

The detailed planning work for the coastal realignment at Abbotts Hall was undertaken by the Environment Agency but the Trust, as landowner, had to obtain the necessary permissions before the project could go ahead. This fact sheet outlines the various consents that a landowner would require to undertake a similar scheme.

**Construction works**

Before the old sea wall could be breached several pieces of construction work were needed. Firstly, there were the spur sea walls at the eastern and western borders of the farm to protect the neighbouring properties. Secondly new creek systems were needed to promote the formation of new saltmarsh. Thirdly the breaches in the sea wall must be excavated allowing the tidal flooding of former arable land. A fourth item was the construction of a freshwater protection bund for an existing pond providing habitat for great crested newts (a protected species) and the construction of a new freshwater lake to compensate for the loss of ponds that were likely to become saline or brackish. This required the excavation of the lake site and the construction of a protective dam wall to be achieved by raising the height of a farm track. The track to the Ship Lock was also to be raised to maintain access to the old sea wall and preserve this interesting feature of the site. The final construction items were four viewing hides for visitors and a timber jetty to replace the old slipway.

**Monitoring and surveys**

Monitoring was carried out by the Environment Agency, English Nature and the Essex Wildlife Trust for 3 years so that the scheme could be designed to achieve the desired results and to provide a baseline for determining its effects. Following the realignment a further 5-year monitoring programme is being undertaken to assess the effects and provide information for the design of future schemes.

Hydrodynamic monitoring included depth measurements (bathymetry) in Salcott Channel and the creek network, water levels and currents, suspended sediments, salinity, temperature and water quality. After the realignment this was extended to include the flooded area and impacts on the existing saltings. Important factors include flow patterns and speeds, sediment movements, changes in surface levels, and colonisation by vegetation.

Biological monitoring covered the flora and fauna of intertidal, terrestrial, freshwater and brackish habitats, including Biodiversity Action Plan (BAP) and statutorily protected species. Species monitored included reptiles, great crested newts, borrow dyke invertebrates including the lagoon sea slug, and mammals such as water voles and badgers.

Ornithological monitoring included low-water species counts and surveys of breeding and overwintering birds.

Archaeological monitoring of the land to be flooded was undertaken by field walking and trial trenching, as well as a magnetometry survey of red hill sites. (See Fact Sheet 2 for details.)



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*DEFRA support the  
 environmental schemes  
 on the farm*

## Landward consents

The construction works on the farm required planning permission from the local planning authority under the Town and Country Planning Act, 1990.

Two planning applications were made. The first covered the construction of the spur walls, hides and jetty, raising the track, and the excavation of the lake. The second planning application covered the excavation of the creek systems, the breaches to the sea wall and tidal flooding. Maps and drawings of the proposed constructions and excavations were submitted to support the planning applications, as well as the Environmental Statement.

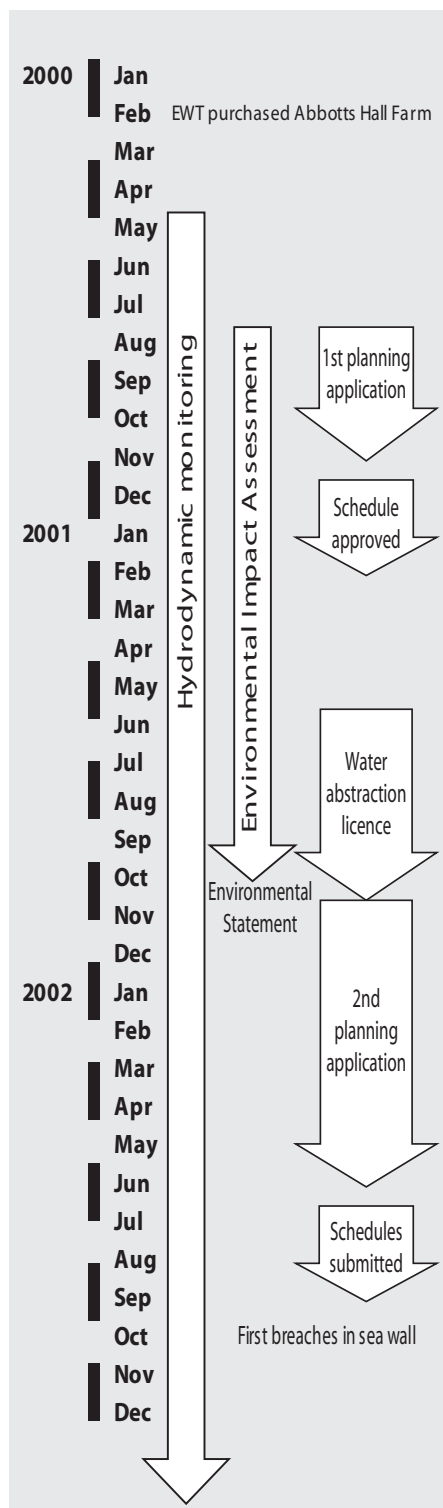
For works that affect flood defences and coastal protection additional regulations apply. Consent for land drainage was required from the Environment Agency under the 1991 Water Resources Act, and from English Nature for coast protection works. The involvement of these organisations in the design of the scheme was very helpful. The Essex Local Flood Defence Committee and DEFRA also approved the realignment scheme proposed by the Environment Agency.

As well as obtaining planning approval for excavating the lake, the Trust had to obtain a Water Abstraction Licence from the Environment Agency under the Water Resources Act 1991, to fill it with freshwater from a local watercourse. This application had to be publicly advertised for one month.

## Conditions

The first planning permission was agreed with seven conditions, some of which concerned the construction materials for the spur walls and jetty, and the safeguarding of trees, shrubs and other natural features not included in the works. Other conditions required plans to be submitted and agreed for hard and soft landscaping and for the timing of operations. The Trust was also required to employ a professionally qualified archaeologist to implement a watching brief during the excavations.

The second planning permission, for the creeks, breaches and tidal flooding had twelve conditions. Several of these were similar to those set for the first permission. There were also specific conditions designed to protect the continued well being of wildlife species, the landscape amenity value, and the



## Seaward consents

It is important to identify the limit of land ownership for coastal works, as the consent of a seaward landowner may be needed. For Abbots Hall Farm the Crown Estate owns the land below the mean high water mark. Consent was also needed for the construction of the jetty as this extended below the mean high water mark. In this case the Crown Estate delegated its consent to English Nature.

Other seaward consents would be required for developments affecting navigation or the marine environment. For example a Food and Environmental Protection Act licence (FEPA, 1985) would be needed to dump excavated material at sea. At Abbots Hall Farm there is no local navigation authority and the construction works were designed to re-use excavated material on site, so no further seaward consents were needed.

No rights of way were affected by the scheme at Abbots Hall Farm so no application had to be made to divert footpaths. This would be a complication at most other coastal sites.

well being and scientific value of the designated areas. These required the Trust to implement the monitoring and mitigation programme in the Environmental Statement and to submit additional plans for a bund wall to protect the great crested newt pond from seawater intrusion, and a method statement for the construction and implementation works.

To address the concerns of the Blackwater Oystermen additional monitoring was required and a specialist advisor on oyster culture appointed to act as professional arbiter if required. Three conditions dealt with the timing of the breaches so as to minimise the impact on breeding birds, over-wintering birds and other wildlife species. To meet these conditions six further plans were submitted to the local authority.

## Environmental Impact Assessment

Schemes that are likely to have significant environmental impacts are required to have an Environmental Impact Assessment (EIA) under the EIA Regulations. The location of Abbotts Hall Farm meant that there were likely to be significant effects on several designated conservation areas so an assessment was required under the EC Habitats Directive (92/43/EEC) and the UK Conservation (Natural Habitats etc.) Regulations 1994.

An EIA aims to identify all the adverse or beneficial environmental impacts of a scheme, both during and following

the construction, assess their significance, and identify mitigation measures to eliminate or reduce any significant adverse impacts. The results are published in an Environmental Statement.

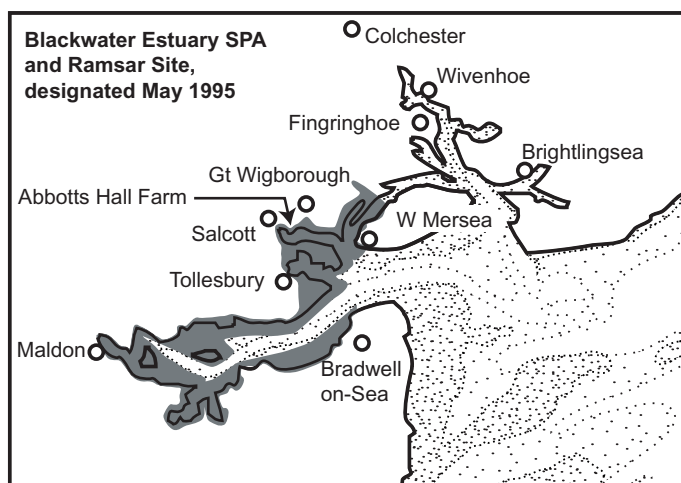
Consultants were commissioned by the Environment Agency to undertake an EIA for the coastal realignment at Abbotts Hall Farm. This took over a year to complete and the resulting Environmental Statement runs to some 140 pages. As part of the assessment process a wide range of interested parties were consulted and specialist consultants undertook a great deal of estuary monitoring and modelling.

Beneficial Impacts	Aspect	Adverse Impacts	Mitigation
Colonisation of the newly created intertidal mud habitat by benthic communities	<b>Intertidal habitats</b>	Potential damage to benthic communities due to erosion and increased suspended sediments	-
Potential creation of saltmarsh habitat		Potential erosion of existing saltmarsh due to increased current speeds.	Monitoring
Change from terrestrial vegetation to halophytic intertidal vegetation	<b>Terrestrial / freshwater / brackish habitats</b>	Potential inundation of freshwater pond leading to loss of great crested newt habitat	Great crested newt population translocated to the new pond
		Potential loss of lagoon sea slug habitat	Maintain the current habitat as brackish. Establish new lagoon sea slug habitat
		Potential loss of water vole habitat	Construct clay bund to protect pond; translocate water voles to the new pond.
Gain in area of potential feeding habitat	<b>Ornithology</b>		
Gain in roosting habitat			
Increased bird feeding hours			
Increased nutrient levels	<b>Fisheries</b>		
Change in land use and landscape of area affected by the breaches	<b>Landscape and visual amenity</b>		
Long term change in appearance from arable fields to saltmarsh			
Improved amenities and interests for recreational users	<b>Tourism and recreation</b>		
Improved standard of defence	<b>Flood defence</b>		
Impacts of sediment accretion on the archaeological resource	<b>Archaeology and cultural heritage</b>	Impacts of erosion of creeks seaward of the breaches on the archaeological resource	Survey breach areas to identify whether features are evident or have been eroded.
Positive implementation of local policies	<b>Planning and Policy</b>		

Abbreviated summary of the environmental impact assessment for the Abbotts Hall Farm coastal realignment.

White areas indicate major impacts; the other impacts shown are moderate. Minor and negligible impacts are not included.

Local, national, European and international designations are used to protect areas of conservation value, according to the importance of the site in conservation terms. The planning system is an important source of protection for many designations. Planning authorities consult statutory bodies such as English Nature when deciding planning applications.



### Timing the breaches

One of the most difficult issues was the timing of the construction work and the breaching of the sea wall. Avoiding disturbance to both breeding birds and over-wintering birds left only a few months in early autumn in which the construction work could be undertaken. Even then construction could not take place during the spring tide cycle. After the second planning consent was granted in June there was still a lot of work to do to submit detailed plans to meet the planning conditions. For a while it looked as though the October window would be missed and the whole timetable put back by 6 months or even a year. However after several trials and tribulations the necessary permissions were obtained.

The sea wall was finally breached in four places in October 2002. Seeds flooded into the site on the high spring tides that followed. In Spring 2003 the first growth of saltmarsh plants covered the 200 acre area.



The first seedlings of marsh samphire, annual sea blite and lesser sea spurrey at Abbotts Hall Farm, May 2003

### Environmental Designations

#### Blackwater Estuary Ramsar site

The Ramsar Convention is concerned for the conservation of the world's wetlands. The Blackwater Estuary qualifies as a Ramsar Site because of the extent and diversity of its saltmarsh habitat that supports rare plants, invertebrates and overwintering wildfowl.

#### Blackwater Estuary Special Protection Area (SPA)

The EU Birds Directive aims to conserve populations of vulnerable species and migratory waterfowl. The Blackwater Estuary qualifies as an SPA because of the number and variety waterfowl and migratory species that it supports. The objectives for the site aim to maintain the condition of habitats used by thirteen qualifying bird species.

#### Blackwater Estuary and Old Hall Marshes SSSIs

Sites of Special Scientific Interest (SSSIs) are designated by English Nature under the Wildlife and Countryside Act 1981 and cover areas that are of particular value because of their flora, fauna, geological or physiographic features. The Blackwater Estuary is designated for saltmarsh, low marsh and mudflats habitats. The Old Hall Marshes to the east of Abbotts Hall support many species of flora and fauna, particularly birds, insects and invertebrates, some of which are internationally or nationally rare.

#### Essex Estuaries candidate Special Area of Conservation

The EU Habitats Directive requires Member States to protect important wildlife habitats or listed species. The Essex Estuaries have qualifying habitats such as mudflats, sandflats and saltmarsh, and several species of plants that live in them.

#### Blackwater Estuary National Nature Reserve (NNR)

National Nature Reserves are established by English Nature and managed by the introduction of byelaws to restrict the use of land by the public.

### Further Information

Blackwater Estuary Management Plan, Maldon District Council and Colchester Borough Council, 1996

Colchester Borough Local Plan, September 2000

Environmental Statement- Sustainable Flood Defences, Managed Realignment at Abbotts Hall Essex, Royal Haskoning, Nov. 2001

Essex and Southend-on-Sea Replacement Structure Plan, April 2001

Essex Biodiversity Action Plan, Association of Essex Councils Steering Group, 1999, HMSO, London

Planning Applications F/COL/00/1344 and F/COL/01/1832, Colchester Borough Council Environmental Services