

Wallasea Wetland Creation Project

Submission for RSPB/CIWEM Living Wetlands Award 2007

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1.1

Project Background and Submission Team

On the 4th July this year construction work was completed on the Wallasea Wetland Creation Project. This involved the creation, through managed realignment, of 108ha of new intertidal habitat on the north shore of Wallasea Island on the Crouch Estuary in mid Essex (see Figure 1). On the final day of breaching, and after a preceding 17 months of wall construction and land preparation, 330m length of sea wall material was removed at three breach points during a single 7-hour tidal window. Now completed, the site represents one of the largest man-made tidal wetlands in Europe with the volume of water entering and leaving the site on each tide ranging from 790,000m³ on a neap tide to 1,700,000 m³ on a spring tide.



Figure 1:
Location of
Wallasea
Island

This project was undertaken, and lead throughout, by the Department for Environment Food and Rural Affairs (DEFRA) Wildlife, Habitat and Biodiversity Division (formerly the European Wildlife Division). However, it also relied on the involvement of a large number of companies, organisations and individuals who each played major roles in its implementation. A full list of the team members, and their responsibilities, is presented in Section 1.3 of this document. This submission for the RSPB/CIWEM Living Wetlands Award 2007 has been prepared by five of the participating organisations on behalf of the project team.

1.2

Project Objectives, Consents and Construction

The aim of the Wallasea project was to create new mudflat and saltmarsh to compensate for losses of these two habitats (and the associated impacts on seabird species that used them) that occurred following port developments at Lappel Bank in the Medway Estuary and at Fagbury Flats in the Orwell Estuary. The port developments had resulted in the cumulative loss of 54ha of intertidal habitat (including 22ha mudflat at Lappel Bank) and 32ha of both mudflat and saltmarsh at Fagbury Flats. It was recognised early on that this large-scale habitat creation would have to be undertaken through managed realignment which involves the breaching of an existing sea wall to allow the tide back onto its old flood plain. It was also agreed that this location should be as close as possible to the sites that were lost and should ideally be within the Greater Thames Estuary Natural Area (GTENA). Following a comprehensive site selection exercise, which involved the consideration of over 200 potential sites across the GTENA, the north side of Wallasea Island was selected as the preferred site.

The north bank of Wallasea Island was the ideal choice for delivering the required compensation for the following key reasons:

- It was big enough to provide the 108ha needed (and therefore attract the large number of birds that had used the wetlands that had been destroyed).
- It was not going to cause damage to the surrounding estuary or adversely affect those who use it.
- It was going to improve the flood protection levels on the island in the short term and the whole estuary in the long term.

Following the completion, in November 2004, of an Environmental Impact Assessment to accompany this proposal, all supporting licenses and consents for the scheme were obtained in 2004. The final planning permission was awarded in February 2005 and a Works Licence from the Crouch Harbour Authority was granted in April 2005. Construction of the wetlands was completed in July 2006.



Photograph 1: Sea wall under construction



Photograph 2: Sea wall under construction



Photograph 3: Final breaching work (8000m³ of material removed during a 7-hour tidal window)



Photograph 4: One of six completed breaches viewed from the new sea wall

1.3

Project funding and management

The works were funded by DEFRA at a cost of around £7.5m which included an extensive site investigation/selection programme as well as all legal, public consultation, monitoring and scheme build elements of the project. The landowner Wallasea Farms Ltd has assisted throughout and was responsible for the submission of the Planning Application and, post construction is responsible for maintaining the new sea walls. DEFRA have appointed a project manager to oversee the wetland project who has worked closely with the landowner Wallasea Farms and their Project Manager John Hesp Associates and their Engineering consultants Faber Maunsell.

This Wallasea Wetland Creation Project was an example of a great team effort which was lead from the centre by the DEFRA project manager to successfully deliver the project within budget and three months ahead of programme. The individual organisations and their responsibilities were as follows:

- Overall project management and wetland design - Department for Environment Food and Rural Affairs (DEFRA).
- Provision of specialist wetland advice - British Trust for Ornithology (BTO), Royal Society for the Protection of Birds (RSPB), Natural England (NE) and the Essex Wildlife Trust (EWT).
- Support during construction and ongoing site management - Wallasea Farms Ltd.
- Hydrodynamic evaluation, breach design, Environmental Impact Assessment - Associated British Ports Marine Environmental Research (ABPmer).
- Recharge design and management - DEFRA.
- Site selection process - DEFRA and ABPmer.
- Land agents - Smiths Gore for DEFRA, Whirledge & Nott for Wallasea Farms.
- Legal agreement - Nabarro Nathanson for DEFRA, Mills & Reeve for Wallasea Farms.
- Environmental Monitoring - Jacobs Babbie/ABPmer/CJT Ecology.
- Estuary flood management requirements - Environment Agency.
- New sea wall design and contract management - Faber Maunsell/John Hesp Associates.
- Wetland construction management - Faber Maunsell/John Hesp Associates.
- Recharge construction - Harwich Haven Authority/Westminster Dredging.
- Earthworks construction - Lancaster Earthmoving.
- Specialist video monitoring and web-site set up - Environment Agency, the EC ComCoast project, ABPmer and EMU Ltd.

1.4

Design

The original scheme design for Wallasea was developed by DEFRA and this was then tested and refined by ABPmer who investigated how the site would function; what effects it would have on the Crouch and Roach Estuaries and what its environmental impacts would be. These studies were based on extensive measurements and numerical modelling work along with surveys of existing wildlife on the site (e.g. reptiles, water voles, invertebrates and birds). This information was used to inform the Environmental Impact Assessment (EIA). The modelling work allowed the site to be designed so that it had minimal impacts on the estuary. Faber Maunsell provided the engineering design for the construction of a new secondary sea wall which was set back from the existing sea defences by up to 400m. This new wall was an extension to one that had been designed by Faber Maunsell and constructed three years previously for the landowner (Wallasea Farms Ltd). The design used material that was sourced on site by the excavation of extensive shallow scrapes which would fill with the incoming tide to create shallow lagoons once the existing sea defences were breached.

Given the alignment of the new secondary walls, the site as a whole was separated into three discrete areas with no exchange of water flow between them so that it acts as three individual and contiguous realignment sites. A plan of the wetlands is given in Figure 2.

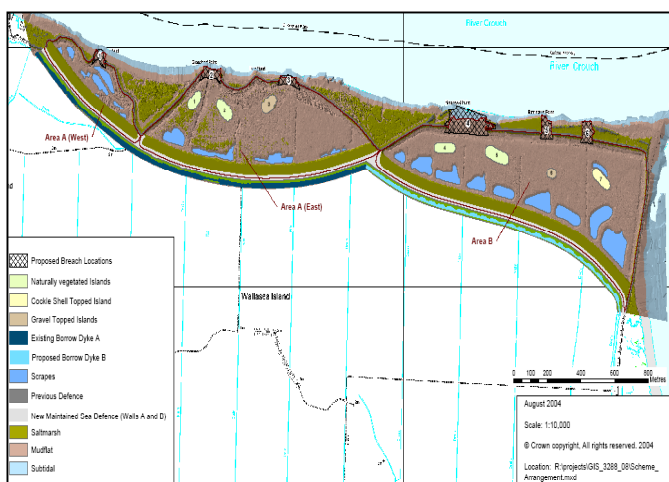
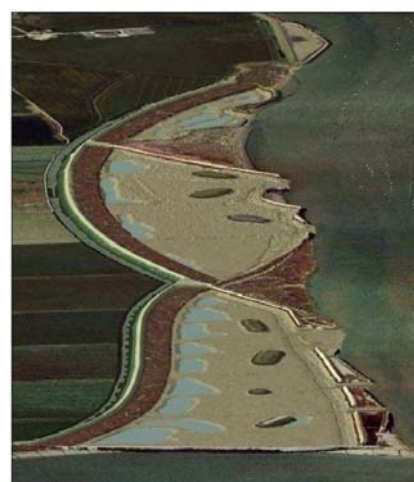


Figure 2: Schematic Plan of new wetland habitat



Photograph 5: Computer visualisation used to inform consultees about the project

1.5

How does it contribute to the delivery of Priority BAP species and targets

In considering the biodiversity targets that have been, and are still to be, achieved at Wallasea it is recognised that the scheme was undertaken to compensate for past coastal habitat losses. However, all habitats created at this site are considered to be relevant in biodiversity action planning terms because BAP targets have objectives for both restoring habitats that were subject to historical loss as well as expanding the existing habitat resource. In this context it is of relevance, when considering targets in purely numerical terms, that twice as much habitat was created as was originally lost. Furthermore it is notable that, in many instances, the designers of the site have given consideration to delivering extra biodiversity value beyond the standard requirements of the compensation targets under the Habitats Regulations. Some of these were identified as the mitigation requirements within the EIA while others are extra design features and they include: the construction, in the site, of islands with different substrata and the development of a morphological complex borrow dyke and cereal margin habitats on the landward side of the new wall.

It is also important to note that, although the Wallasea site is now less than 5 months old and there is a great deal of ecological development that has yet to come and which will be highlighted through an ongoing 5-year monitoring programme, there is enough that we know already that can tell us what BAP targets are achieved and achievable. Also it is considered important to put this submission in now (during the year when the construction work was completed) in order to capitalise on the good publicity achieved and to fuel initiatives that are ongoing to disseminate the lessons that have been learned. This dissemination will extend both to the general public and those responsible for coastal management and relevant initiatives are set out in the following sections.

With these aspects in mind, the following BAP targets for priority habitats have been achieved at this site:

1.5.1

Mudflat: - 85ha of mudflat and shallow scrape habitat created.

Although there is no quantitative area target for this habitat, the BAP objective is to maintain at least the present extent and regional distribution of the UK's mudflats. This target requires compensating for losses to development by the restoration of mudflats and this has been achieved at Wallasea in a 2 for 1 area ratio. In ecological terms the mudflat at Wallasea will require time to become populated with invertebrates but in many areas the site already gives the appearance of mature mudflat habitat and there is already evidence of ragworm within the site. There are also large numbers of mobile crustacean species and juvenile fish in the pools which confirm the functionality of the site. It is envisaged that it will take two to three years for a good inveterate population to become established and this will be a vital source of food for over-wintering birds.



Photograph 6: Mudflat habitat at the mouth of breach 2



Photograph 7: Lagoonal habitat already with significant crustacea and juvenile fish

1.5.2

Coastal Saltmarsh: - 23ha of emergent saltmarsh habitat created

The BAP target for saltmarsh is to maintain existing extent (i.e. off-setting annual losses) and this involves the creation of 100ha/year. The BAP target also involves expanding saltmarsh by a further 40 ha in each year of the plan in order to replace the 600 ha lost between 1992 and 1998, based on current estimates. The majority of Wallasea Island, and thus the area fronting the two new secondary sea walls, is at an elevation half way between Mean Low Water (MLW) and Mean High Water Neap (MHWN). Land at this elevation was ideal for mudflat development; however, to also create an area of saltmarsh, a band of elevated land was created in front of Walls A and B. This was done by importing to the site (by sea) clean pollutant free dredged sediment materials from Harwich and discharging the material between the secondary sea walls and a retaining bund at the back of the site. It was deposited in a 30 to 60m wide strip which raised the topography to a level around the Mean High Water Spring (MHWS) level. This represented a beneficial use of over 700,000t of pollutant-free dredged material which would have otherwise been dumped at sea.



Photograph 8: The dredger pumps ashore the pollutant free mud from Harwich



Photograph 9: The mud is pumped into a pipeline and into a retaining bund to settle out

Once again the habitat has a way to go to achieve maturity but in the first summer after the recharge area *Salicornia* and *Spartina* grew across the recharge; Sea aster has grown well on the margins of the recharge and *Atriplex spp* were present on the retaining bund. Therefore, there is already evidence of this habitat's functionality. It is envisaged that it will also take two to three years for the saltmarsh plants to become fully established on the recharge.



Photograph 10: Salicornia already growing in the recharge



Photograph 11: Sea aster already growing in the recharge

1.5.3

Cereal Margin – Qualitative Improvement in habitat

The BAP target for cereal margins is to maintain, improve and restore by management the biodiversity of some 15,000 ha of cereal field margins on appropriate soil types in the UK by 2010. The cereal margins on the site (Wallasea Farms grow wheat, rape and pea on rotation) have been improved as a result of this scheme. The grassland berm between the wall and the borrow dyke is wider behind Wall B than it was under the baseline conditions and the borrow dyke has been improved (see below) so that its value to invertebrate and the birds that feed on them will be greatly enhanced. The terrestrial stages of these invertebrates will be able to exploit the enhanced area of adjacent terrestrial habitats. Under baseline conditions several nationally scarce plant species were identified although no nationally rare (i.e. red data book) plants were recorded. It is hoped that these scarce plants will re-establish on the new habitat.



Photograph 12: Borrow dyke in Area B before realignment



Photograph 13: Borrow dyke behind Wall B after realignment

1.5.4

‘Saline Lagoon’ as potential habitat for lagoonal specialist invertebrates

The BAP targets for this habitat are to: maintain the current area (c.5200 ha) of coastal saline lagoons; maintain and improve, as necessary, the quality of coastal saline lagoons as measured by the retention of lagoonal specialist BAP Priority and Red Data Book species where these occur and to create, by the year 2015, 120ha of saline lagoon. On this site, and to enhance the value of one island, a ‘lagoon’ was excavated directly adjacent to it. Other shallow lagoons/scrapes and previous drainage channels are present throughout the site while the borrow dyke behind the new wall will also be brackish/saline in nature. Although not strictly saline lagoon habitats as they are usually defined, it is hoped that they will support an invertebrate resource that includes lagoonal specialists. This belief is supported by the fact that before realignment the site was known to have 3 lagoonal specialists within it (*Hydrobia ventrosa*, *Idotea chelifer* and *Agabus conspersus*) as well as three red data book species, several notable species and one BAP species.

In addition to these habitats the following aspects are also of note in the context of the environmental gains provided by the site:

- Potential Water Vole Habitat created (BAP Species) – The new borrow dyke habitat behind new sea wall was designed to include a 30cm high “cliff” on the landward side of the dyke to provide potential water vole habitat. There was evidence of water vole on site before realignment (as latrines) and it is hoped that they will establish in the new habitat.
- Borrow Dyke Invertebrates – It is known from the EIA work that the borrow dyke that was previously present on the now flooded land included one BAP invertebrate species (*Dorycera graminum*) as well as three red data book species and several notable species. It is envisaged that the new borrow dyke habitat will support similar if not more important

populations. This new borrow dyke was excavated to maximise its potential to support invertebrates (and hence feeding birds). It was given a rough and variable topography so that it forms series of shallow pools of varying depths with mini channels connecting to the middle deeper channel. These habitats will change on a seasonal basis as water levels naturally rise and fall within the berm due to climatic changes and, in this context, the presence of the deeper middle channel should ensure that the dyke does not dry out during times of drought and therefore, that some habitat for aquatic invertebrates remains available at all times.

In addition to these BAP species, the site has, and is expected to, deliver habitat for a range of other protected species. Surveys of birds over the course of the summer have shown that the borrow dyke/field margin habitat behind the new Wall B was supporting nesting birds already, including three pairs of avocet. 54 bird counts are to be undertaken on the site over the next 5 years. The first over-wintering bird survey has been carried out, a summary of the results are shown below. The obvious highlights of this count were the numbers of plovers using the site, particularly ringed plover, with the peak count of 733 being of international importance (representing 1% of the E Atlantic flyway population). Also of note is the number of little egrets, reflecting the remarkable recent increase in this bird in SE England. There were also high numbers of lapwing (peak of 1530), dunlin (peak of 159) and redshank (peak of 92). On average around 2800 waders and wildfowl were recorded on this first visit.

	Count One	Count Two	Count Three	Count Four	Count Five	Count Six	Mean of six counts	Peak count
Cormorant	9	1	1	2	2	0	2.50	9
Little egret	30	45	29	31	30	27	32.00	45
Grey heron	2	3	1	1	1	1	1.50	3
Brent goose	10	3	0	5	0	0	3.00	10
Shelduck	2	2	2	5	0	2	2.17	5
Wigeon	0	0	0	3	3	0	1.00	3
Teal	2	1	0	0	1	7	1.83	7
Mallard	10	2	0	3	11	7	5.50	11
Kestrel	0	0	1	0	0	0	0.17	1
Ringed plover	30	53	67	163	733	435	246.83	733
Golden plover	1025	883	925	932	1344	1352	1076.83	1352
Grey plover	5	4	0	2	11	8	5.00	11
Lapwing	955	1025	1027	1530	1364	863	1127.33	1530
Knot	5	0	0	2	0	1	1.33	5
Little stint	3	3	3	3	6	5	3.83	6
Dunlin	29	26	22	15	146	159	66.17	159
Curlew	4	9	3	4	2	2	4.00	9
Redshank	81	58	64	53	92	65	68.83	92
Greenshank	2	2	3	1	3	0	1.83	3
Black-headed gull	26	30	36	62	48	49	41.83	62
Common gull	0	0	29	0	0	0	4.83	29
Lesser b-backed gull	1	0	0	1	2	2	1.00	2
Herring gull	0	0	1	2	0	2	0.83	2
Great black-backed gull	0	0	0	0	0	1	0.17	1
Stockdove	1	0	0	0	0	0	0.17	1
Kingfisher	0	0	0	0	0	2	0.33	2
Skylark (BAP Species)	23	6	0	1	0	0	5.00	23
Meadow pipit	5	8	2	3	3	2	3.83	8
Rock pipit	0	0	0	1	0	0	0.17	1
Pied wagtail	0	2	3	4	0	1	1.67	4
Starling	133	95	0	87	0	0	52.50	133
Linnet (BAP Species)	51	42	85	0	4	0	30.33	85
Reed bunting (BAP Species)	0	0	1	2	0	0	0.50	2
Totals	2445	2309	2305	2919	3806	2993	2796	4356

1.6

How does it Demonstrate sustainability and multiple benefits

In addition to the BAP targets and other ecological gains achieved, the scheme has had the following benefits:

- Flood Alleviation: While the primary objective for the Wallasea Work was to create new coastal habitat, it was very important that it also have a flood management function. At the Wallasea site the need for enhanced coastal protection was manifest and had lead the landowner to build the first secondary sea wall (Wall A). The need for further work in the form of an extended secondary sea wall along the length of the north bank was indicated within the Environment Agency's Flood Management Strategy for the Crouch and Roach Estuaries. This document indicated that realignment at this site would give the estuary a sustainable shape and would therefore contribute to the long term strategic management of the estuary because it will be better able to cope with sea level rise and impacts associated

with coastal squeeze. More critical than the long term management was the need to ensure that the low lying island was not at risk of flooding in the short term which was the case because the existing defences along the north bank were in a poor condition. Had these defences failed then the whole island could have been inundated with consequences for the farmland and the estuary as the floodwaters receded (NB the whole island is in the flood plain and could receive as much as 13million m³ on a spring tide which would be about 20% of the Crouch/Roach Estuaries' tidal prism).

- **Sustainability:** The long-term sustainability of the defences is ensured by using natural flood and storm buffering capacity. The tidal and wave energy and therefore erosion potential will be reduced through the restoration of saltmarsh and mudflats. The habitats themselves are expected to remain relatively stable in the long term and are unlikely to be subject to erosion and scouring because of the low flow speeds within the site.
- **Recreation:** When designing the site it was not only flood protection and ecological benefits that were considered, the need to provide for, and managing, recreation was also considered. In particular, sand was imported to create an internal beach feature inside the north east corner of the site (within Area B). This lies near to the outer shingle beach which is known to be used as a mooring point for recreational boating and the new internal beach is expected to provide a sheltered area that will enhance this existing use. From this beach visitors can enjoy quiet recreation and views of the site including the nearby new cockle shell topped island and lagoonal habitat which was designed as a nesting site for the rare little tern the "sea swallow" of the Essex Coast. Such recreation is likely to be confined to this small section of the overall area and is expected to occur only in the summer months. Therefore, it will not compromise the core objective of the site which is the creation of wetland habitats for over-wintering and passage birds. In addition, the new sea walls have become a statutory footpath (following a footpath diversion order). This path is in a much better condition, and much safer, than the previous sea wall route and it will be subject to long-term maintenance. To improve its value as a walking area five interpretation boards have been provided at strategic locations along the path (see below). The footpath runs along the crest of the new sea wall and gives fine views over the new landscape. Also, access has been maintained to the former sea wall at key places to allow wildfowling and anglers to reach the low water area. Both activities are expected to continue adjacent to the site.



Photograph 14: One of the 5 interpretation boards



Photograph 15: New interpretation board in situ

- **Eco-tourism:** One valuable aspect of the Wallasea project in terms of delivering a valuable new wetland reserve for waders and wildfowl was its remoteness. Therefore, significant marketing of the site for eco-tourism purposes was not pursued in order to limit disturbance. However, the need to cater to locals was recognised and certain measures were put in place to manage and inform visitors (as described in the preceding bullet point). Also, the site has proven to be a major attraction and visitors have come to the site in relatively large numbers during the months since the final breaching. These visitors need to be catered for and managed and therefore Wallasea Farms have created car parking facilities to facilitate public access. Once on site the public can walk on the new footpath, go bird watching, sport fishing, have picnics and enjoy quiet recreation.
- **Fisheries:** The site will continue to be used as a location for recreational angling but also it is expected that the habitat will become a more important site (ecologically and commercially) for fish species such as Bass. This has proved to be the case at other sites such as Abbott's Hall and initial findings from PhD research on the site indicate that juvenile fish are already using the Wallasea habitats.

1.7

How did it ensure that no BAP species are harmed

The Environmental Statement (ES) and hydrodynamic modelling work were carried out to ensure that the scheme did not have any significant adverse effect either within the site itself or in the estuary. Detailed baseline surveys of the wildlife on the site were carried out and the ES identified a series of mitigation measures to offset impacts to protected species and designated habitats. The presence of, and potential impact to, BAP species was recognised throughout the impact assessment. The modelling was also used to confirm that the site would have minimal impact on the adjacent estuary. Based on the assessment's findings, the following measures were put in place to avoid or mitigate for impacts to protected species:

- BAP Bird species: Prior to realignment the area was shown to support breeding territories of the following BAP species: corn bunting, reed bunting, skylark and linnet. Breeding pairs of all four species were recorded. To avoid harming these species and indeed any breeding bird populations (all of which are statutorily protected), a programme of land sterilisation was undertaken prior to the breeding season and gas-guns were used throughout the spring and summer construction period to scare potential ground nesting birds. The borrow dyke and grassland habitat was created in mitigation for the loss of breeding bird habitat in the long term and has already been used (in particular by three nesting pairs of avocet).
- Brown Hare: Brown Hare were present on the site (having been deliberately re-introduced to the island by the landowner). Most were likely to have left during construction period but those that remained were unaffected because they would have been able to use land connections between the site and the farmland to leave the area. They could also have used the existing sea walls and the island features to avoid the flood waters during the first tidal inundation(s).
- Invertebrate BAP species: *Dorycera graminum* (Picture Winged Fly) was present within the borrow dyke habitats within the realignment site (which were a feature habitat of the designated Ramsar site). It is envisaged that this species and/or other protected species will become re-established in the new larger borrow dyke and grassland habitat that was created as mitigation habitat behind the new sea wall. As described above, the design of the dyke was adapted to maximise the value to invertebrates. The existing sea wall was also left largely intact for the insects and plants that were already there.
- Coastal Lagoon (BAP Habitat): Prior to realignment a lagoonal feature was present near Breach 6 but it was not an interest feature of the designated site and represented a relatively low quality lagoonal feature based on the invertebrate species it supported. However, loss of this habitat following breaching was offset by the creation of large areas of new lagoonal/scrape habitat within the site itself (including flooded borrow dykes, scrapes, drainage ditches and an area excavated directly adjacent to Island 7). Three scarce lagoonal invertebrates were also recorded within the site (though not BAP species). These will be unaffected and are likely to thrive in the new lagoonal areas created by the realignment.
- Reptiles: Although not BAP species, the common lizard and adder are statutorily protected and to ensure that they were not harmed an extensive capture and translocation exercise was undertaken by the EWT to remove them from the breach points before the walls were excavated. It was only the breaches that were important here as in all other areas these species will be able to either remain on the existing sea wall or leave the area by the land connections. The captured reptiles were moved to a safe haven elsewhere on Wallasea Island.

1.8

Other relevant aspects

Of the other aspects highlighted in the CIWEM awards as being of potential relevance. The site has certainly demonstrated, even at this early stage that large numbers of breeding and wading birds use the site and that, as described above, the whole scheme has strongly contributed to the restoration of floodplain function on a reclaimed island. In addition, community involvement, information dissemination and education have been a focus throughout the process and all the lead parties are very keen to see the lessons learned from this project taken forward into future coastal management initiatives. Examples of the individual measures being taken in this context are as follows:

- **Community Involvement** (whether that be the general public or the scientific/ management community) has been sought throughout both the pre-breach assessment process and subsequently during post-breach phase. Before the assessment work was begun DEFRA twice consulted (in 2002 and again in 2003) widely with local people and interested organisations on the proposal. These consultation responses informed the proposal and the EIA that accompanied it. They also provided a valuable input into the design of the wetlands.

Liaison has continued through the design and construction of the wetlands. To maintain this involvement, annual newsletters, discussion papers, and details of specialist site visits are regularly sent to up to 600 people and organisations who have expressed an interest in the site. The results of the monitoring will be made available to the public on a web-site (see below) or in the farm buildings where the landowner will be posting the results of the bird surveys as they are received.

- **Signage:** Information boards were designed and put in place to inform the public about why these wetlands have been created and to help them identify the different types of birds that they will be able to see as the site develops. The signs will also allow them to pick out the new man made structures of sea wall, islands, lagoons and saltmarsh.
- **Web camera and web site:** DEFRA has worked with the Environment Agency and the ComCoast (COMbined functions in COASTal defence zones) project to erect a 25m mast with six live web cameras on the site. This will take hourly photos of the site as it develops over the next five years. A website has been set up to display these images but also to collate information (www.abpmer.net/wallasea) about the site and the results of the monitoring work that is being done. The central objective of this work is to find a mechanism for informing and engaging the whole community (technical and general) about managed realignment.



Photograph 16: New web camera tower being erected



Photograph 17: Media interest on the day of the final breach

- **Dissemination:** The findings from the Wallasea work have been, and continue to be, disseminated to a wide national and international audience through guided visits to the site (provided by the DEFRA project manager); TV programmes, conferences and publications (e.g. in the WEM magazine). There was a lot of media interest on the final breach day that was facilitated by the DEFRA publicity team. Information has also been shared with international projects such as PIANC, NEW! Delta and ComCoast.
- **Research and Education:** The site has been a focus for research work since its construction. Surveys of fish populations (for a PhD under the ComCoast initiative) have been carried out and it is also being used as a focus for studies into vegetation growth, benthic invertebrate colonisation and a PhD is being carried out to study applications for the beneficial use of dredged sediment.

1.9

A new area of work for the entrant

DEFRA clearly has a central role in the management of flood and coastal erosion risk in the UK and also is responsible for funding flood management activities. However DEFRA does not build defences and the construction of a managed realignment site is not part of their scope of work.

1.10

Future plans

A plan for the future management of the new wetland site has been drawn up and agreed between DEFRA, Wallasea Farms, Natural England and RSPB. Detailed monitoring work will continue over the next five years to determine whether it meets the compensation targets and also to provide valuable information for future managed realignment projects. The information and lessons learned during this ongoing work will be disseminated to interested parties and organisations for the benefit of future managed realignment projects.

Winning the award would benefit the project by generating further publicity to promote the project and, more importantly, the concept of managed realignment as a dual habitat creation and coastal protection measure. It would be DEFRA's intention, if successful, to give the award money to the Essex Biodiversity Project (Essex Abbots Hall Farm, Wildlife Trust) to contribute to their work.