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Aerial view of the Abbotts Hall managed realignment at high tide showing the flooded land behind the breached sea wall.

Successful realignment is not simply about letting the water in. It is about achieving a sustainable coastline with a harmonious balance between social, economic, and environmental needs. While much is already known about the technical aspects of breaching sea defences safely and allowing the environment and natural processes to re-establish, it is still difficult to meet the challenge of creating positive social and economic benefits. Success in each of these areas is vital to boost the fragile confidence in sustainable management of the coast, and this requires careful attention to all three aspects from the very conception of the project. Throughout the Abbotts Hall Farm realignment project we have found numerous opportunities to bolster success. We have also learned many lessons. What has been driven home to us is that there are a great many things one has to get right in a difficult environment in order to be successful.

The key lessons learned through the project are outlined in this fact sheet under several broad headings. In each area the questions, observations, and mitigations give our view of what happened and how we responded to best meet our triple responsibilities to the environment, society, and economy.

Consultation and Engagement

Timing and coverage are two critical elements in consulting with stakeholders. We found it vital to identify all the stakeholders correctly and to communicate with them as early as possible.

For example, we initially failed to identify the Sailing Community as a key stakeholder in our project, which meant that they were not consulted in the early stages of the project. This opened up the possibility of negative publicity and could have created an unjustified public backlash against the project. Luckily we realized our error and worked to bring them up to date with our plans and the possible impacts of the realignment on the estuary from their perspective.

Consulting widely and early is thus essential since it presents an opportunity to win over possible opponents and ensures that people you are unable to speak to during the planning phase (see Planning) are adequately briefed to meet your needs.

Much of our consultation with stakeholders took place through personal meetings. This is a time intensive method of consulting since one covers only a single stakeholder at a time. It carried a strong

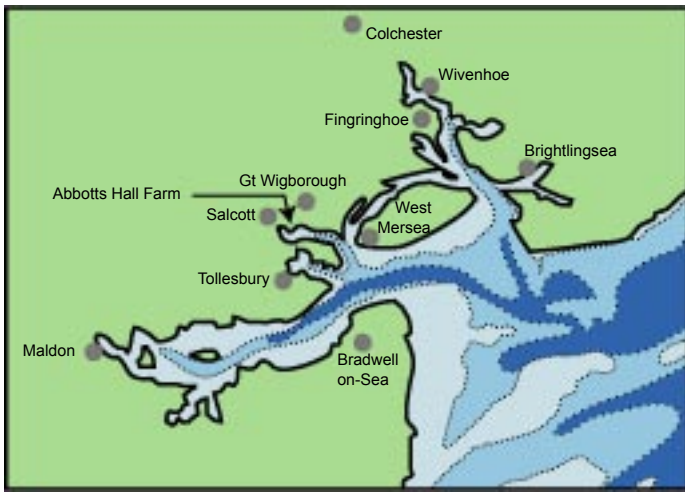
benefit though as we were able to directly address people's concerns, correct misunderstandings, and provide information specific to the interest group. We chose this approach over holding a series of public meetings, which we felt could open the way for misunderstanding by putting all stakeholders together, preventing in-depth consideration of the concerns of individuals or specific groups.

In a similar vein, throughout the consultation process, be aware that not everyone is going to see the proposal in the same way: some will worry about the risk of flooding, others will be concerned about the waste of good arable land which their forefathers claimed, others will worry about the impact to downstream enterprises.

In addition to the personal meetings we held a series of guided walks around the site to explain what we were planning and how it would look. These continue to this day and are a key feature in keeping local stakeholders engaged with our progress.

Built into this is the idea that one has to be totally honest about the project. If the impulse to embellish or diminish what the project is to do is resisted there can be no disappointment later. This further strengthens the engagement with stakeholders.

- Consult widely and early.
- Be sensitive to differing viewpoints.
- Be totally honest.



The realignment site on the Salcott Channel of the Blackwater estuary

Location

Choosing where to locate realignment on an estuary is tricky because there are several different considerations. Not least is finding a suitable site that meets the funding constraints of the organization. We were lucky with the Abbotts Hall site because we were able to raise the funds required to complete the project on a site that was ideal for realignment.

Height above sea level is the critical element. Saltmarsh will not develop if the land to be inundated is at the wrong level. If it is too low one gets mudflat developing, while if it is too high the inundation does not take place and there is the possibility of erosion. Although mudflats provide a natural form of sea defence and a valuable habitat for invertebrates and birds, it can be perceived as an eyesore and risks losing public acceptance. Land that does not flood defeats the point of the project.

The reality is that, depending on availability and funding, one might have to use a site that is not perfectly located. In this case one may need to either raise the levels with dredgings or even cut land away. This process could add to the cost but there may be benefits to other groups to offset this. Port developments, for example, might provide dredgings as a part of their sustainable development programmes; alternatively there may be local demand for topsoil.

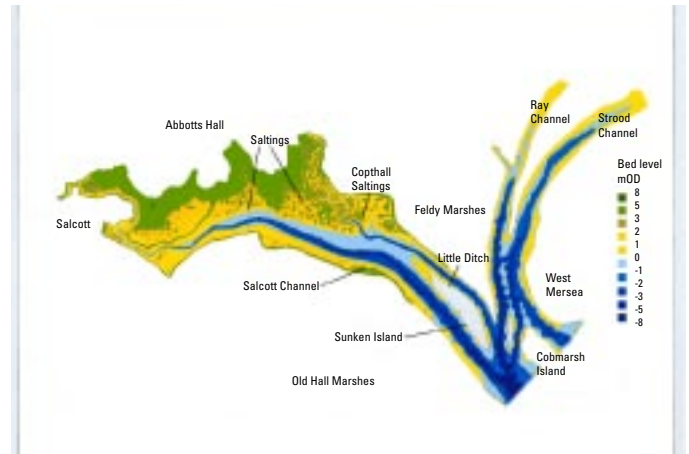
The siting of the realignment in the estuary is vital. Realignment close to the mouth has least effect on water levels upstream. At the head of the estuary there is greatest flood management benefit but also greatest possible downstream impact.

It is important to strike a balance between these two extremes, depending on the objectives of the project. Abbotts Hall is about mid-way along the Salcott creek, and is ideally located for regeneration of salt-marsh although it is probably not large enough to provide significant extra flood protection. The hope is that data from Abbotts Hall will build the body of knowledge needed to facilitate realignments on larger areas that can provide greater protection from surges.

- Budget may dictate location.
- Topography is critical.



Sheep on the new grassland at Abbotts Hall farm



Contour map of the Salcott Channel, saltings and adjacent farmland

Finance

There are two aspects to finance: raising the funds for the initial project, and then deriving an income from the project. Both are critical to the creation of a sustainable coastline.

Abbotts Hall required significant investment to acquire the land and plan, design, and execute the realignment. To achieve this funding we formed a partnership with several groups interested in having a stake in such a project. There are pros and cons to this approach.

Obviously the prime benefit of a partnership is that it can generate funding that is beyond the reach of the ordinary individual. It also pools other resources, such as knowledge and experience, and spreads the risk away from a single entity.

The flipside is that there are different objectives to be met by each partner, and each will need to gain something from their participation in the project. This can complicate decision-making and the identification of ownership of the project.

The second part of the financial equation is much more difficult. The ongoing financial viability of the site is central to success in meeting the economic requirement of sustainability. The main economic benefits are the reduced costs of flood defence to be borne by the taxpayer, but the financial position of the landowner, who has lost income from the flooded land, is much less certain. Up to now there has been a precarious reliance on government grants but these were recently cut from 20 to 10 years. Although indications are that these will be renewed there is no guarantee of this.

Alternative means of generating income from the realignment should be considered. At Abbotts Hall sheep grazing on the upper grassland and marsh is going well and should produce a premium meat product. We are having some success with alternative crops such as samphire and are considering asparagus. Other suggestions include exploiting the newly created resources for sport fishing and wild fowling; development of a marina while creating new saltmarsh on adjacent land; and the development of tidal exchange power schemes. These options could generate income from the site and potentially boost local economies through increased recreational use and the creation of jobs.

- Subsidy is a good economic base for the landowner, but is not sufficient alone.
- Creative planning surrounding the realignment can generate ideas for funding and ongoing economic viability.

Planning

For the Abbotts Hall project we submitted our planning application as early as possible. It languished on the shelf for a long time and we saw little progress. This is probably in part due to the fact that we were not well versed in the role of “developer” and so approached planning too passively. Clearly one has to nurse an application through to some extent by giving it profile within the council.

Another reason for the consent taking so long was simply that the council had never had to deal with such a request before, and did not have the expertise to confidently process the application. To mitigate this we would recommend ensuring that the right information and independent advice are readily available to the council.

Finally, the timing of our planning application caused us a totally unexpected difficulty. We found that we were unable to talk to certain councillors about our project because it could be construed as lobbying to sway the planning process. If only we had the right conversations with people in advance, the entire planning process could have been less of a surprise to the council and thus easier to manage. This is a key point to consider with regard to consultation; once you seek planning consent some of your key stakeholders be rendered “out of bounds”.

- Raise the profile within council.
- Facilitate the flow of information.
- Brief councillors before application.



One of the proto-creeks in the first spring after the realignment

Publicity

The media tends to seize on bad news, which can quickly generate negative publicity for the project. If this happens elected decision makers can be forced by their constituencies to stop or obstruct the project. It is thus vital to manage the publicity of the project carefully and creatively. Ideally one should aim to generate positive publicity to raise public awareness of the project in such a way that the interested population has a deeper understanding of the objectives and process. The ultimate goal of this is to ensure that elected decision makers are empowered to make the difficult decisions that such a project typically involves without needing to be overly concerned about public backlash.

On a separate track, the media representation of the project can be a source of friction in a partnership. Typically the participants in the partnership will each have publicity objectives relating to the project and if the communications strategy for the project is not agreed up front there can be disagreements over ownership of publicity.

- Develop a communications strategy involving all the partners at the outset
- Treat the media with care - get them interested but try to avoid bad news.
- Engage the public to empower decision makers.
- Agree the ownership or branding of publicity.



New wetland behind the largest breach in the sea wall

Design

Project design effectively shapes the end product completely. We found several things at Abbotts Hall that have affected the performance of the site in different ways.

Consider for example that some people have said that the Abbotts Hall lake looks as though it has been designed for birds, suggesting that fish or other aquatic residents have not been properly catered for. This “exclusion” was not intentional. It was simply the case that the area is rich in bird life and the fishery implications of such a lake were not anticipated. It is thus important to view the project design from as many perspectives as possible to ensure a balanced overall outcome.

Similarly, the proto-creeks in the inundated land were dug with vertical sides and flat beds that would slump into V-shaped structures with a deep channel and graded sides, as has now happened. Since this change we have detected greater use of the creek system by juvenile fish. We suspect that the original creek-bed design delayed colonization and could have been improved by digging V-shaped beds in the first place.

We learned another lesson about the creation of the proto-creeks much later. When the creeks were created the spoil was left as earth banks alongside the creeks, to provide escape routes for reptiles and other animals when the site was first flooded. Looking at the site now these banks look unnatural and detract from a typical salt-marsh landscape. In addition as mounds of disturbed earth that are not regularly inundated they have become weed beds that are difficult to access and manage and add to the weed problem on the farm. In light of this we suggest either letting natural processes carve out new creeks, or removing the spoil from cutting the creeks before inundation. Allowing nature free reign avoids the problem but means slower uptake by creek fauna. Removing the spoil has both cost and time implications that need to be weighed up.

Weeds present an ongoing issue. Although no chemicals were used in the preceding year on the land to be flooded, it had been enriched through years of fertilizer use before that, and when crops are no longer sown, this results in extensive weed-beds. At Abbotts Hall we have found this to be particularly true of the area between the new saltmarsh and the newly created grazing land. In retrospect we should have sowed grass right down into the new saltmarsh. The salt would have killed off the grass and left a clean transition from marsh to grazing. The remaining cover of grass would act as a weed control and would increase the grazing area that provides both income and valuable habitat.

- You get what you design.
- Lapses in design continue to present problems long after it is too late to adjust them.

Construction

The construction process itself can have implications for all three pillars of sustainability. Ideally these should all be addressed sensibly.

On the environmental front one needs to take account of the Habitats Regulations. The site must be developed in such a way that it prevents serious or unmitigated disruption to the species occupying the area. At Abbots Hall we found that fitting in with this overarching need placed restrictions on the timing of various events. Essentially we had to fit in with the breeding cycles of various birds, mammals, and reptiles while attempting to move everything forward at the pace dictated by our budget. Shrubs had to be cleared when there was no nesting activity, and then the waste material had to be either destroyed or relocated before any creatures colonized it.

One also has to consider the concerns of project stakeholders. At Abbots Hall one of our key stakeholder groups were the oystermen who were concerned about the impact on their livelihood if the breach released large quantities of silt or organic matter onto their oyster beds. In order to gain both their confidence and support for the process we undertook to remove as much organic matter from the site in advance of the breach as possible. We also designed the main breach with a sill to restrict the rate of water escaping the newly inundated land so as to limit the chance of excessive quantities of silt-laden water washing into the channel. We did not think that this would happen as saltmarsh tends to absorb silt rather than releasing it, but by building in this way we were able to develop a strong relationship with a group who could have presented an obstacle to the project.

Meeting both these environmental and social responsibilities has obvious financial impacts that need to be factored into the budget.

- The construction process is restricted by Habitats Regulations.
- Building with stakeholders in mind can win over support.

Visitor Information

Once the site was open to visitors we swiftly realized that much of what was being done in the ongoing development of the project was not obvious to casual observers. We needed to have good interpretation boards and literature in place at an early stage, something that we failed to adequately anticipate in the planning of the project. We now find that it is difficult to get funding to establish appropriate interpretation boards on the site and feel that funds would have been much easier to raise had this been factored into the original proposals for the project.

- Interpretation on site is important and costly



Paths, fencing and signboards provided for visitors

Conclusion

This fact sheet outlines some of the pitfalls that face attempts to manage the coastline in a sustainable way. Many different activities come into play to meet the challenge of balancing social, environmental, and economic needs. Clearly there are no “one size fits all” solutions, and every decision carries pros and cons that can dramatically affect the shape of things to come on such a project. We feel that although we made some mistakes along the way at Abbots Hall we have also achieved an insight into the realities of sustainable coastline management. Based on our performance to date we believe that this goal is achievable if approached in the right way.



The sill at the main breach, designed to meet the oystermen's concerns

Maintenance & Monitoring

Realignment is not just an event, it is a process that continues into the future, and thus presents responsibilities for all involved.

We have found that it has been critical to have experts on hand after the initial event to ensure that everything continues appropriately. Maintenance fits closely with ongoing monitoring. The monitoring process provides an early warning of trends or changes; the maintenance process responds to this information.

Without monitoring of how the system is performing it is impossible to know what effects it is having on the environment. Although we did have monitoring set up at Abbots Hall we feel that we did not have sufficient monitoring resource in place at the outset. The outcome of this is that it has been very difficult to establish exactly what the extent of the impact has been on water levels elsewhere on the estuary. Such knowledge might be a critical part of evaluating the success of a project and ought to be factored in.

Monitoring also plays a crucial role in managing the public reaction to the change. Shortly after the breaching at Abbots Hall we were confronted with an issue downstream where mud levels appeared to have increased. We had been monitoring silt levels in and out of our site and were able to deflect the charge through evidence that the site was actively removing suspended silts from the water rather than increasing it. It turned out that the “problem” was caused by a new colony of tubeworms and was unrelated to the Abbots Hall realignment. The reality is that there is a possibility that other issues may be tied to a realignment project as part of unscrupulous attempts to establish compensation claims. We did not run into this problem but it was something that we actively mitigated through the monitoring regime.

- Monitoring is critical and expensive.
- Ongoing expert maintenance is required.