SALT MARSH MANAGEMENT

WHAT ARE THE THREATS?

NATURAL

1. Sea levels rising too fast
2. Increased storminess / erosion
3. Changing temperature and rainfall regimes affecting the vegetation
4. Loss of sediment supply
5. Changes in the tidal range and patterns
6. Channel migration and erosion

HUMAN

1. Pollution, especially oil spills
2. Agricultural pollution and eutophication
3. Shipping and recreational wash (jet skis)
4. Overgrazing and vegetation destruction
5. Reclamation of land for agriculture and for urban / industrial / leisure facilities
6. Coastal defensive embankments and coastal squeeze

WHY IS ACTION NEEDED?

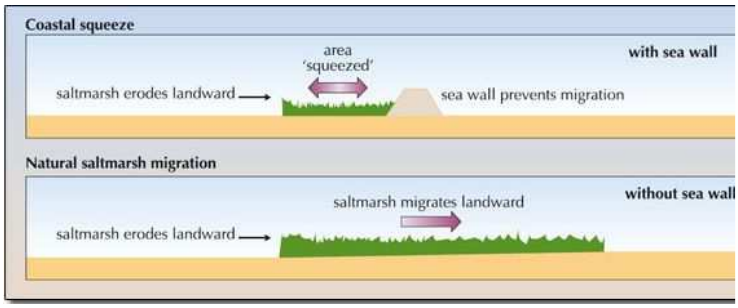
- The special habitat, ecosystem, flora and fauna need protecting and conserving as SSSI's and Nature Reserves.
- To keep the high levels of biodiversity of plants and animals; invertebrates, amphibians, birds. This is a highlyproductive environmnent and important fish spawning area.
- Defence. Salt marh absorbs a grate del of wave energy especially at high tides and reduces the changes of overtopping. A mature salt marsh belt may cut down the defensive embankment costs by as much as 80%.
- A mature salt marsh offers alarge carbon store which lowers carbon dioxide emissions.

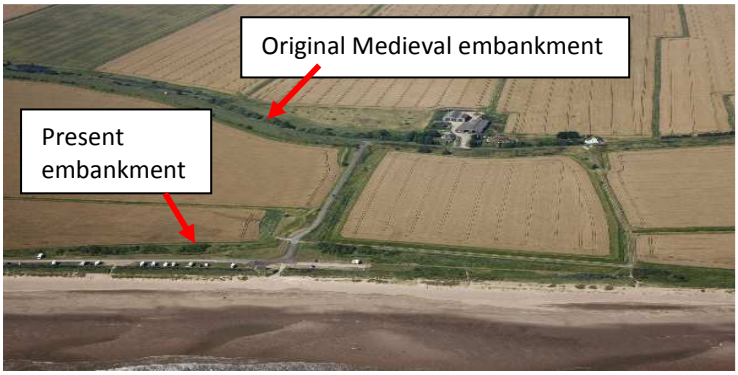
CASE STUDY : HUMBER ESTUARY AND THE LINCOLNSHIRE COAST

Coastal squeeze and the reclamation of the coastal marshes. Defensive embankments reclaim farmland and squeeze dunes and marsh.

South bank urban areas such as Grimsby sit on reclaimed marshland behind defensive barriers.

Docks and Humber bank industries have also been built on the flat, marshy coastal plain of Lincolnshire.





HOW IS SALT MARSH MANAGED?

- Managing access to prevent destruction of salt marsh plants and the associated increase in erosion.
- Designating areas as Sites of Special Scientific Interest, SSSI's, like the whole of the Humber estuary and the Cleethorpes coast to protect the fragile habitat, the salt marsh ecosystem and the flora and fauna. Local councils must have a habitat management plan and may, like Cleethorpes, have information / education centres and signs (Discovery Centre).
- Designation of Nature Reserve status like the Saltfleetby and Theddlethorpe area which has designated parking, viewing areas and planned walks.
- Grazing management on the upper to prevent destruction of the vegetation.
- Replanting of species such as Spartina to encourage further growth of the salt marsh.
- Encouraging the sedimentation of mud with brushwood groynes and sedimentation fences.
- Recharging of mud in areas where erosion is taking place.
- Building offshore breakwaters to reduce tidal and wave energy and encourage sedimentation.
- Armouring and lining creeks with rock to prevent channel migration and erosion.
- At Cleethorpes the marsh plants are being removed to prevent the northward spread of the salt marsh to the sandy beach which is of vital economic importance to the resort.
- Managed realignment or roll back to re-establish salt marsh in previously reclaimed areas, by removing embankments or cutting gaps in them (Freiston, south Lincolnshire).

FREISTON MANAGED REALIGNMENT

Information board and new marsh at high tide

This case study is an example of ecosystem restoration for the purpose of coastal flood risk reduction and habitat creation. Managed realignment describes the repositioning of an existing hard sea defence to a more landward location, allowing accommodation space for the creation of intertidal habitat; the resultant increase in the intertidal zone allowing increased flood water storage and wave attenuation. Managed realignment was implemented at Freiston Shore, Lincolnshire. Managed realignment was originally proposed at Freiston Shore due to increased rates of erosion experienced at the base of the sea wall, and higher repair/maintenance costs as a result. This sea defence was a focus of erosion due to its construction too far seaward, this made the defence a focus of wave attack. In the UK generally, whilst the purpose of managed realignment was originally focused on issues of coastal defence, its importance in helping to meet national and international targets for the maintenance and creation of key coastal habitats is also being increasingly appreciated.

As part of the realignment scheme, the existing sea defence was breached in three places, and a new landward lying secondary defence was strengthened. Linear drainage channels were also excavated within the site to facilitate sediment and nutrient delivery into the interior of the realignment area. Within the new marshland and the associated saline lagoon, some topography was created to enable birds to roost on higher ground, and a varied grazing regime produced a number of sub-habitats suitable for different bird species.