

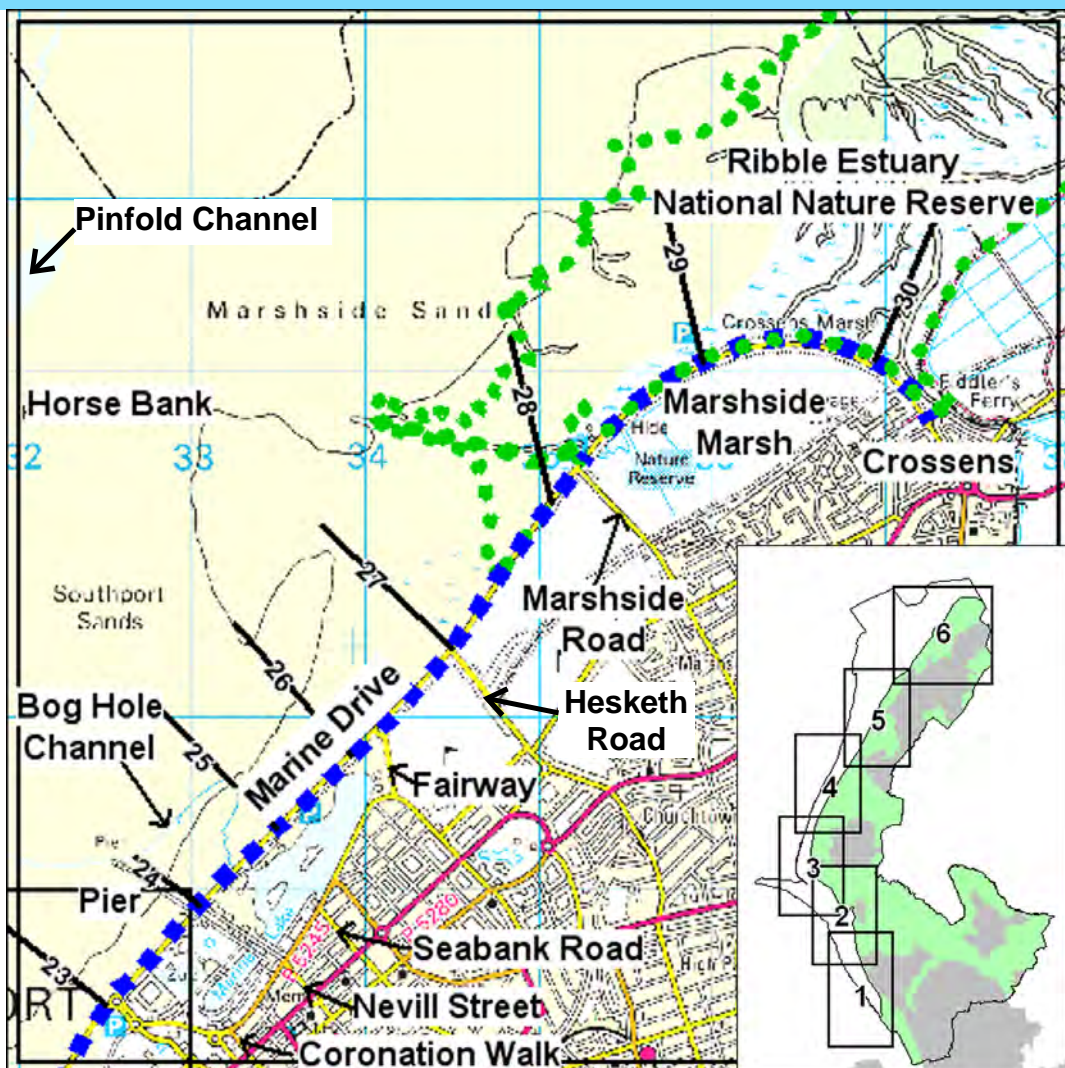
# Area 6 - Southport Summary

**Length of coastline**  
 9.2km Total  
 9.2km sea wall  
 5km fronted by saltmarsh

**Monitoring carried out**  
 Profile lines  
 Beach topographic survey  
 Saltmarsh edge GPS survey  
 Saltmarsh NVC survey  
 False colour infra red aerial photography  
 Colour aerial photography  
 Coastal defence inspections

**Designations**  
 SSSI, cSAC, SPA, Ramsar, NNR

**Coordinates**  
 Top right 338000 423000  
 Bottom Left 332000 417000



- ◆◆◆◆ Informal Rubble
- ▲▲▲▲ Rock Armour
- ▬▬▬ Sand dunes
- Saltmarsh
- ▬▬▬ Saltmarsh/embryo dune
- ■ ■ ■ Sea Wall
- ▬▬▬ Training Wall
- 1— Profile Line

**Introduction**  
 This report summarises the coastal process monitoring and coastal defence work carried out by Sefton Council 2000-2004 and provides relevant background and historic information for Area 6 - Southport.

**Coastal Defence Policy**  
 The policy for this length of coastline from Weld Road to the River Crossens is to hold the line at the position of the current defences. A large proportion of the defences are fronted by saltmarsh that provides a further defence.

**History**  
 Southport was built on reclaimed land that was once within the Ribble estuary. "South Port" was developed as a bathing resort in the early nineteenth century. Hotels were built close to the sea and in 1835 a promenade and sea wall were built to protect property.

The original Promenade, from Coronation Walk to Nevill Street, was extended north to Seabank Road but the sea wall had to be re-built many times after destructive storms.

As the sea receded further it was relatively easy to excavate the first Marine Lake and later, in 1895, to enclose its seaward edge with a Marine Drive. The Drive was below the level of spring tides, so the Lake was refilled by high tides and over-flowed naturally onto the shore when full.

In the 1880s the Cheshire Lines railway from Liverpool to Southport, via Altcar, was built very close to the high water mark along the Ainsdale to Birkdale shore. Throughout its life,

until closure in 1956, blown sand caused great problems. The Coastal Road was built over the disused rail track bed in 1968. The connecting Marine Drive was then extended north to Crossens in stages, on top of an embankment enclosing the extended Marine Lake and on sea embankments around the edges of Marshside Marsh.

The Marine Lake of 1887 did not extend beyond the Pier (1860) but was such a success that a further lake and park were joined in 1895. In the 1960s the lake was again extended north to Fairway.

Until 1998, the central part of Marine Drive was still at its original low level and was frequently closed during periods of high tides. Flooding during severe storm surges damaged the road and funfair. A new sea wall and promenade, completed in 1998, removed the need for road closures and facilitated the re-development of the seafront.

## Site Description

The Southport foreshore varies in character from the mainly sandy beaches south of the Pier to the Ribble Marshes north of Marshside Road. The whole coastline north of Weld Road, Birkdale may be considered as part of the Ribble Estuary as the foreshore widens and flattens, the ridges and runnels begin to decay and mud deposition becomes progressively more apparent.

This whole section is bounded by sea embankments built for the purpose of land reclamation, recreation and highway construction rather than as devices of coast protection. The sea embankments north of Hesketh Road have saltmarsh in front of them. Coastal process conditions across the northern section of this area were changed in the 1970's when the marsh land was reclaimed and the coastal road with sloping artificial defences was built along this length.

About 2km from the coastline and parallel with it, lies the Horse Bank. This is a broad-crested bank, composed of clean sand on its steeper seaward slope, which falls into the Pinfold Channel.

The Bog Hole Channel, all that now remains of the South Channel, is a shallow feature which originates opposite Hesketh Road about 600 metres from the coastline. It drains southwards, coming within 400 metres of the Marine Drive embankment, from where a wholly artificial offshoot connects with the Marine Lake sluices. From the Pier head, 560 metres seaward from Marine Drive, the channel swings seawards to join the Pinfold Channel.

The Pinfold Channel lies 3km from the coastline. It is a blind inlet which, like the South Channel was once a navigable branch of the Ribble Estuary. It is fed by the Crossens Channel that carries both land drainage and treated effluent from Southport and its hinterland.

The foreshore is protected by several nature conservation designations; a candidate Special Area of Conservation (cSAC), Site of Special Scientific Interest (SSSI), RAMSAR site, NNR (Ribble Estuary) and Special Protection Area (SPA).

## Summary of Coastal Processes

- The coastal defences across this section were reconstructed over the period 1997-2002.
- The area is a low energy environment with the outer banks of the estuary absorbing wave energy as they cross the shore.
- The shore is a gently sloping wide expanse of sandy deposits. Typical foreshore gradients are of the order of 1 in 500-1000.
- The ridge (crest) and runnel (trough) features continue to diverge with the shoreline, and although spreading across a greater width of foreshore, gradually disappear up to the Pier.
- Mean sediment sizes typically decrease from south to north with upper foreshore sediments progressively changing from silty sands to sandy silts and predominantly silt between Marshside and Crossens.
- The key shoreline feature associated with this section of

the shoreline is the Bog Hole channel which runs across the head of the pier offshore into the estuary. The feature can be clearly seen on both aerial photos

- Beach volume changes across this area are only compared within 1 kilometre of the shoreline. This shows that volume changes have been cyclical with a gain between 2001 and 2002 followed by a loss between 2002 and 2003. However, this would suggest that much of the beach accretion during this period has occurred in the outer sections of the estuary
- The saltmarsh area has grown significantly since the extension of Marine Drive and has gradually spread southwards.
- From 1999-2003 on the south side of the sandwinning plant growth of between 0 and 50 metres has taken place. On the Crossens side there appears to have been a mixture of gains and losses with not a great deal of difference in the overall area between surveys.

## Summary of Coastal Defence Works

The new seawall at Southport was constructed in three phases starting in 1997 and finishing in 2002, costing circa £9m. The scheme was required to protect a low lying area of the seafront which was subjected to regular tidal inundation. Because of the prominent location a high standard of finishes was required, this included artistic elements which were funded with European grant aid.

## Other Projects of Interest

Currently Sefton Council are sponsoring a PhD titled '*Past, present and future sea-level change: an integrated management approach to modelling the geomorphology and sediment dynamics of the north Sefton Coast*'.

Monitoring sites will be established to investigate how much sediment is being deposited onto, or eroded away from, the marsh surface and to determine precisely the nature of coastal changes in the area, and will provide indications and evidence for the causes of the changes. A major aim of this project is to provide a permanent record and database of the current and past status of the northern Sefton coast salt marshes. This will allow future changes to be assessed in comparison with this baseline information.

Once all the data has been collected and analysed, it is hoped that it will be possible to evaluate and model likely future changes, so as to contribute to the sustainable management of the coast.

## Further Information

The full coastal process monitoring report and all the reports in this series as well as other relevant information and a list of references can be found at:

[www.sefton.gov.uk](http://www.sefton.gov.uk)

[www.seftoncoast.org.uk](http://www.seftoncoast.org.uk)

These reports will be updated every three years and any interim reporting will be made available online. If information over and above this is required contact Graham Lymbery on 0151 934 2960 or email [graham.lymbery@technical.sefton.gov.uk](mailto:graham.lymbery@technical.sefton.gov.uk)

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