

## THE CLEETHORPES SALTMARSH

To look seawards from the Leisure Centre at Cleethorpes on any given day one would be hard put to describe the scene as 'dynamic.' (As portrayed in the book 'A Dynamic Estuary', edited by N. V. Jones). But then, as with comedy, timing is everything! The appreciation of this 'dynamism' is indeed a matter of time, geological time. It cannot have escaped the notice of visitors to Cleethorpes that the salt marsh area to the south of the leisure centre is growing almost before our eyes. This is the cause of much concern for the local tourist industry as there is a real threat to the beach as the marsh spreads out northwards. Many column inches have been produced in the local press to highlight this problem. It's hard to disagree that should the whole expanse of shoreline above the beach be covered in marsh then the resorts leisure status would be in peril. It ought to be borne in mind that the Humber is not just about the estuary. The river proper starts at the juncture of the rivers Trent and the Ouse and flows for 37 miles to the open sea at which point it is eight miles wide. All along are differing habitats, from the mudflats and salt marshes at the middle river and the estuary, to the sand banks and reed beds of the upper Humber. The river drains approximately 1000 sq mile of England's land mass and as such is the country's largest outflow of fresh water into the North Sea.



The above photographs show the marsh just opposite the Leisure centre. I believe the main species of plant in this picture is *Spartina anglica* which is a member of the grass family, notably the 'common cord grasses'. The second photograph taken a little further north (maybe 80 metres or so) shows sporadic 'islands' of this grass. If you were to view the area using Google Maps and choosing the Satellite option you will quickly see that the marsh has expanded even in the relatively short time since those images were taken.

So what's going on in our estuary? Well on the face of it nothing is happening here that hasn't been 'going on' for thousands of years. In an historical context the last of the 'ice age' glaciers left the area about 5,000 years ago. There had been considerable ebbing and flowing of ice preceding this, as warmer and colder periods in our climate vied with each other to gain supremacy. One of the main legacies handed down to us as a result of glacification is the land overlying the geological structure beneath our feet. The melting glaciers released, in their melt waters, a great deal of debris including mud and clay, along with finer sands. These were deposited to the east of the ancient chalk formation which stretches from North Yorkshire down to South Lincolnshire. The heavier debris settled as 'boulder clay' whilst the lighter sands (Alluvium) finally formed the extreme eastern edge

of the Lincolnshire coast down to the Wash. On the Yorkshire coast, the boulder clay faces the sea and extends many miles inland. Behind this are the deposits of sands and fine sediments. In Lincolnshire we find the reverse situation with the finer sediments facing seaward and the clays to the rear. (This is no doubt an oversimplification of a very complex series of events). One of the major benefits of this 'new land' around the Humber estuary is that it hosts some of the most productive farmland in the country.

It so happens that the River Humber is close to the 'tipping point' between the land which is rising to the North and West and that which is sinking in the South and East. Couple this with the knowledge that the sea is steadily rising; and various studies indicate an average rise of between 1- 6mm per annum, then use of the word 'dynamism' can be more readily accepted. Much of the Holderness (Yorkshire) coast is in a state of flux as erosion eats it away at up to 6 metres per annum. The nature of the cliff line north of the Humber estuary, as previously mentioned, is that of relatively soft boulder clay. This offers little resistance to the power of the sea and in consequence much of the eroded land is taken away in sediment drift. Some of this silt ends up being carried into the estuary by tidal action. It is stated in a report on coastal erosion (*Environmental Agency Report edited by Philip Winn*) that up to 6 million tonnes of sediment is brought into the Humber each year. Only 3% of this is reckoned to be freshwater sediment; that is to say that which is brought downstream from the rivers Trent and Ouse and numerous smaller tributaries. The remaining sediment is drawn from the North Sea coupled with that eroding from Holderness.



Figure 1 Grandson Jack investigating the marsh



Figure 2 Marsh drainage channel

Tidal action brings in the sediment and the ebb tide also takes away sediment. This process however is not in balance as some remains to be deposited along the shoreline. Water borne sediment can begin to accumulate above the mean high water level. (NB. the average reach of the high tides over a given period of time) Below this level there is an insufficient dry period (at low tide) for most plants to begin the process of plant colonisation. Once plants have begun to colonise this new habitat, (above the mean high water level) there is an acceleration of marsh development as roots and leaves have a tendency to trap more and more sediment. This is particularly true of *Spartina Anglica* which is extremely efficient at trapping any available sediment. (*Lee and Partridge USA 1983*) The flip side of this development is that there comes a point when the marsh is elevated to such an extent that tidal coverage grows less frequent. Other factors such as drainage and rainwater begin to have a

greater influence than the tide. This is the margin whereby less salt tolerant plants can find a foothold and bring about a gradual change in the appearance of that part of the marsh. *Spartina Anglica* is not only efficient at trapping sediment; it is also one of the few marsh plants that can tolerate periods of up to 9 hours under water (*Ranwell 1967*). This ability proves invaluable as it enables the plant to colonise seawards. It is this very ability to tolerate being submerged that can threaten to overrun the Cleethorpes mud flats, and in consequence destroy feeding grounds. Our overwintering birds may in future find themselves in competition with the marsh for the same piece of mud. Under these circumstances it is the bird that moves, not the plant.

It should be noted here that whilst salt marshes can grow fairly rapidly, they can, subject to certain conditions, also regress. A change in the tide pattern in the future could lead to die-back in the marsh. For instance the spit of land known as Spurn Point is at the very least the fifth such accumulation of sand and mud in that area, (since circa 700 AD). As the Holderness coast erodes so the Spit needs to adjust itself to the new conditions and is gradually moving westwards. About every 200-300 hundred years or so the sea succeeds in breaching the Spit and washes away the far end. The last occasion this happened was around the year 1600. In 1849 the Spit was reduced to a number of islands but intervention led to sea defences being erected to stabilise the land. (*G de Boer, the History of the Humber coastline*) Spurn Point, or rather the mud flats known as Spurn Bight on which the Point rests, is crucial to the sheltered aspect of the Humber estuary. It is this huge area of mud flats which keeps out the worst of the North Sea turbulent waves, the destructive power of which would soon sweep away marsh and all.

All this is by way of background to the 'problem' of the growing salt marsh at Cleethorpes. When viewed in the context of a geological process covering eons of time, perhaps our perspective ought to be less parochial than that of a watcher on the shore outside the Leisure Centre. The river Humber and its environs looks, to the casual observer, a turbid stretch of water, seemingly lifeless and unremarkable. Nothing could be further from the truth. There exists in the within Humber area an ecosystem of major importance. In the inter-tidal mudflats on both banks studies have shown (*Rees 1982 et al*) that there are, as mentioned above, dense populations of invertebrates. In many



Figure 3 this picture, taken of an area approximately two feet square, shows many shells deposited by the incoming tide. There are numerous species including Razors, limpets, cockles, mussels and clams.

instances these are in greater quantities than those recorded in other major UK sites. The most obvious beneficiaries of this resource are the thousands of birds which flock to the river all the year round. Drawn by the available food source, these inter-tidal mud flats play host to important numbers of individual species of waders and wildfowl. The estuary holds nationally important populations of eighteen species of birds and of these, eight are of

international importance. (*Life in the Humber, Anne Goodall*)

The salt marsh itself provides shelter for birds, both within the sward and among the static pool areas. Here, as on the mudflats, you can see; turnstone, knot\*, redshank\*, shelduck\*, oystercatcher,

lapwing, plover (ringed, grey & golden), sanderling\*, dunlin\*, ruff, teal, godwit, whimbrel, various swans and geese, and a confusion of gulls. (*The \* represents those species with numbers present which are of international importance*) This is not an exhaustive list and neither should it be supposed that all species are resident throughout the year. The peak time for the feeding grounds is mid-winter. September sees the start of the migratory influx, and February sees the departure for the summer breeding grounds. Some species, notably the Sanderling and Dunlin can be seen all the year round. Weather patterns over mainland Europe can have a dramatic affect on the population of the overwintering visitors. Arctic conditions on mainland Europe can cause thousands of birds to move to more favourable conditions in order to feed. Areas such as the Humber estuary are a vital link in providing a safe and sheltered environment in which to sit out the worst of the winter weather.

Although the salt marsh area looks uniform there are a number of individual species of plants to be seen to even to the casual observer. This being the winter period (at the time of writing) such plants are dormant, lacking any identifying features other than a few hardy leaves. Couple this with the fact that I am not a botanist and you will appreciate that putting names to any individual plant is difficult to say the least.



Figure 4 A typical marsh plant



Figure 5 Almost hidden but thriving

Identifying plants within the salt marsh will be the subject of another project later in the year as flowers and full stature make themselves more evident. Meanwhile North East Lincs Council is midway through its five year study of the salt marsh. What they come up with is a matter of conjecture but in any case it is Natural England that has the final say in the outcome. It will not prove an easy matter to get rid of *Spartina Anglica* as experience from around the world has shown. They can dig it out, spray it, cover it, hope it dies back of its own volition or perhaps wait for a change in the tides to erode it away. This is a very successful hybrid and will not give in without a fight. Having said that, and looking back at the history of the Humber area over thousands of years, what we do now in 2010 may show up as nothing but a blip. One thing we can be sure of is that, without intervention, the Holderness coast will continue to erode westwards. There seems no logical reason to suppose that this will not continue until the sea once again laps at the original coastline of ancient Britain, taking out marsh and all. In the case of Lincolnshire the original coast line is the base of the Wolds. As this is possibly going to take 16,000 years to achieve (as stated by J.S. Pethick, *The Physical characteristics of the Humber*) then perhaps we shouldn't worry overmuch. It's all a question of time you see.



Submitted by Peter Tappin

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## Family Website Message

**From:** [Kathleen Hollingsbee](#)  
**To:** [kathleen@tappin.org.uk](mailto:kathleen@tappin.org.uk)  
**Sent:** Sunday, February 21, 2010 5:51 PM  
**Subject:** Tappin website

Dear Tappin family,

I have had a look at your most interesting website, during my searches for some specific Grimsby pictures. Your collection is superb and has brought back many memories. I lived in Grimsby until I was 16 (1954), moved to Lincoln, and much later when I married, moved down to East Kent. I went to the Wintringham Grammar School when it was co-ed. My mother and grandmother were born in Grimsby, my grandmother (Bertha Russell) born on Corporation Road, the families of Russell and Graves lived in the West Marsh. My father (Cecil Reed) was born in Cleethorpes. His eldest brother Bill was asst. manager of Grimsby and Cleethorpes Transport.

If ever you come across pictures of the following I would be eternally grateful. Photo or postcard of my grandfather's shop (Ernest Graves, boot and shoe maker, 139 Cromwell Road, Grimsby) my mother's shop: Bertha Graves, Hairdresser, 139 Cromwell Road, Grimsby or the Cottage, Cromwell Road (which was opposite the shop) and the home of my gt-grandparents (Stephen & Ellen Graves). Would also be interested in picture of front of the premises of Burkitt's, Hairdressers, Victoria Street (not far from the beginning of the street, round the corner from Gaits the stationers). My mother was apprenticed there. Congratulations on an excellent website.

Kathleen Hollingsbee (nee Reed) Tilmanstone, East Kent

Editor