. Numbers are fairly evenly distributed between the two estuaries, with slightly more on the Stour.

Redshank (*Tringa totanus*)

This moorland breeder generally arrives in winter, although non-breeding birds and some breeding pairs can be found on the estuaries over the summer. It is grey-brown and has conspicuous red legs and a penetrating call. In flight it has a distinctive white trailing edge to its wing. Numbers have remained fairly steady across Great Britain since the 1970s. It is found throughout the estuaries, particularly in the upper reaches of the Stour around Mistley.

Dunlin (*Calidris alpina*)

Similar to the Redshank, this species usually breeds on moorlands and mountains, but can be seen all year round on the estuaries due to the presence of non-breeding individuals and some pairs which breed on coastal marshes. In summer, they have a black breast patch, but are hard to distinguish from other waders in winter. They flock in large numbers and fly in close formations. They feed all over the estuaries, preferring muddy areas up the Orwell.

Dunlin are highly mobile, resulting in large fluctuations in numbers at individual sites, particularly in response to changes in the weather. It has been suggested that their numbers in Britain are correlated to the number of sleet or snow days in Britain during the winter. In mild winters, they may not arrive in Britain in such large numbers, remaining at more easterly locations. Numbers have been fairly steady since the 1970s, but there has been a national decline over the past 11 years, which was particularly noticeable on the Orwell. However, numbers on the Stour have remained steady.

Ringed Plover (*Charadrius hiaticula*)

A small, less sociable shore bird, with distinctive behaviour, running rapidly around the shore and bobbing up and down nervously if approached. Found all year round, it nests in a depression in sand or shingle and has well-camouflaged eggs. Pairs nest at Landguard Point Nature Reserve in summer.

Numbers in Britain started to increase in the mid 1970s, but have been in decline since the late 1980s and are now back to their original 1970 levels. They favour sand and shingle shores, especially Pond Ooze, Levington and Freston on the Orwell, and Copperas Bay sea defence bank and Bathside Bay on the Stour.





Turnstone (*Arenaria interpres*)

A bird which usually prefers weed-covered rocky shores, it can be found on the estuaries in the winter, when its plumage is largely black and white, although non-breeding individuals can sometimes be seen in the summer when they have some chestnut brown in their plumage too. It feeds by turning over stones looking for food (hence the name!), so prefers stony areas such as the lower Orwell. It can sometimes be seen roosting on moored boats on the Orwell. Numbers in Great Britain have been in steady decline since the mid-to-late 1980's.

Grey Plover (*Pluvialis squatarola*)

It spends the winter feeding throughout the Stour and Orwell. The British population increased between 1970 and 1995 but then started to decrease. However, numbers on the Stour have remained relatively stable in recent years, and on the Orwell the numbers doubled between the winters of 1998/1999 and 1999/2000.



Black-Tailed Godwit (*Limosa limosa*)

Black-Tailed Godwits overwintering in Britain are part of the Icelandic breeding race *islandica*. Their numbers have historically varied with the climate. A quarry species in some countries, they are now the subject of an EU conservation action plan. In winter, they may seek more inland sites when there is bad weather, in order to escape high winds. The colder the winter, the further west they overwinter, so in mild winters, numbers in Britain may be lower. Although numbers in Great Britain have slowly risen since the 1970, numbers recorded in WeBS counts in both the Orwell and the Stour have decreased in recent years. They prefer the upper reaches of the estuaries.

Golden Plover (*Pluvialis apricaria*).

A gregarious bird with tendencies for aerial manoeuvres, this species overwinters here, feeding extensively on fields of winter cereals. Farmland habitat outside the European Marine Site is important for its survival, and this habitat is protected under the SSSI designation. The Relevant Authorities must give due regard to this habitat being damaged by activities taking place within the European Marine Site. It does not usually feed on the estuaries, but it does use them for roosting, particularly on the Stour's saltmarsh and on the intertidal mudflats at Mistley at low tide, for Golden Plover favour the firmer substrates found there.



Milder winters can result in faster growth of winter cereals, producing a crop which is too tall for Golden Plover to feed on. In these circumstances, they have been known to feed on the Stour's mudflats, although probably not on the Orwell's mudflats. This intertidal feeding could be an increasing phenomenon.

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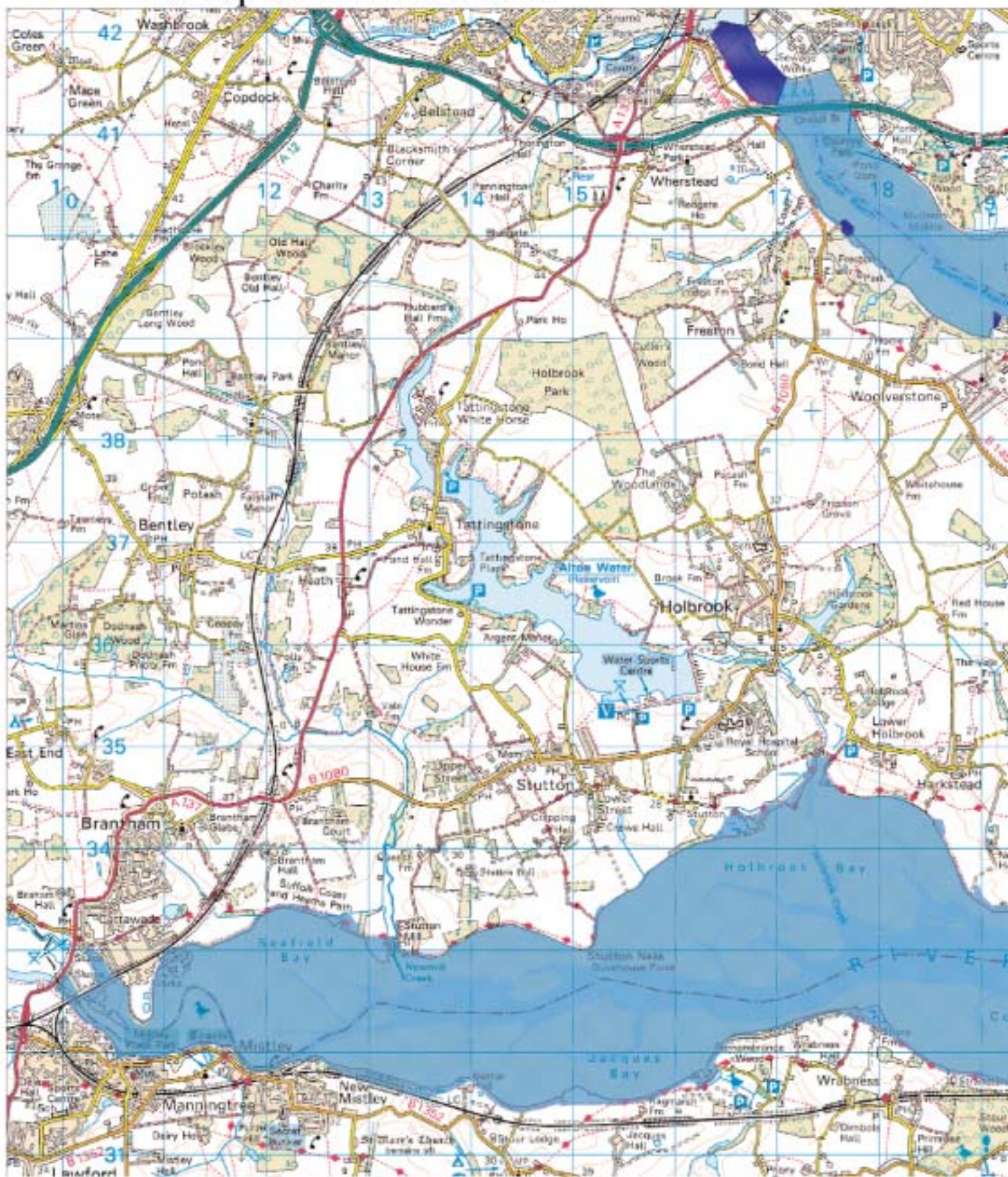
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Stour & Orwell Estuaries European Marine Site



Scale 1:100 000 approx.

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 European Marine Site

Dark blue areas indicate proposed extensions to the European Marine Site which are currently under consultation



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