

# Mudflats

## 1 Definition

Mudflats are sedimentary intertidal habitats found in estuaries and other sheltered areas. The sediments generally consist of silts and clays with a high organic content. Mudflats frequently occur as part of the natural sequence of habitats between the sublittoral zone and vegetated saltmarshes. Like most other intertidal areas they dissipate wave energy and thus have an important role to play in reducing the risk of erosion damage to saltmarshes and coastal defences, and of tidal flooding in low-lying coastal areas.

Mudflats are typically highly productive habitats supporting a high biomass but relatively low species diversity with few rare species. The precise nature of the biota reflects both the prevalent physio-chemical conditions and the degree of enrichment by, for example, sewage pollution.

Mudflats are very important habitats that support huge numbers of birds and fish. They provide both feeding and resting areas for internationally important populations of waders and waterfowl and also act as nursery areas for flatfish. The main importance of the mudflats to wildfowl and waders derives from their high productivity and consequent high biomass of prey items. They are also important as resting areas, a function that is enhanced by their relative inaccessibility and freedom from disturbance.

## 2 Current status

### 2.1 National

The total UK estuarine resource has been estimated as c. 588,000 ha, of which 55% is intertidal area, mostly mud and sandflats with a lesser amount of saltmarsh. Intertidal flats cover about 270,000 ha.

### 2.2 Local

There are approximately 3523 ha of mudflat within Suffolk, about 1.3% of the national resource. The table below summarises the areas of mudflat within the county.

Estuary	Total mudflat Area (ha)
River Blyth	214
River Deben	489
River Alde/Ore	541
River Butley	57
River Stour <sup>1</sup>	1534
River Orwell	663
<b>Total</b>	<b>3523</b>

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<sup>1</sup> The River Stour is partly in Suffolk and partly in Essex, but here figures for the entire estuary are included.

### **3 Current factors affecting mudflats in Suffolk**

Sea level rise; this problem is aggravated by the gradual sinking of south eastern regions of the country caused by isostatic tilt of the UK mainland. This process is predicted to occur at a rate too rapid for mudflat formation to keep pace with. Land claim, for urban and transport infrastructure and industry has removed about 25% of Great Britain's estuarine intertidal mudflats.

- Discharges from agriculture, industry and urban areas can create abiotic areas or produce algal mats, which may affect invertebrate communities living within mudflats.
- Coastal defence works, port development and dredging of shipping lanes may be affecting sediment cycles. Sediments are vital to the build up of mudflat.
- Fishing and bait digging can have an adverse impact on community structure and substratum. Suction dredging for shellfish may have significant impacts on important predator populations.
- Human disturbance affects bird populations' roosting and feeding areas.
- The introduction of non-native species such as cord-grass *Spartina anglica* has vegetated some upper-shore mudflat areas with important ecological consequences.
- Ownership of mudflat can have an influence on their management for conservation purposes. Much of Suffolk's mudflat habitat is owned by the Crown Estate.

### **4 Current Action**

#### **Legal Status**

- The Environment Agency (EA) has a statutory duty to further conservation where consistent with purposes of enactments relating to their function. Suffolk's mudflats are protected the following designations; Alde-Ore Estuary SSSI, Deben Estuary SSSI, Minsmere-Walberswick Heaths and Marshes SSSI, Orwell Estuary SSSI, Stour Estuary SSSI (also a Special protection area (SPA) and wetland of International Importance, under RAMSAR).

#### **Management, research and guidance**

- The Alde/Ore, Blyth and Deben Estuaries have been assessed by the EA with the aim of developing a long-term strategic plan for flood defence. The EA concede that there are likely to be further losses of current mudflat habitat, whichever management plan is initiated for these estuaries. They accept their statutory obligations under the EU Habitats Directive and UK Biodiversity Action Plan to maintain and enhance the area and quality of saltmarsh habitat. If sea levels rise as predicted, maintenance of mudflat at present levels would require managed retreat schemes, as accretion of new sediment is unlikely to keep pace with rapid erosion.
- Local government planning guidelines identify the consultation required on wetland habitat development. The publications *Strategy for Flood and Coastal Defence* (MAFF/WO, 1993) and *Towards Best Practice for Coastal Zone Management* (Department of the Environment, 1996) also consider mudflat habitats in the light of proposed developments.
- Stour-Orwell Scheme of Management (European Marine Site).

## 5 Action Plan Objectives and Targets

1. **Maintain total extent of habitat (3523 ha in 2006)**, there should be no net loss subject to natural change by 2010. This takes account of the dynamic nature of the habitat.
2. **Expand** their extent to 1992 levels (thus aim to increase by 50ha), by 2015, to offset any losses since then (year of adoption of Habitats Directive) due to a gradual squeeze.
3. **Achieve condition**, achieve favourable or recovering condition, by appropriate management **XX**, of mudflat systems currently in unfavourable condition by 2015.

## 6 Proposed Action with Lead Agencies

Action	Date	Partners
<b>POLICY AND LEGISLATION</b>		
Ensure that mudflats of nature conservation importance are granted appropriate designation.	2007-2011	NE, SCC, SWT
Ensure the implementation of more environmentally sensitive coast protection measures through the Shoreline Management Plan and Suffolk Coast and Heaths Management Strategy.	2007-2011	EA, SCHU, SCDC, WDC, BDC
Investigate opportunities for mudflat creation as part of local flood defence schemes.	Annual	EA, DEFRA
Ensure that nature conservation interests and issues are fully represented in Local Development Frameworks and Community strategies.	2007-2011	SCDC, WDC, BDC, SCHU
<b>SITE SAFEGUARD AND MANAGEMENT</b>		
Ensure that, as far as possible, coastal defence or other construction works avoid any disruption of coastal or other natural processes, which might lead to the loss of mudflat.	Annual	EA, NE, SCDC, BDC, WDC, SCHU
Consider available mechanisms for the creation and management of mudflat when developing strategies for the management of coastlines.	On-going	EA, NE, SCDC, BDC, WDC, SWT, RSPB
<b>RESEARCH AND MONITORING</b>		
Identify suitable sites for creation of mudflat habitat. Complete study into regulated tidal exchange and seek sites for practical demonstration.	On-going	EA, NE, SCDC, WDC, BDC, SWT, RSPB, SBRC

Carry out a wildlife survey of mudflats, including NVC mapping, invertebrate survey and breeding and roosting birds. Pass all information to SBRC.	2007-2011	NE, SWT, RSPB, Local specialists, EA, SBRC
Collect information on changes in the extent and quality of mudflat resource in Suffolk.	2007-2011	EA, NE, SWT
Develop the use of remote sensing techniques and GIS to help monitor and predict the rate and extent of change.	2007-2001	NE, EA, SBRC
<b>ADVISORY</b>		
Encourage the appropriate management of mudflat through the dissemination of guidance material and advice, and information on grants/schemes, to key organisations and landowners and managers.	2007-2011	SCHU, EA, NE, DEFRA, FWAG, SWT, RSPB, NT
Promote and develop certain sites as demonstrations of successful saltmarsh management and creation, e.g. RSPB at Havergate Island and National Trust at Orfordness.	2007-2011	RSPB, NT, SWT
Maintain local or regional links to technical experts on the relationships between mudflat, nature conservation and flood defence.	2007-2011	EA, NE, SWT, RSPB
Encourage coastal defence management partnerships to participate in the implementation of the plan, emphasising mudflat as a flood defence resource.	2007-2011	EA, NE, SWT, RSPB, SCDC, WDC, BDC
<b>COMMUNICATIONS AND PUBLICITY</b>		
Raise public awareness of the nature conservation importance, wildlife, and mobile nature of mudflats and their value for a variety of interests including coastal processes, flood defence, fisheries and amenity and recreation.	2007-2011	SCHU, EA, NE, SWT, RSPB, DEFRA

### Monitoring of progress:

Reported annually on the UK BAP reporting system BARS Biodiversity Action Reporting system.

### Consultation:

Organisations that have been consulted regarding this plan and have agreed to aim to deliver their organisations commitments:

RSPB Ian Paradine  
Natural England John Jackson and Darren Kidney  
Suffolk County Council Sue Hooton  
SWT Dorothy Casey  
Suffolk Biological Records Centre (SBRC) Martin Sanford  
Suffolk Coasts and Heath Unit Simon Hooton  
Environment Agency Julia Stansfield  
National Trust Grant Lohoar

Waveney District Council Sara Nicholls  
Suffolk Coastal District Council John Davies  
Babergh District Council Peter Berry  
FWAG Diane Ling