

Resource 4: Naish Cliff and Barton on Sea - background information

Location

The stretch of coastline between Naish Cliff and Barton on Sea is located in the centre of Christchurch Bay. It has been designated as SMZ4 (see map below).



(Source: BCP Council; https://twobays.net/wp-content/uploads/2022/11/SMZ_overview1-6-1200.jpg)

Geological characteristics

The cliffs along this stretch of coastline are over 30m high. However, they mostly comprise inter-bedded layers of sand and clay, overlaid by gravels, which are prone to landsliding (mass movement) and coastal erosion. As a result, cliff retreat threatens clifftop properties (see Resource 5 for photos of the area).

At Naish Cliff, there is a beach in front of the cliff line that is used for recreation and a privately owned caravan park at the top of the cliff. At Barton on Sea, there are properties along the cliff top and beach huts. These can be seen in the photos (Resource 5) and OS map extract (Resource 6). A cliff path is located landward of the coastal defences. The full length of this area is fronted by a marine Special Protection Area (SPA) designation and the cliffs are designated a Site of Special Scientific Interest (SSSI) due to their geological importance.

In the past, Naish Cliff has not been protected by coastal defences whereas Barton on Sea has experienced significant hard engineering (revetments and groynes) as well as cliff stabilisation and drainage to protect clifftop properties. Some of these measures need repair.

The area's cliff is complex, providing a unique set of challenges for engineers. Erosion of the cliff toe is caused by the sea but groundwater also causes cliff instability leading to landsliding. The influence of groundwater instability is linked to levels of rainfall. A combination of cliff toe protection and cliff slope drainage and stability measures are required to manage the rate of cliff top recession.

Produced in collaboration with Geography Southwest (<https://www.geographysouthwest.co.uk/>) and the project partners.

Shoreline Management Plan

The Shoreline Management Plan policy for this area is generally 'managed realignment', however, consideration is required of the potential impacts on coastal properties at Barton on Sea and in the transition between Naish Cliff and Barton on Sea.

- In the east, the policy intent is to maintain and improve the drainage system but acknowledge that the cliff top will continue to erode over time
- In the centre, the intent is to initially maintain the areas with defences and drainage, allowing this to adapt to provide a transitional defence to Naish Cliff
- In the west, a potential way forward is a limited intervention with 'beach nourishment' to allow adaptation of use.

Existing defences

In the west, at Naish Cliffs, the coastline is currently undefended and actively eroding.



Falling Cliffs at Naish Park (Source: <https://www.geography.org.uk/photo/2709860>).

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At Barton on Sea in the east, there is a rock revetment (fair/poor condition) at the toe of the cliffs and rock groynes (varied condition). In addition, there is an extensive drainage system (approximately 2km long) consisting of a sheet pile cut off wall and perforated drainage pipes. The system requires regular maintenance but the majority of it is still intact. There is generally a lack of beach material in front of the Barton on Sea defences.

Damages over the next 100 years associated with a Do Nothing approach are estimated at £28m.



View of Barton on Sea looking west (Source: <https://www.twobays.net/SMP2%20Final/Main%20Report/Section%204%20-%204.2%20PDZ1.pdf>).