Coastal Schemes with Multiple Funders and Objectives FD2635

Case Study Report 2
Blakeney Freshes River Glaven Realignment and Cley to Salthouse Drainage Improvements

Image courtesy of the Environment Agency

This case study is one of 14 documents supporting the research project Coastal Schemes with Multiple Objectives and Funders - Case Studies FD2635, available from **http://tinyurl.com/6dzyusy**. This research was conducted in 2010/2011 by Maslen Environmental on behalf of Defra and the Environment Agency's Research and Development programme.

Research Contacts:

Defra: Daniel Johns **daniel.johns@defra.gsi.gov.uk**

Environment Agency: Martin Smalls **martin.smalls@environment-agency.gov.uk**

Maslen Environmental: Steve Maslen **s.maslen@maslen-environmental.com**

1 Case Study: Blakeney Freshes River Glaven Realignment and Cley to Salthouse Drainage Improvements

1.1 Introduction

1.1.1 Description

Figure 1. Aerial photo during construction. This shows the old and new route of the River Glaven. The channel at the back (nearest the sea) is the old channel, with the new route on the left further inland. The wetlands are shown in the background. Photo courtesy of Environment Agency and National Trust

This scheme on the north Norfolk coast involved a number of different elements and collaborative working. In 2005-2006, the Environment Agency moved the River Glaven 200 metres inland of the existing channel, to reduce the risk of flooding in the villages of Cley and Wiveton (see Figure 1). The old course of the river had a history of being blocked by shingle from Blakeney Point following storms and high tides. Due to the imminent risk the partners came together to protect and enhance the site. The key partners included, the Environment Agency, Norfolk Wildlife Trust (NWT), National Trust (NT) and Natural England (NE).

Moving the river inland allows the shingle to roll back naturally and protect the important freshwater habitat of Blakeney Freshes, designated as a North Norfolk Coast Special Protection Area (SPA) and Ramsar site. The land (seaward) of the new river course has changed from freshwater grazing marsh back to tidal saltmarsh. Pioneer species including Samphire and Annual Sea-blite now grow on the tidal muds and some excellent habitats for coastal wading birds such as Avocet and Ringed Plover have been created. New sluices were added at the Cley West Bank and Beach Road to allow Cley and Salthouse marshes to drain seawater more quickly into the River Glaven (See Figure 3). There is also a spillway on the East Bank to allow for any flood water in the Salthouse Marsh to be routed to the Glaven through these same sluices.

The scheme was completed in 2007 (see Figure 4) at a cost of £1.5million funded by Defra FDGiA. A timeline including key dates in the life of the scheme is shown in Figure 2.

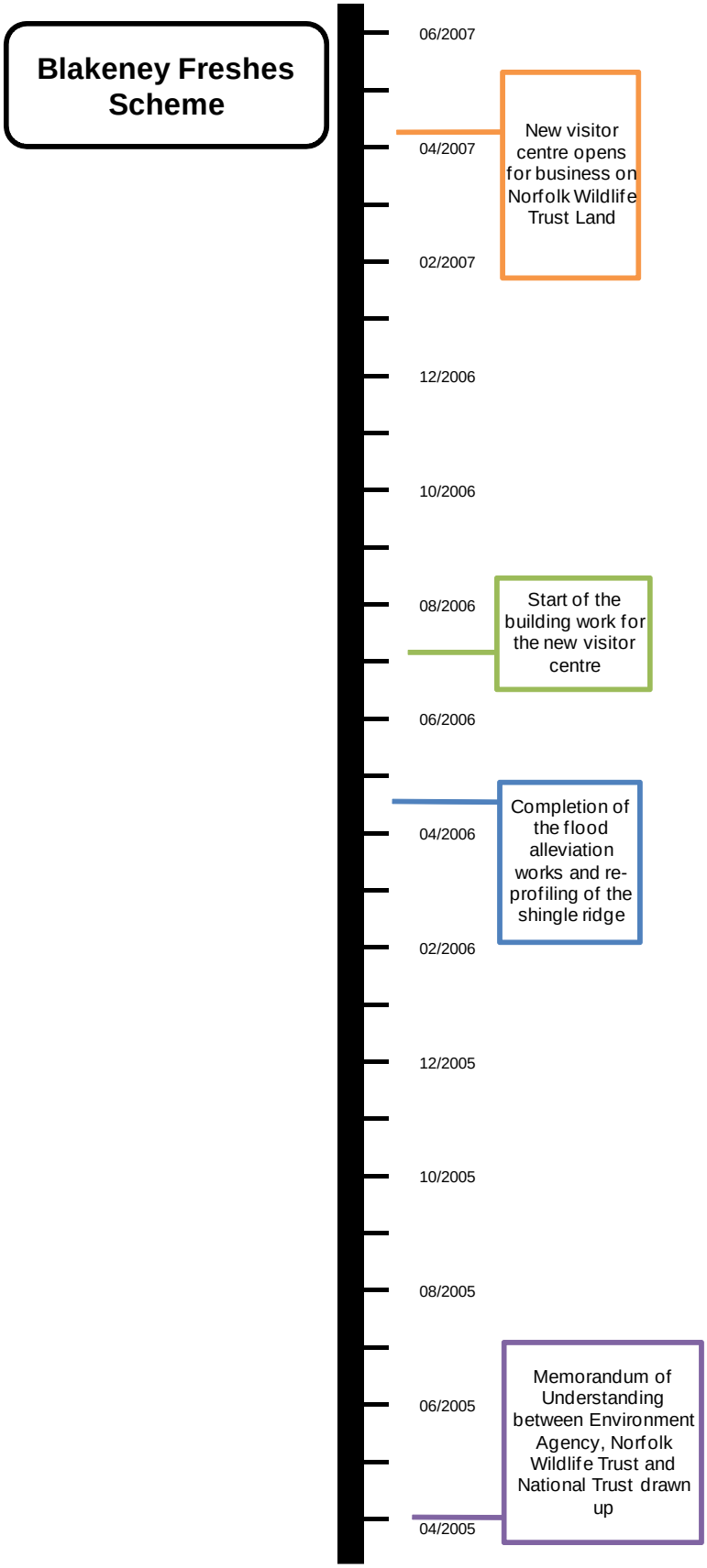

Figure 2. Timeline Blakeney Freshes River Glaven Realignment and Cley to Salthouse Drainage Improvements Scheme

Figure 3. New sluices have been installed to the west of Cley marshes to allow more rapid floodwater evacuation. Photo courtesy of Environment Agency

Figure 4. The completed new channel. Photo courtesy of Environment Agency

1.2 Objective Setting

1.2.1 Project Drivers

A 550m length of the tidal River Glaven channel is at risk of being blocked by the natural movement of Blakeney Spit, a shingle barrier located immediately adjacent to the tidal channel. This blockage if allowed to happen would impede the drainage of saline floodwaters from the adjacent Cley-Salthouse marshes and cause freshwater flooding of the adjacent freshwater marshes at Blakeney Freshes; both of which form part of the internationally designated North Norfolk Coast SPA and Ramsar site.

Within the lower Glaven valley are the villages of Cley, Wiveton and Glandford. Major infrastructure within the Glaven valley includes the A149 coastal road. This asset, including a total of 88 residential and commercial properties within the villages, together with 70ha of predominantly grazing agricultural land, are at risk of fluvial flooding as a result of any impedance of the drainage of the tidal Glaven channel.

The scheme was described by partners at the Coastal Scheme Workshop as "adaptive change management with climate change impacts such as predicted sea-level rise built into scheme development…The careful management of change, thinking beyond the partners own timeframes, and flood proofing of a site in time and space for future generations to avoid deterioration" (Doktor, et al., 2010).

1.2.2 Partnership Objectives

The main objective for the Environment Agency was to avoid deterioration of the internationally designated sites and protect the site for future generations. The scheme also provides protection to a total of 88 residential and commercial properties within the villages.

NT (majority landowner of the Blakeney Freshes) and NWT were the main affected landowners and concerned about the potential consequences for their sites and future management. As conservation organisations, NT and NWT both recognised and accepted the need to accommodate coastal change. More specifically, NT sought to deliver a scheme supported by the local community and guided by NT's 'Shifting Shores'[1] policy. The NT also had site-specific objectives around allowing public access to the site and promoting the natural and cultural heritage of the site.

NWT was aware that a scheme was needed and worked with the partners to ensure the valuable site was protected for visitors.

NE was an important partner in providing advice in the interests of conservation and biodiversity, particularly in relation to the designated sites. Consequently, NE set objectives focussing on nature conservation and protection of the SPA and Ramsar site.

1.2.3 Project Objectives

Nature conservation and protection of the environmentally designated sites were project objectives alongside those of flood risk reduction. The project objectives agreed in partnership were:

- Flood risk reduction to 88 residential and commercial properties within the villages of Cley, Wiveton and Glandford;
- To provide sustainable drainage of the tidal River Glaven to the wider estuary and thence to the North Sea in a technically, environmentally and economically acceptable way, thus preventing the flood damages;
- Adaptive management and sustainable management of the coast over the long term;
- The works are designed to maintain the ecological integrity of the European designated North Norfolk Coast SPA and SAC located to the west and to the east of the tidal River Glaven channel as it flows towards Blakeney Spit.

1.3 Partnerships

1.3.1 Building the Partnership

The partnership was formed through the Environment Agency's need to develop a flood risk management project. The Environment Agency made contact with the main affected landowners (NWT and NT) and started to formulate discussions and negotiations of a partnership project. The resulting partnership consisted of the Environment Agency as the lead organisation, supported by partners NWT, NT and NE. There were close communications and understanding with all parties with a Memorandum of Understanding (MoU) draw up between the parties. It is unlikely that the project would have achieved all the aims without this formal partnership between the landowners and the Environment Agency. In particular, the other partners would not have been able to make use of the Agency's substantial flood risk management investment as match funding. It was important that the Environment Agency understood NT's land management objectives so as not to cause harm to the area. The Environment Agency led on the construction work (see Figure 5). All the partners had a good working relationship and a strong cooperative way of doing things. The partners felt they "had a very close working relationship with the other organisations that did not rely on the formal MoU to keep us together. It was more as a coalition than a partnership as such" (Doktor et al., 2010). Without the formal partnership access to the additional funding for the new visitor centre would not have been possible.

The formal partnership arrangement ceased when the funding ended. However there are still good relationship between partners to this day, this was observed at a lessons learnt workshop as part of this Defra R&D study in Norwich on 21st September 2010.

1 http://www.nationaltrust.org.uk/main/w-shifting_shores.pdf

Figure 5. Digger linking the final section of channel. Photo courtesy of Environment Agency

1.3.2 Partnership Working, Governance and Communications

A MoU between the Environment Agency, NWT and NT was drawn-up, this outlined marketing, branding and the collective use of facilities and access arrangements for the partners at the NWT Cley Marshes. There were no formal partner meetings, however the partners still come together to guide the management practices on the shingle.

There was a good working relationship with the local community; this was achieved through regular consultation and information briefings detailing project progress, options and next steps. Regular newsletters were sent out using a database of contacts collated as part of the schemes development; it included community representatives and elected members. There were presentation boards erected on-site while the scheme was being developed to explain the project to the public and the visitor centre now offers interpretation boards to explain the scheme and management of the area to the public.

The local people in the area had experienced flooding in the past due to the River Glaven. The community understanding of the issues allowed them to be fully integrated into options appraisal during the scheme development. There was recognition that the public uses a different terminology than the partners, therefore communication approaches were tailored towards community needs. The partners came together to carry out community engagement activity, the advantage of this approach was that it brought together multiple partner perspectives, understanding and skills. The partners took on different project roles according to their different strengths and skills, for example:

- NWT dealt with managing the consultation messages amongst elected members.
- NT developed a range of simple communication tools and spent a lot of time working with the community.

Although progress has been made by this scheme in relation to communicating adaptive management and coastal change locally, it was felt that more can be done locally in communicating these adaptation and coastal change difficult issues.

During construction Blakeney Chapel was uncovered this had the potential to cause delays, and disruption to the scheme development, however due to the strong relationships between both the partners and the community a course of action was always found with relatively little disruption to the scheme development.

The Environment Agency was responsible for the financial risks during construction. It was felt by the partners that the long-term maintenance costs are very important to consider during a schemes development. The Environment Agency is responsible for the maintenance of the flood defences and sluices. NWT and NT are responsible for the land management including the newly created intertidal areas.

1.4 Approvals, Planning Context and Legislation

The Environment Agency led on the approvals and issues around access (such as moving the footpath from Blakeney to Cley).

Implementation of drainage improvements was required to take place without compromising the internationally designated sites.

The scheme needed planning permission and a Habitats Regulation Assessment.

A Coastal Protection Act (CPA) and Food and Environmental Protection Act (FEPA) licence was required for the infilling of the old River Glaven channel to create intertidal habitat. This infilling was to offset the area lost through excavation of the new channel through the saltmarsh (compensatory habitats).

1.5 Funding Arrangements

The total cost of the Glaven channel realignment across Blakeney Freshes and the Cley marsh drainage improvements was approximately £1,495,000. The scheme was fully funded (£1,495,000) by Defra FDGiA (via the Environment Agency). However, part of this contribution was used as match funding to generate £854,000 funding from the European Union's Objective 2 fund, the East of England Development Agency (EEDA) and from the DTI's[2]. The NT did not contribute financially to the coastal works, but they did contribute to the GEESE project.

These external contributions were used to create a new NWT visitor centre at Cley Marshes reserve, this included on-site interpretation. This was all delivered under the banner of the Glaven Education and Environmental Sustainability Enterprise (GEESE) project with NWT, the Environment Agency and the NT as the key partners. The new centre incorporates brand new information systems interpreting the North Norfolk coast, its landscape, wildlife and people.

Compensation was given to the NT from the Environment Agency, this was derived from the £1,495,000 capital investment. The NT compensation package was based on primarily loss of 10.18 ha of severed freehold land, loss 6.48 ha of land covered by bank, channel and area in between, loss of 32 ha of grazing land during construction period and additional management costs for new 'island' created by the scheme. The compensation amount came to £84,608.27. This amount has been invested by the NT in a defined purpose fund for the benefit of the management at Blakeney National Nature Reserve.

Whilst the scheme cost £1,495,000, it led to a reduced annual maintenance cost of £90,000 for the Environment Agency. This related to the cessation of the annual bulldozing of the shingle bank to a taller profile. In this sense, the scheme could be considered as cost neutral and will pay for itself over the schemes life.

In summary the suite of works carried out by the partners totalled approx £2.3 million, without the without the injection of the FDGiA funding the £854,000 external funding would not have been obtained.

1.6 Lessons Learnt

- There was a memorandum of understanding and close communication between the partners. The objectives were developed in partnership with NE leading on conservation and biodiversity objectives, driven by national legislative responsibilities;
- Construction works need to be sensitive to avoid harm to wildlife, this was achieved through consultation with NT;
- Lessons can be learnt about this scheme not just about funding and partnership working, but also about managed realignment and adapting to a changing coastal policy ;
- There was a need for good working relationship between the partners and a clear understanding of conservation requirements;

2 Now replaced by of the Department for Business, Enterprise and Regulatory Reform and the Department for Innovation, Universities and Skills.

- A good example of how conservation groups can work with government bodies to secure sustainable improvements;
- The expenditure on Flood Risk Management and the generated match funding from Objective 2, EEDA and DTI allowed an integrated package of improvements to the NWT Cley Marsh and NT Blakeney Freshes;
- The funding that was obtained from the EU for the visitor centre was described by the partners at the Coastal Scheme Workshop as "opportunistic" being in the right place at the right time, making use of internal knowledge of funding streams and overlapping project opportunities (Doktor et al., 2010);
- The good relationship with the community was achieved through consultation (lead by the Environment Agency) and informing the community about progress; (e.g. on site interpretation and post scheme presentation boards at Visitor Centres);
- Post scheme responsibilities are an important issue to consider at the outset of a project and in particular, the long term maintenance costs;
- The scheme has lead to a reduced annual maintenance budget for the Environment Agency of £90,000 per year;
- While the scheme is complete, the life cycle of the project continues. The visitor centre provides people with background information about the GEESE project, the impact of climate change on the fragile north Norfolk coastline and its future.

1.7 References

Doktor, P. (2010). Blakeney Freshes River Glaven Realignment and Cley to Salthouse Drainage Improvements. [Telephone]. Personal Communication with Harvatt, J. (6 May 2010).

Doktor, P. Hiskett, J. Jackson, J. Millar, A. Sayers, G. Sizer, J. Warrington, S. (2010). Coastal Schemes with Multiple Objectives and Funders Workshop. Facilitated by Maslen Environmental. Environmental Agency, Dragonfly House, Norwich, 21st September 2010.

Environment Agency. (2002) Project Appraisal Report, Blakeney Freshes. Environment Agency.

Environment Agency (No date). Blakeney Freshes River Glaven Diversion and Cley and Salthouse Marshes Drainage Improvements. Environment Agency.

Environment Agency (2006). C Beardall GEESE Speech 13th July at NWT Cley Reserve.

Environment Agency (2006). Glaven Education and Environmental Sustainability Enterprise.

National Trust. (2005). Shifting Shores: Living with a Changing Coastline. http://www.nationaltrust.org.uk/main/w-shifting_shores.pdf (Assessed May 2010).

National Trust. (No date). The Changing Coastline: Blakeney National Nature Reserve. National Trust

Norfolk Wildlife Trust. (2005). GEESE (Glaven Education and Environmental Sustainability Enterprise) 26 April.

Norfolk Wildlife Trust. (2006). Ground Breaking News Leaflet.