



Cell 1 Regional Coastal Monitoring Programme Walkover Inspection Surveys 2022

South Tyneside Council

September 2022

South Tyneside Council

Walkover Inspection Surveys 2022

Contents Amendment Record

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Preamble

The Cell 1 Regional Coastal Monitoring Programme covers approximately 300km of the north east coastline, from the Scottish Border (just south of St. Abb's Head) to Flamborough Head in East Yorkshire. This coastline is often referred to as 'Coastal Sediment Cell 1' in England and Wales (Figure 0-1). Within this frontage the coastal landforms vary considerably, comprising low-lying tidal flats with fringing salt marshes, hard rock cliffs that are mantled with glacial till to varying thicknesses, softer rock cliffs, and extensive landslide complexes.

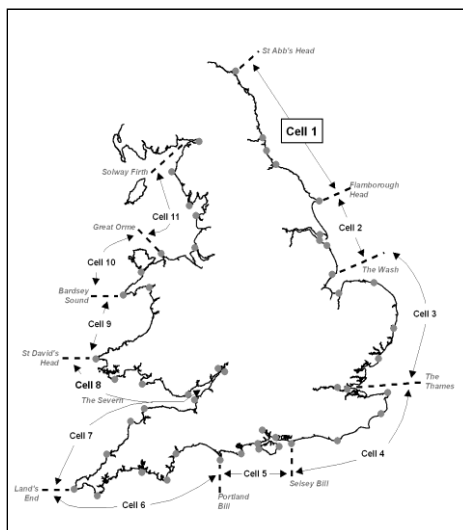


Figure 0-1 - Sediment Cells in England and Wales

The programme commenced in its present guise in September 2008² and is managed by Scarborough Borough Council on behalf of the North East Coastal Observatory. It is funded by the Environment Agency, working in partnership with the following organisations:



² Prior to 2008, coastal monitoring was undertaken on a consistent basis across Northumberland and North Tyneside as part of the (then) Northumbrian Coastal Authorities Group's monitoring programme which commenced in 2002, whilst several authorities between the River Tyne and Flamborough Head undertook their own local monitoring programmes.

The main elements of the Cell 1 Regional Coastal Monitoring Programme involve:

- beach profile surveys
- topographic surveys
- cliff top recession surveys
- real-time wave data collection
- bathymetric and sea bed characterisation surveys
- aerial photography
- walkover inspection surveys

Royal HaskoningDHV has been appointed to provide Analytical Services in relation to the present phase of the Cell 1 Regional Coastal Monitoring Programme, between 2016 - 2027.

The present report is **Walkover Inspection Surveys 2022** and provides a summary of the main findings from the walkover inspections of Durham County Council's frontage that are undertaken once every 2 years.

In addition, separate reports are produced for other elements of the programme as and when specific components are undertaken, such as beach profile, topographic and cliff top surveys, wave data collection, bathymetric and sea bed sediment data collection, and aerial photography.

1. Introduction

1.1 Study Area

South Tyneside Council's coastal frontage is approximately 14km in length (including the South Pier) extending from the River Tyne in the north to Whitburn in the south, shown in **Figure 1-1**. This frontage includes approximately 27 assets (17 man-made assets and 10 natural assets). Detailed maps showing the location of each of these assets are presented in **Appendix A**.



Figure 1-1: South Tyneside Council study area

1.2 Methodology

This section presents the approach taken by the asset inspectors for the South Tyneside Council coastal frontage.

The walkover inspection surveys for the South Tyneside Council frontage were undertaken on 24th August 2022. The weather experienced during the inspections was fine with no access or visibility problems caused by adverse weather.

The frontage has been split into a number of 'asset lengths' (Appendix A), as defined in the National Flood and Coastal Defence Database (NFCDD) that was established by the Environment Agency.

The walkover inspections cover both built defence assets and natural defence assets such as cliffs, slopes and dunes. All assets were visually inspected, photographed and graded based on their condition and an estimate made of their residual life.

For built assets the grading classification was undertaken in accordance with the Condition Assessment Manual (EA, 2012), with estimates made of the urgency of any necessary repairs. An extract of the grading classification for built assets is presented in *Table 1-1*. For ease of reference the built asset photographs presented in this report have also been bordered with the colours key indicated below.

Grade	Rating	Description
1	Very Good	'As built' condition or cosmetic defects that have no effect on performance.
2	Good	Minor defects that will not reduce overall performance of the asset.
3	Fair	Defects that could reduce overall performance of the asset.
4	Poor	Defects that would significantly reduce overall performance of the asset.
5	Very Poor	Severe defects resulting in overall performance failure of the asset.

Table 1-1: Condition assessment grading for man-made assets.

In addition to the above grading classification, for natural assets such as cliffs and slopes the same five-point activity scale used in previous walkover inspections within Cell 1 was used. This grading classification is presented in *Table 1-2*. For ease of reference the natural asset photographs presented in this report have also been bordered with the colours key indicated below.

Grade	Class	Description
1	Dormant	Features with no interaction with marine processes.
2	Inactive	Features with no visible evidence of erosion or landsliding activity.
3	Locally active	Features with localised evidence of small erosion or landsliding activity.
4	Partly active	Features with widespread evidence of small erosion or landsliding activity or areas of intense erosion or landsliding.
5	Totally active	Features with large-scale or intense erosion or landsliding.

Table 1-2: Condition assessment grading used for natural assets (cliffs/ slopes).

This report provides an overview of the findings from the walkover inspections, summarising each locality in general but also specifically identifying individual assets in 'poor' or 'very poor' condition. It is anticipated that this summary will help identify areas for maintenance or capital investment. Full details of the inspection of each asset are provided in **Appendix B**.

In addition to this report, full details of the inspection and a selection of appropriate photographs have been entered into the SANDS (Shoreline and Nearshore Database System) database and provided along with this report with SANDS viewer software.

2. Overview

The following significant findings were observed during the 2022 walkover inspection surveys:

- **Littlehaven** - The sea wall and promenade scheme, which was completed in 2014 remain, on the whole, in very good condition. However, several steps on the revetment had damaged edges and many of the treads had scrapes marks. It is thought this damage has been caused during maintenance operations to clear sediment off the stepped revetment, likely by an excavator bucket or similar.
- **Sand haven** – The dunes, particularly to the north of the bay, remain healthy with substantial volumes of sand present indicating the dune management scheme continues to be effective. The rock mattresses on the seaward edge of the prom, within the dunes to the south were locally exposed.
- **Marsden Bay** – The Redwell Steps/Lifeguard Station in Marsden Bay have been demolished and replaced with a timber stepped structure, complete in winter 2021. The structure remains in as built condition, however the retreat of the cliff adjacent to landing two should be monitored. A thin, vertical crack in the rock promontory overshadowing the structure should also be monitored closely.

It is understood that planning consent has been granted to realign the A183 coastal road landward away from the undercutting caves (in line with Marsden Bay Risk Management and Emergency Response Plan 2019). Compulsory purchase notices were noted on site during the inspection for the land landward of the road.

3. Condition Assessment

3.1 River Tyne to Rive Tyne South Pier (MA 1)

This management unit extends from the entrance to the River Tyne at the South Groyne to the South Pier. This frontage is approximately 4.9km in length (including the South Pier) and includes 7 man-made coastal defence assets, comprising revetments and seawall as well as the 2.8km long South Pier.

The grouted masonry revetment (/0101C01) starts at the boat slipway and extends along the eastern side of the wave basin to join the landward root of the South Groyne. Its management is the responsibility of the Port of Tyne. The revetment remains in fair condition, although much of the lower extent is covered by marine growth potentially concealing any defects.

Along the northern (river-facing) side of the South Groyne (/0101C02) additional armour stones have been placed on the sloping revetment. The South Groyne itself is in generally fair condition, with only occasional missing stonework and the southern side is generally less exposed and therefore in slightly better condition than river-facing side.



Grouted masonry revetment in fair condition (/0101C01)



Additional armour stones placed on river-facing side of South Groyne (/0101C02)

The dunes fronting Little Haven Hotel (/0101C03) remain stable and in good condition. Beach levels at the toe of the dune were high and the dune system remains wide and well vegetated. Despite recent efforts to prevent it, there are signs of informal access routes being used through the dunes causing local trampling damage to some areas of vegetation. There was no sign of the storm damage reported in 2018, suggesting full dune recovery since that time.



Stable dunes fronting Little Haven Hotel (/0102C01)



Local trampling of the dunes (/0102C01)

The promenade and seawall at Littlehaven were completed in May 2014 and remains, on the whole, in very good condition along both the curved central realigned section (/0201C02), and the rebuilt sections at the southern end along the alignment of the original wall (/0102C03) and promontory (/0102C04).

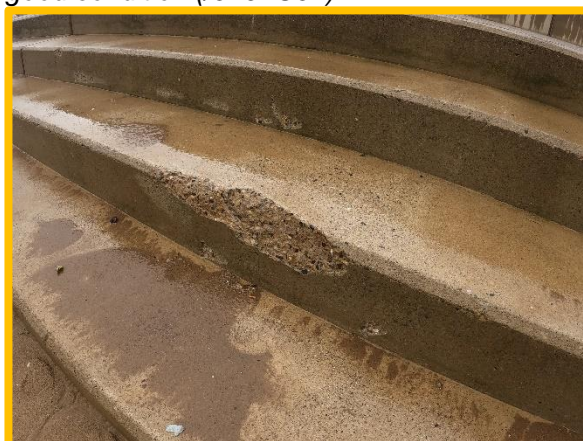
It was noted that several steps on the revetment had damaged edges and many of the treads had scrapes marks. In one location the reinforcement has been exposed as a result. It is thought this damage has been caused during maintenance operations to clear sediment off the stepped revetment, likely by an excavator bucket or similar. It is strongly recommended that a different method of clearing sediment is used in the future. A section of handrail to the south has also been damaged (unrelated to the damaged steps).



Littlehaven promenade and seawall in very good condition (/0102C02)



Littlehaven promenade and seawall in very good condition (/0102C02)



Damaged stepped edge and scrapes marks caused by maintenance activities (/0102C04)



Damaged stepped edge exposing reinforcement (/0102C04)

The South Pier is privately owned and maintained by the Port of Tyne and, as such, is subject to its own, more detailed inspection and monitoring regime. During the 2022 walkover inspection the access gates to the seaward end of the structure were open allowing the deck slab to be inspected along the full length. The deck slab appears to have been subject to numerous previous repairs and on the whole remains in fair condition. Several sections of the handrail are heavily corroded and should be replaced before they become a health and safety risk.

At the root of the structure a series of natural boulder stones have been placed at the berm of the upper beach for additional protection to the root. However, as during the 2020 inspections, these were mostly covered by beach sand.



South Pier in overall fair condition along northern face, landward end (/0103C01)



Heavily corroded section of handrail seaward of the access gate (/0103C01)

3.2 Rive Tyne South Pier to Trow Point (MA 2)

This management unit is approximately 1.7km in length and extends from the South Pier to Trow Point in the south. This frontage includes 7 assets, comprising a mix of seawalls, promenades and revetments as well as natural beaches backed by vegetated dunes.

The northern section of Sandhaven between South Pier and the children's play area has a cobble berm in front of the dunes at its northern end which narrows and thins with progression south (/0201C01) The dune condition is fair with plentiful sand but relatively spare vegetation. The dunes continue south of the children's play with a wide fronting sand beach (/0201C02), continuing in fair condition. In one area the dune fencing had been blown over and in one other area there was a missing timber fence rail, but in general the dunes and beach are in healthy condition.



Cobble berm fronting dune system (/0201C01)



Dune system (/0201C01)

The 'donkey track' extends from the South Pier, initially mid-way through these dunes before switching to seaward of the dune toe to meet the Lifeguard Station further south before returning to the main promenade. In places, the track is inundated with beach sediment. The track is in fair condition overall, although the top asphalt layer is beginning to break up, particularly to the south. It is clear significant beach clearing operations occur along the track which undoubtedly accelerates the deterioration of the surfacing.



Southern section of the 'donkey track' showing surface deterioration (/0201C01)



The 'donkey track' looking north towards South Pier (/0201C02)

At the amphitheatre, sand accumulation has resulted in high and healthy beach levels, with the backing promenade needing to be swept clean of sand (/0201C03). The timber promontory boardwalks are in fair but deteriorating condition. In one location a timber has been displaced exposing the nail fixings that are currently posing a potential H&S risk. At the confluence between the 'donkey track' and main promenade, the stone set edging is beginning to unravel and should be addressed before further blocks are lost.



Damaged timber boardwalk near the Sand Dancer public house (/0201C03)



Disused lifeguard station platform next to reconstructed wall promontory (/0201C04)

The assets fronting the lifeguard station and surf school building (/0201C05 and C06) remain in fair condition overall. Beach levels remain high concealing much of the sloping revetments. The visible portion of the toe of asset (/0202C06) was heavily abraded. It appears drainage is a problem along the promenade on this section with large puddles evident, it is likely this as a result of a combination of blocked drains (due to sediment) and a lack of fall locally. The lifeguard station platform (/0201C04) has been reinstated since the previous survey and appeared operational.



Healthy beach levels in vicinity of lifeguard station and surf school (/0201C05)



Cracking to render on wall at rear of promenade (/0202C06)

The narrow dunes at the southern end of Sandhaven (/0202C01) are well vegetated and appear largely stable. Numerous blown through sections remain and some trampling of the dune crest was evident. Beach sediment in the area appears abundant with sediment spilling onto the promenade and into the adjacent carpark. A section of previously buried rock mattresses were locally exposed in the 2022 inspection. The mattresses were in poor condition with the mesh heavily distorted creating a trip hazard. The slipway at the southern end of Herd Sands, which was rebuilt in 2016, remains buried by beach sand.



Stable but narrow dunes at south end of Herd Sands (/0202C01)



Previously buried rock mattresses exposed in 2022 (/0202C01)

3.2 Trow Point to Frenchman's Bay (MA3)

This management unit is approximately 1km in length and extends from Trow Point in the north to Frenchman's Bay in the south. This frontage includes 4 assets, comprising a mix of undefended cliff headlands and rock revetments.

The Trow Point headland (/0302C01) remains as a competent mass controlling evolution of the bay to its south. No evidence of further rockfalls was obvious in 2022, but this area should remain a focus of monitoring due to the risk of further activity.

The rock revetment and re-graded slope at Graham's Sand (/0302C02) remain in a very good condition since completion of the scheme in 2008.



Southern aspect of Trow Point (/0302C01)



Rock revetment and re-graded slope at Graham's Sand (/0302C02)

As reported previously, the headland at Target Rock (/0302C03) is the most vulnerable of the three headlands at Trow Quarry due to its partly fragmented state, with undercutting at lower levels and caves forming at the base. This said, the headland appeared stable in the 2022 inspection with limited erosion activity evident. There remains sufficient residual rock headland not to cause a concern relating to the potential outflanking of the defences in Graham's Sand and Southern Bay. A sink hole, previously infilled with granite rock armour and covered with topsoil in 2008, reopened in circa 2020. The sink hole should be infilled or clearly fenced/signposted.

The rock revetment and re-graded slope at Southern Bay (/0302C04) remain in a very good condition since completion of the scheme in 2008.



Reopened sinkhole landward of Target Rock (/0302C03)



Rock revetment and re-graded slope at Southern Bay (/0302C04)

3.4 Frenchman's Bay to Lizard Point (MA 4)

This management unit is approximately 5km in length and extends from Frenchman's Point to Lizard Point, encompassing Marsden Bay. This frontage includes 6 assets, comprising largely undefended high rock cliffs with two short sections of masonry walls at access points.

The rock headland at Frenchman's Point (/0401C04) remains in a competent form. As reported previously there are a number of arches on the southern side formed by undercutting at the toe. A major rock fall occurred within Frenchman's Bay in 2010 (/0401C04), the rock debris remains at the toe of the cliff. This failure resulted in the cliff face moving closer to the coastal path and The National Trust realigning the path, fencing and installing new warning signs.



Undercutting at base of cliffs at Frenchman's Point (/0401C04)



Retreating upper till layer to the south of Frenchman's Point (/0401C04)

The frontage between Frenchman's Bay and Camel Island is characterised by eroding rock cliffs that have formed arches and caves at the toe. The upper glacial till layer is retreating at a faster rate and in some places is threatening the coastal footpath. Notable caves can be seen in Man Haven Bay, but do not appear to have worsened significantly since the previous survey. The cliff top sinkhole to the south of Man Haven Bay remains but is fenced off.



Man Haven Bay (/0401C04)



Sink hole just south of Man Haven Bay (/0401C04)

On the access ramp down into Marsden Bay adjacent to Camel Island there is a pill box that is undercut due to weathering erosion at its base. The access path down onto the foreshore is also heavily undermined by two large caves. It is recommended that access in this area is reviewed to ensure it remains safe.



Two large caves undermining access point adjacent to Camel Island (/0401C04)



Rockfall at northern end of Marsden Bay (/0401C04)

The Lifeguard Station, steps/landing and canoe store at the bottom of Redwell steps in Marsden Bay have been demolished and replaced with a timber stepped structure, completed in winter 2021. The structure remains in as built condition but with minor abrasion damage to the lower timbers, likely caused by the large boulder noted at the toe of the structure and cliff. One area of cliff adjacent to the middle landing appears to be retreating at a greater rate than the adjacent cliffs. This should be closely monitored to ensure the pile does not become exposed.

A thin, vertical crack in the rock promontory overshadowing the structure was also noted and should also be monitored closely. It is likely this will failure in the near future and signs should be erected warning of the danger.



Disused lifeguard station and the Redwell Steps access (/0401C01)



Minor damage to structural timbers (/0401C01)



Retreating cliff line adjacent to landing two (/0401C01)



Cracking through the rock overhang adjacent to structure (/0401C01)

In the vicinity of Lot's Wife, i.e., between the Redwell Steps and the Grotto Public House (/0401C03), the cliffs have numerous small arches and caves along their base in places. Overhangs in this area suggest that future rock falls will occur, although the timing and locations cannot be predicted. A large slip, estimated to have been around 500m³ of material, occurred in Jan 2021 and was captured on video by a member of the public. Signage in the area could be increased, especially in light of the recent failure, and such it is recommended that signage is reviewed in this area.



Caves and arches along toe of cliffs in Marsden Bay (/0401C03)



Caves and arches along toe of cliffs adjacent to Wife Lot (/0401C03)

Marsden Rock remains broadly stable with cave formations at its base. The thin column of rock in one cave, reported previously, remains. Therefore, it is again recommended that a warning sign or pole barrier be placed at the entrance to the cave to restrict public access.

At Marsden Grotto (/0401C02), the masonry wall is in fair condition, in part, due to the protection offered by the cobble berm on the upper beach. However, the level of this berm was notably lower than in previous inspections, highlighted by the paint line halfway up the wall. The rock netting constructed on the cliff face adjacent to the access steps in 2007 remains in very good condition.



Caves and arches in Marsden Rock (/0401C03)



Lower beach levels at Marsden Grotto (/0401C02)

Between the Grotto and the former access road to Lizard Point Car Park (/0401C05) the cliffs generally (currently) appear more stable than those in the north of the bay and in places are fronted by small cobble berms. Along this section (and further south), the footpath and low-level railing has been moved inland to beyond the depth of large sea caves at the toe of the cliffs, in accordance with the Marsden Bay Risk Management & Emergency Response Plan produced in 2019. It is understood planning consent has been granted to realign the A183 landward away from the pinch point with compulsory purchase notices observed in the area for the land landward of the road.



Marsden Bay – relocated footpath and low-level fencing (/0401C05)



Marsden Bay – relocated footpath and low-level fencing (/0401C05)

A rock fall along the cliffs immediately in front of Lizard Point Car Park (/0402C01) in 2010 (near Jack Rock) led to its closure on public safety grounds and a policy of ‘adaptation to coastal change’ was implemented by The National Trust through alternative use of this area. The car park has since been closed and the area mostly returned to a natural state by seeding with natural vegetation. A public information board explains the reasons for the adaptation project, although it is heavily weathered and covered with other signage in 2022. Incidentally, the ‘Trow Toddle’ footpath sign in this vicinity is now obsolete in its present position since the changes in footpath and fencing location and should be re-positioned.



Natural re-wilding of the car park access road (/0402C01)



Closed car park due to large cliff failure (/0402C01)

3.5 Lizard Point to Souter Point (MA 5)

This management unit is approximately 2.4km in length and extends from Lizard Point in the north to Souter Point in the south, encompassing the bays of Byer's Hole and Potter's Hole. This frontage includes 3 assets, comprising undefended high rock cliffs.

South of Lizard Point itself to the southern end of Potters Hole (/0501C01), the frontage is typically characterised by the formation of caves, arches and sea stacks caused by erosion of the cliffs. Whitburn Coastal Park covers the area of the former Old Harbour Quarry, which has subsequently been in-filled with waste material.

In 2019, a sink hole opened in the cliff top just seaward of the footpath along Whitburn Coastal Park. The sink hole was subsequently fenced off by the National Trust. Although signage warning of the sink hole was observed to be present in 2020, it was not immediately obvious during the 2022 inspection (either obscured by vegetation or vandalised). As such, it is recommended that additional signage is installed / re-instated warning of the dangers.



Fencing to divert the public around a new sink hole at Whitburn Coastal Park (/0501C01)



Looking south towards Byers Hole (/0501C01)

This existing sink hole at Old Harbour Quarry first appeared around 2005 and has increased markedly in size since. The National Trust has now much improved the fencing off, of this area and placed a warning sign and diverted the public coastal footpath.

In 2005 this sinkhole measured 11m long by 6m wide at the cliff top, whilst in 2015 it measured 17m long by 13m wide. By 2022 it has become up to 23m long by 16m wide. The cave formation at the base of the cliffs has also increased, with a distinct hole now clearly visible from the enlarged sink hole above at the rear of the cave. At some point, a large section of cliff at this headland is likely to collapse. However, the adjacent caves still have not breached through the limestone ridge.

There are two sections of rock revetment at this headland, around the beach access routes. Both are in fair condition, but the one to the south has the rock relatively loosely placed and sitting atop a major rock ledge in front of the backing slopes.



Southern section of rock armour on (/0501C01)



Enlarged sink hole at the former Old Harbour Quarry (/0501C01)

Along the Whitburn Nature Reserve (/0502C01), erosion has in a small number of locations caused the cliff top to come in close proximity to the public footpath. Low level fencing and warning signs have been erected by The National Trust in these areas. At the southern end of the reserve, adjacent to the concrete outfall, a large sea cave is directly undermining the coastal path. Elsewhere the cliffs remain stable.

Whitburn beach (/0502C02) exhibits a different character to adjacent sections of the coast because the frontage comprises a wide raised beach (possibly comprising colliery spoil, although this is unconfirmed). As a result of this, the coastal slopes behind the raised beach are not currently exposed to marine action and therefore are highly stable at present.



Large cave at Whitburn Nature Reserve (/0502C01)



Backshore and slopes well protected by wide foreshore at northern section of Rifle Ranges (/0502C02)

3.6 Souter Point to South Bents (MA 6)

The South Tyneside portion of this Management Area (MA) is approximately 1.7km in length and extends from Souter Point in the north to the border with Sunderland at South Bents. This frontage includes 2 assets. This management area has been the focus of the Whitburn Coastal Footpath Adaptation Strategy 2022 that recommends the roll back of the coastal footpath away from the retreating cliff top. It is understood the Council is in the process of implementing the recommendations.

At the former Rifle Ranges (/0601C02) a stratum of weathered rock can also be seen above the Magnesian limestone layer. A combination of the reduction in height of the cliff and addition of a weathered rock stratum has resulted in an apparent reduction in undercutting of the cliffs in this section (when compared to further south). Local slips of the softer till layers were still observed in

2022. Within this area, local low spots in the topography appear to be funnelling water over the cliff top resulting in the scouring back of the glacial till layer

In one area, close to the mound and military building, concrete blocks have been dumped at the toe of the cliffs to slow recession.



Small slump at southern section of Rifle Ranges (/0601C02)



Surface water local scouring back the softer glacial till layer. (/0601C02)

Between the (former) Rifle Ranges and South Bents car park the limestone strata generally reduces in elevation with progression south resulting in an increasing thickness above sea level of the overlying glacial till layer. As a result, the cliffs to the north of this section are steeper and are undercut at the toe, often creating an overhang in the cliff face. Whereas to the south, the thicker deposit of glacial till is angled at its natural angle of repose, approximately 45°. The slopes are much more sparsely vegetated indicating that the cliffs are more active. This erosion has resulted in the 'scalloping' of the cliff top as local sections have differentially suffered small erosion events. It is evident the footpath has been realigned in two places in the past to avoid large slips.



Relative stable cliff line (/0601C01)



Thin limestone cliff mantled with thick glacial till layer. Generally, more active than cliffs to the north. (/0601C01)

5. Comparison with Previous Assessment

The previous formal walkover inspections across the whole study frontage were undertaken in summer 2020. The condition of the frontage overall remains unchanged and at a high standard. The past major capital schemes at Littlehaven (2014), Sandhaven (also known as Herd Sands) (2015) and Trow Quarry (2008) all remain in very good condition. This said, not insignificant damage was observed to Littlehaven stepped revetment; this is thought to be caused by sand clearing operations.

One notable improvement is the demolition of the dilapidated lifeguard station, step landing and canoe store at the foot of Redwell steps and their replacement with a new timber access structure. The structure remains in as built condition; however, the adjacent cliff and rock overhang are a concern and should be monitored.

As per the previous inspections, significant undercutting and caving was observed along much of the limestone cliffs although generally the condition does not seem to have worsened. A review of the signage in areas accessible to the public is again recommended. One area of concern is the access path down onto Marsden Bay adjacent to Camel Island where the path is undercut by two large caves.

To the south, the coastal path comes close to the cliff top in areas, particularly at the former Rifle Ranges. It is understood the Council is currently in the process of implementing the footpath rollback recommended in the Whitburn Coastal Footpath Adaptation Strategy 2022.

5. Problems Encountered and Uncertainty in Analysis

All assets were inspected at suitable stages of the tide and therefore there were no major problems encountered.

The South Groyne and the South Pier of the River Tyne were both only observed from the deck due to the nature of the structures.

Some areas of the cliff can only be observed from the cliff top due to the inaccessible nature of the foreshore.

6. Conclusions and Recommended Actions

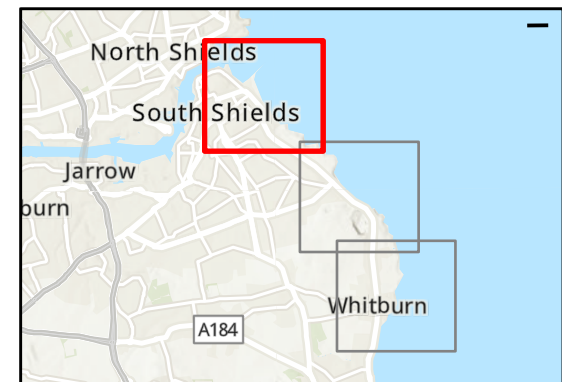
Further to the visual inspection of all assets, specific conclusions and recommendations for individual assets are given in **Appendix B**.

All condition assessment data and selected photographs have been uploaded to SANDS (Shoreline and Nearshore Database System). This includes all data and photographs from the previous inspections since 2002 that were originally held on an MS Access Databases that had become obsolete.

Appendices

Appendix A

Asset Location Maps



Legend

- Coastal Asset location
- NFCDD Asset Number

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 World_Hillshade: Esri, Ordnance Survey, NASA, NGA, USGS
 World Imagery: Maxar, Microsoft
 World Topographic Map: Esri UK, Esri, HERE, Garmin, METI/NASA, USGS
 Hybrid Reference Layer: Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, INCREMENT P, METI/NASA, USGS

Client:	Project:
North East Coastal Group	Cell 1 Regional Coastal Monitoring Programme

Title:

Figure 1 - Map 1

COASTAL ASSET LOCATIONS

South Tyneside Council Frontage

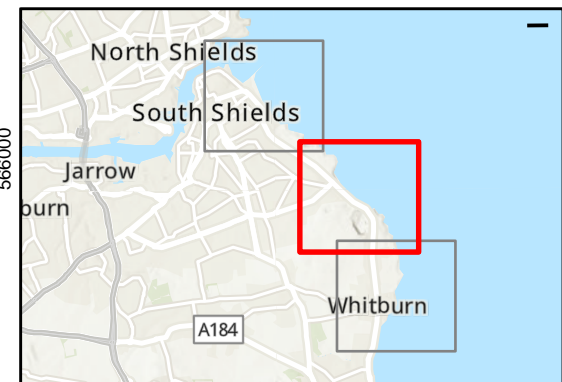
Report:

Asset Inspection Report

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	n/a	TC	NJC	A4	1:15,000

Co-ordinate system: British National Grid





Legend

- Coastal Asset location
- NFCDD Asset Number

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Client:	Project:
North East Coastal Group	Cell 1 Regional Coastal Monitoring Programme

Title:

Figure 1 - Map 2

COASTAL ASSET LOCATIONS

South Tyneside Council Frontage

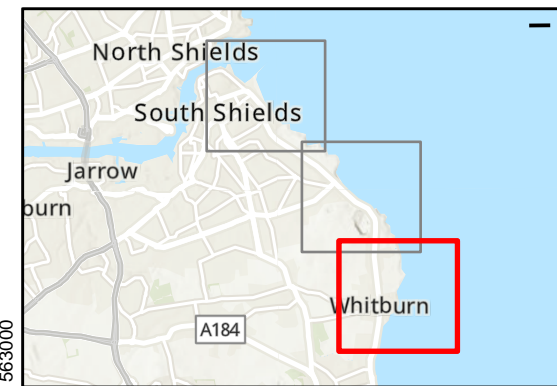
Report:

Asset Inspection Report



Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	n/a	TC	NJC	A4	1:15,000

Co-ordinate system: British National Grid





Legend

-  Coastal Asset location
-  NFCDD Asset Number

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 World Topographic Map: Esri UK, Esri, HERE, Garmin, METI/NASA, USGS
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 World_Hillshade: Esri, Intermap, NASA, NGA, USGS

Client:	Project:
North East Coastal Group	Cell 1 Regional Coastal Monitoring Programme

Title: **Figure 1 - Map 3**
COASTAL ASSET LOCATIONS
South Tyneside Council Frontage

Report: **Asset Inspection Report**

Revision:	Date:	Drawn:	Checked:	Size:	Scale:
0	n/a	TC	NJC	A4	1:15,000

Co-ordinate system: British National Grid



Appendix B Asset Condition & Recommendations

Asset Name	Description	Type	Length	Inspection Date	Inspector	Comment	Overall Condition	Residual Life	Recommendations	Urgency
121AB901B0101C01	Grouted masonry revetment. Crest wall behind (landward side of path) built to protect Little Haven Hotel against sea flooding.	Revetment - Wave Basin	115.3	24/08/2022	Royal HaskoningDHV	No significant deterioration. Generally fair to good condition, apart from occasional local voids. Significant marine growth on lower extents.	3	11-20	Infill voids - prioritise work at toe	routine
121AB901B0101C02	Grouted stone jetty with concrete deck. Acts to retain beach to Littlehaven and prevent beach sand entering the navigation channel.	Breakwater - South Groyne	372.2	24/08/2022	Royal HaskoningDHV	Minor cracks in tarmac at seaward end of structure. Additional armour stones places on the river-facing side of the groyne.	3	>20	Infill cracks in deck. Patch repairs to missing mortar and blocks.	routine
121AB901B0102C01	Sand dunes built to protect Little Haven Hotel.	Dunes	170.8	24/08/2022	Royal HaskoningDHV	Healthy and accreting / stable frontage subject to episodes of storm-erosion (followed by natural recovery).	2	>20	continue to monitor	no repairs
121AB901B0102C02	Concrete seawall to promenade and car park.	Littlehaven Seawall	279.2	24/08/2022	Royal HaskoningDHV	Original asset (landward) realigned and replaced with a new reinforced concrete seawall in 2014, sheet pile toe, stepped apron, promenade and splash wall. Remains in very good condition. Excavator bucket has damaged stepped revetment steps during maintenance.	1	>20	Repair damaged stepped revetment nosings	routine
121AB901B0102C04	Concrete seawall near root of South Pier and protecting promenade and amenity land.	Littlehaven Seawall	222	24/08/2022	Royal HaskoningDHV	Original asset replaced with a new reinforced concrete seawall in 2014, sheet pile toe, stepped apron, promenade and splash wall. Remains in very good condition. Excavator bucket has damaged stepped revetment steps during maintenance. One section of damaged handrail.	1	>20	Repair damaged stepped revetment nosings	routine
121AB901B0103C01	South Pier important to general protection both North and South.	Breakwater	2840	24/08/2022	Royal HaskoningDHV	Masonry pier with local rock armour protection.	3	>20	Port owned & to continue to maintain structure	routine
121AB901B0201C01	Stone embankment in front of dunes and fairground.	Berm - Dunes	408.8	24/08/2022	Royal HaskoningDHV	Stone revetment largely covered with sand, burying stones. Well established beach with dunes provide protection. Dunes behind are well established with vegetation cover.	3	>20	continue to monitor	no repairs
121AB901B0201C02	Undefended Frontage	Dunes	632.9	24/08/2022	Royal HaskoningDHV	Dune repairs, fencing and recent planting. Significant sand accretion.	3	>20	Continue to monitor and maintain sand fencing and control public access. One area of dune fencing blown over and should be re-erected. One timber missing from access rails.	no repairs
121AB901B0201C03	Concrete toe wall and paved promenade to front of amenity building and car park.	Wall	299.2	24/08/2022	Royal HaskoningDHV	Beach levels flush with promenade. Lots of wind-blown sand recently clearer from promenade. Several timber panels on boardwalk are damaged missing. Stone set edging is coming loose in places.	2	>20	One or two timber panels on 'boardwalk' areas need replacing	routine
121AB901B0201C04	Small concrete wall at promontory.	Wall	29.3	24/08/2022	Royal HaskoningDHV	New structure built as part of 2010 promenade works. Beach levels low in 2022 exposing undermining of toe.	3	11-20	Control of wind-blown sand required	no repairs
121AB901B0201C05	Concrete sloping revetment to promenade and various buildings.	Revetment	106.9	24/08/2022	Royal HaskoningDHV	Structure only partly visible due to high beach levels.	3	>20	Monitor beach levels, inspect lower elements of structure if exposed.	no repairs
121AB901B0201C06	Concrete revetment of varying level to road and buildings. Concrete toe.	Revetment	43.1	24/08/2022	Royal HaskoningDHV	Structure only partly visible due to high beach levels.	3	>20	Monitor beach levels and inspect revetment toe if beach levels fall.	routine
121AB901B0202C01	Dunes covering buried gabions.	Primary Defence = Dune	254.1	24/08/2022	Royal HaskoningDHV	Well vegetated but narrow dunes with numerous blown through sections, some of which have recent cobblestone armouring. Slipway buried by sand. Paths through dunes now formalised. Rock Mattresses on landward edge of the prom exposed locally.	2	6-10	Repair damaged rock mattresses.	routine
121AB901B0302C01	Undefended Frontage	Cliff / Scarp - Trow Point	464.7	24/08/2022	Royal HaskoningDHV	Local rock falls and local slumping in soft material.	3	>20	Monitor for safety of public access	routine

121AB901B0302C02	Rock revetment	Rock revetment - Graham's Sands	241.1	24/08/2022	Royal HaskoningDHV	No change evident since previous survey. Rock armour toe revetment in front of regraded coastal slope. Granite rock armour ties into existing headlands. Scheme complete in Nov-08. Additional protection provided by rock outcrops on foreshore.	1	>20	None.	no repairs
121AB901B0302C03	Undefended Frontage.	Cliff / Scarp - Target Rock	147.3	24/08/2022	Royal HaskoningDHV	Caves and overhangs at base of cliffs. Sink hole infilled but still poses a H&S risk.	3	>20	Fence off sink hole or infill and cap.	routine
121AB901B0302C04	Rock Revetment	Rock Revetment - Southern Bay	175.3	24/08/2022	Royal HaskoningDHV	No change evident since last survey. Rock armour toe revetment in front of regraded landfill embankment. Granite rock armour ties into existing headlands. Scheme completed Nov-08. Additional protection provided by rock outcrops on foreshore.	1	>20	Routine cut-away loose geotextile.	no repairs
121AB901B0401C04	Undefended Frontage	Cliff / Scarp - Frenchman's Bay and Marsden Bay (north)	261.3	24/08/2022	Royal HaskoningDHV	No significant change evident since last survey. Failure along 50m section in Mar-10 causing loss of footpath. Other areas of arches, caves, overhangs and slumps. One sink hole. Access Path to the north of Marsden Bay undercut by two large caves.	4	>20	Realign footpath landward. Public information/warning signs.	routine
121AB901B0401C01	Timber Access Structure	Timber Access Structure	54.5	24/08/2022	Royal HaskoningDHV	The Lifeguard Station, steps/landing and canoe have been demolished and replaced with a timber stepped structure, completed in winter 2021. minor abrasion damage to the lower timbers, One area of cliff adjacent to the middle landing appears to be retreating at a greater rate than the adjacent cliffs. A thin, vertical crack in the rock promontory overshadowing the structure was also noted.	1	>20	Monitor adjacent cliffs and overhanging rock promontory.	No Repairs
121AB901B0401C02	Old masonry wall to Public House at base of eroding cliff. Rock netting and new access steps constructed in 2007.	Wall - Grotto	67.2	24/08/2022	Royal HaskoningDHV	Masonry wall in good condition, protected by high cobble berm, although berm much lower in 2022. Rock netting in very good condition.	3	>20		no repairs
121AB901B0401C03	Eroding cliff. The National Trust realigns cliff top path landwards when rock falls occur.	Cliff / Scarp - Marsden Bay (Central)	655.7	24/08/2022	Royal HaskoningDHV	cliff with numerous caves and arches at toe and stacks (Lot's Wife, Marsden Rock) on foreshore. One thin column in a cave within Marsden Rock accessible to public.	4	>20	Improve warning signage of 'risks from rock falls' and 'do not enter caves' between Redwell Steps and Marsden Grotto (including Marsden Rock).	routine
121AB901B0401C05	Undefended Frontage	Cliff / Scarp - Marsden Bay (South)	527.5	24/08/2022	Royal HaskoningDHV	Cliffs locally unstable with local cliff falls. Cliff top moved landward out of undermining zone.	3	6-10	Monitor as part of Marsden Bay Risk Management & Emergency Response Plan (2019) and move safety rails, footpath and warning signs landward when necessary.	routine
121AB901B0402C01	Undefended Frontage	Cliff / Scarp - Lizard Point	789.7	24/08/2022	Royal HaskoningDHV	Cliffs regularly failing, with recent rock falls between lighthouse and Lizard Point Car Park. Remaining sections are unstable, with overhangs, caves and extensive fissures. Further cliff failures to be expected. Car park and access have been closed to reduce risk. Area has been re-wilded by The National Trust.	4	1-5	Warn public. Realign fencing /warning as necessary.	urgent

121AB901B0501C01	Undefended Frontage	Cliff / Scarp - Whitburn Coastal Park	858.7	24/08/2022	Royal HaskoningDHV	Extensive cave, arch and stack features. Sink hole at Old Harbour Quarry has enlarged much since 2005 and cave at base has breached, but warning signs and hand rails have been improved. New sink hole opened on footpath between 2018 and 2020 inspections and area has been fenced off by the National Trust.	5	1-5	Monitor for sink holes / collapses & relocate warning signs and railing as necry	urgent
121AB901B0502C01	Undefended Frontage	Cliff / Scarp - Whitburn Nature Reserve	653.7	24/08/2022	Royal HaskoningDHV	Localised erosion and cave formation cutting back cliff top near to path. Large cave undermining footpath at southern of nature reserve.	3	>20	Longer term realignment of footpath, railing and warning signs if necessary.	routine
121AB901B0502C02	Whitburn Beach. Coastal slope behind a wide raised beach	Cliff / Scarp - Rifle Ranges (North)	354	24/08/2022	Royal HaskoningDHV	Relict cliff behind healthy raised beach of coarse material.	2	>20	Continue active monitoring	routine
121AB901B0601C02	Eroding cliff.	Cliff / Scarp - Rifle Ranges (South)	555.5	24/08/2022	Royal HaskoningDHV	Many areas eroding with active local slumps, some very close to footpath, localised erosion by land drainage outfall impinging on footpath, and headwall has been lost to a local slump.	4	11-20	Implement roll back of footpath in line with Whitburn Coastal Footpath Adapatation Strategy 2022	routine
121AB901B0601C01	Eroding cliff.	Cliff / Scarp - Whitburn	1018	24/08/2022	Royal HaskoningDHV	Locally active cliff. Erosion getting close to path in places. Most active to the south where glacial till layer is retreating back at a greater rate.	4	11-20	Implement roll back of footpath in line with Whitburn Coastal Footpath Adapatation Strategy 2022	routine