

Case Study 6 – North-West England

6.1. Introduction

For the purposes of this study two sites have been selected from the coastline of north-west England; these comprise the Morecambe Bay frontage from Heysham in the south to Grange-over-Sands at the mouth of the River Kent, and to the north the coastline between Whitehaven and Maryport, which lies to the west of the Lake District. The Heysham to Grange-over-Sands case study site borders Morecambe Bay, which is a large estuary lying just to the south of the Lake District National Park, and forms the most extensive coastline of intertidal mudflats and sand to be found in the country, amounting to over 310km² (120 square miles). The River Kent flows into Morecambe Bay in the north and, together with the Bay forms a site of national and international significance in terms of its nature conservation interest.

The northern case study from Maryport to Whitehaven is a frontage with a rich industrial heritage with strong connections with the coal mining and tobacco trades.

6.1.1. Geology & Geomorphology

The coastline of Morecambe Bay comprises rocks dating from the Carboniferous, Permian and Triassic Periods, which are overlain by glacial, fluvial and other superficial deposits. At the northern end of Morecambe Bay, there are outcrops of Lower Carboniferous limestones, which form impressive cliffs and scars, which overlook the open intertidal mudflats and saltmarshes that fringe Morecambe Bay itself. The River Kent discharges into the north of Morecambe Bay and, with the River Lune to the south, these rivers provide a strong physical connection between the bay and their catchments.

This part of the coast is generally low-lying with occasional outcrops of solid geology on the shore and with a low cliffline at Heysham to the south. The relatively sheltered Morecambe Bay shares a common physical identity around its margins (Natural England, 2013¹) and forms, essentially, a single sediment cell.

With respect to the northern case study, the coastal margins form the West Cumbria Coastal Plain (Natural England, 2013¹; 2015²). The coastline comprises mainly sedimentary sandstones, which overlay Carboniferous coal measures and limestone outcrops, which are found to the south near St Bees Head. This landscape was glaciated, being originally covered by the ice sheet, which, on its retreat, left a mantle of glacial till that has subsequently been reworked by natural processes. To the north of St Bees Head, the coastline consists of a mixture of intertidal flats, beaches, together with coastal defences. Material is transported from south to north along this coastline, in the direction of the Solway Firth.

6.1.2. Coastal Processes

The southern end of Morecombe Bay between Heysham and Morecambe is protected by defences and this will continue, whilst to the north the more open, less developed coast will be allowed to evolve more naturally except where property and infrastructure becomes at risk. The resistant headlands between Heald Brow and Arnside to the north will continue to function naturally (Halcrow, 2010³).

At Grange-over-Sands at the northern end of Morecambe Bay the town is defended, however, continued accretion and build-up of saltmarsh means limited intervention will be required between Whitehaven and Maryport; the main towns are defended as is the coastal railway line. However, in the longer term, parts of this frontage may be allowed to evolve naturally (Halcrow, 2012³).

6.1.3. The Coastal Environment

The Heysham to Grange-over-Sands coastal frontage bordering Morecambe Bay comprises a site of national and international importance on account of its wide range of coastal habitats, including salt marshes, mudflats, sandy beaches, vegetated shingle and intertidal reefs. These habitats are designated nationally and internationally as Sites of Special Scientific Interest, a Special Area of Conservation, Special Protection Area and RAMSAR site; the location is particularly important for the wildlife that these habitats support, including waders and water fowl populations (Natural England, 2013¹). The habitats support thousands of over-wintering wild fowl and waders, including species such as oystercatcher, knot and pink-footed geese, as well as rare insects and species that colonise the extensive reefs (Natural England, 2013¹). To the north, the coastal edge of Morecambe Bay comprises wide, open intertidal sand flats backed by low cliffs of limestone which add further to the exceptional biodiversity of this part of the coast of the north-west.

The coastline between Maryport and Whitehaven to the north can be described as the 'West Cumbria Coastal Plain' (Natural England, 2015²) and comprises a diverse range of habitats including mud flats, shingle beaches, reefs and soft and harder cliffs to the south at St Bees. This coastline comprises a mixture of coastal defences, intertidal flats and beaches. This frontage is more developed than to the south, with centres of population at Whitehaven, Workington and Maryport, which each have a rich cultural heritage.

6.1.4. Coastal Heritage

At the southern end of Morecambe Bay at Heysham are the ruins of St Patrick's Chapel, which was built in the eighth and ninth centuries. Alongside the chapel are graves that have been cut in the solid rock; these were illustrated by William Daniell in his '*Voyage Round Great Britain*' when he passed along this coast in 1815 (Daniell & Ayton, 1814-1825⁴). In the nineteenth century, iron rails were exported through Maryport for the construction of railways across the world, the harbour being overlooked by the Roman fort of Alauna, which was constructed high above the town. To the north, the town of Whitehaven developed much later and was planned in the seventeenth century with a street grid pattern. In fact, Whitehaven was perhaps the first planned town of this kind to be developed and still retains much of its Georgian character. The once busy docks and harbour, constructed in the eighteenth and early nineteenth centuries, are now largely converted for leisure purposes.

6.1.5. Coastal Art History

The north-west coastal region extends from the Welsh border northwards past Merseyside, Liverpool, and the Ribble Estuary to Blackpool, and on to Lancaster, Morecambe and the Solway Firth, the border with Scotland. The frontage includes diverse landscapes of estuaries, mudflats, sand dunes and cliff lines, as well as heavily developed port and industrial areas at Birkenhead and Liverpool, with their long history of links to shipping and trade, and the tourist centres of Blackpool and Morecambe. This part of the British coast has attracted slightly less attention than some of the other coastal regions, with artists perhaps choosing to travel inland and paint the scenery of the Lake District or the Pennines. Nevertheless, the north-west coast was visited by some of our most important artists, including J. M. W. Turner, who painted '*Lancaster Sands*' in 1825-1827 and '*Whitehaven, Cumberland*' in 1834-1836.

In the early part of his '*Voyage Round Great Britain*' in 1815, William Daniell produced twelve views of the north-west coast of England, which are accompanied by detailed descriptions of the coast by his co-author, Richard Ayton (Daniell & Ayton, 1814-1825⁴). With respect to the two chosen case study sites within the north-west coast, Daniell painted views of lower Heysham, Lancaster, Castle Head near Grange-Over-Sands, Whitehaven and Maryport.

In the early part of the twentieth century the prolific watercolour artist, Alfred Robert Quinton, who worked for the postcard company J. & F. Salmon Limited of Sevenoaks, painted views of the north-west coastal resorts, including Morecambe and Grange-over-Sands, whilst the Victorian artist, Sidney Percy, who was best known for painting Highland scenes, produced a magnificent view from the high ground behind Grange-over-Sands, looking out across Morecambe Bay. In 1997, the architect and watercolourist, David Addey, retraced William Daniell's footsteps and painted the scenes from as close as possible to William Daniell's original vantage points. These offer comparisons of changes that have taken place over the last 180 years.

6.1.6. Case Study Sites

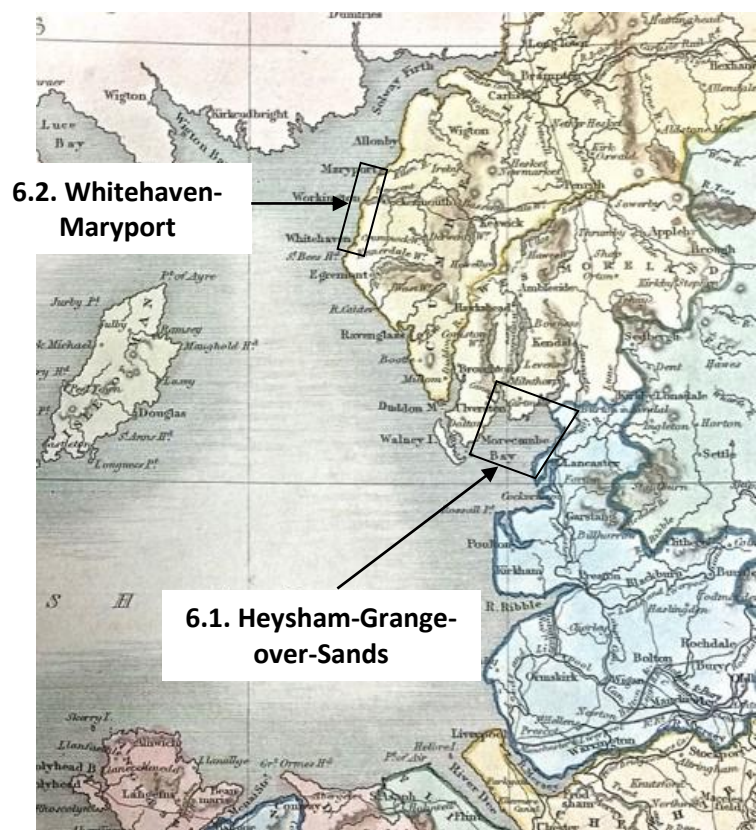
Two case study sections of coast are examined in more detail in the following pages, these are:

- Heysham to Grange-over-Sands, Cumbria. The site encompasses the shoreline of Morecambe Bay and the estuary of the River Kent. The frontage has a coastal length of approximately 40km (25 miles).
- Whitehaven to Maryport. This case study site extends from the northern side of St Bees Head in the south to the port of Maryport, a distance of approximately 24km (14m).

6.2. References

1. Natural England, 2013. 'National Character Area Profile 31: Morecambe Coast & Lune Estuary'. www.naturalengland.org.uk.
2. Natural England, 2015. 'National Character Area Profile 20: Morecambe Bay Limestones'. www.naturalengland.org.uk.
3. Halcrow, 2013. 'North-West England & North Wales SMP2'.
4. Daniell, W. & Ayton, R., 1814-1825. 'A Voyage Around Great Britain'. Longman & Co. London.

Fig. CS6.1.1. North-West of England Case Study Sites.



Case Study 6.1 – Heysham to Grange-over-Sands, Cumbria

1. Location

The case study site lies within Morecambe Bay, which is the largest expanse of intertidal mudflats and sands in the United Kingdom, covering a total area of approximately 310km² (120 square miles).

2. Why was the Case Study Site selected?

The site represents an excellent example of a large estuary with extensive sand and mudflats, backed by a low coastline, which may be vulnerable to the impacts of climate change. The towns and villages around the bay were visited by artists since the early nineteenth century, which allow comparisons to be made in terms of landscape and development change over that time.

3. Summary of the Geology, Geomorphology & Coastal Processes

The solid geology of the north-west coast of England comprises rocks of the Carboniferous, Permian and Triassic periods, which are overlain by superficial glacial, fluvial and marine sedimentary deposits. With a backdrop of the fells of Cumbria and the estuaries of the River Kent to the north and the Lune to the south of Heysham the area is dominated by the broad expanse of Morecambe Bay, which is backed by a low-lying strip of saltmarshes, mudflats and sand (Natural England, 2013¹).

Whilst key centres of development, such as at Heysham and Morecambe, are defended by a range of coastal protection measures, elsewhere, outside the developed areas, coastal frontages are being allowed to evolve naturally. An anticipated increase in sea level rise may provide the opportunity in the long term to allow for the creation of new habitats, and to improve flood management by moving defences inwards where this is possible. To the north at Grange-over-Sands, the developed frontage is also defended, however, here, the natural accretion and expansion of the saltmarsh is likely to have a beneficial effect in terms of limiting the need for further protection measures in the future (Halcrow, 2010²).

4. How can the art imagery resources inform us of changes that have affected this coastal zone?

The coastline between Heysham and Grange-over-Sands was visited and painted by a number of artists since the early nineteenth century. William Daniell RA passed along this coastline as part of his northern journey around the whole of the British coast in 1815 and, a century later, the prolific watercolour artist, Alfred Robert Quinton, painted views of the developing towns of Morecambe and Grange-over-Sands. The artist, David Addey, retraced Daniell's footsteps, painting from the same locations, in 1994.

The artworks provide the opportunity to compare changes that have affected the coast in terms of impacts on coastal heritage, shoreline conditions, and developmental change over the last 200 years. Trends in terms of coastal erosion impacts and sediment and habitat change can also be examined through these artworks.

5. Key issues that can be learnt from this site.

At Lower Heysham, Daniell's view shows the coastline near St Patrick's Chapel and the series of grave stones cut into the sandstone at the top of the low cliff. There is evidence of coastal erosion here with a number of walls and other historic structures lost over time. At Morecambe artworks by A. R. Quinton show the nature of the developing town in the early twentieth century, with new coast protection works being illustrated, as well as some key tourism-related public structures, such as the central pier and clock tower. Some of the elegant properties lining the seafront and illustrated in Quinton's views are visible in the present day photographs.

At the time of Daniell's visit, there was little development around the northern coast of Morecambe Bay, but he did select a view of *Castle Head*, a mansion near Grange-over-Sands, which is now a field studies centre. Here there has been reclamation in front of the property, although the property itself remains relatively unchanged. At Grange-over-Sands, there are early twentieth century watercolours depicting the coastline with its seawalls and rocks exposed on the upper foreshore. There has been extensive accretion over time, and it is likely that the location will have an increasing degree of natural defences with the development of sandflats and saltmarsh. Clearly, the impacts of sea level rise provide uncertainty in the medium to longer term.

6. References

1. Natural England, 2013. 'National Character Area Profile 31: Morecambe Coast and Lune Estuary'. www.naturalengland.org.uk.
2. Halcrow, 2013. 'North-West England and North Wales SMP2'.



Fig. CS6.1.2.-6.1.4. This sequence of images shows the historic site adjacent to the coast near the eighth century St Patrick's Chapel (Grade 1) at Heysham. William Daniell RA visited the site whilst travelling north up the coast in 1815. In his view the graves are clearly defined in the sandstone platform with its boundary wall and seat overlooking across Morecambe Bay. A wall extends round to a crenelated feature on the headland below. In David Addey's watercolour of 1994 (**CS6.1.3. middle**) the graves have become weathered and all the structures seaward that are shown in Daniell's view have been lost through coastal erosion, as also illustrated in the present day photograph (**CS6.1.4. bottom**). Whilst the rate of cliff retreat may be gradual or episodic, loss of coastal heritage sites is a significant issue in terms of shoreline management and heritage bodies play a key role in formulating long-term coastal policies.

Images courtesy of CS6.1.2. David Addey; CS6.1.3. Dave McAleary/Shutterstock.



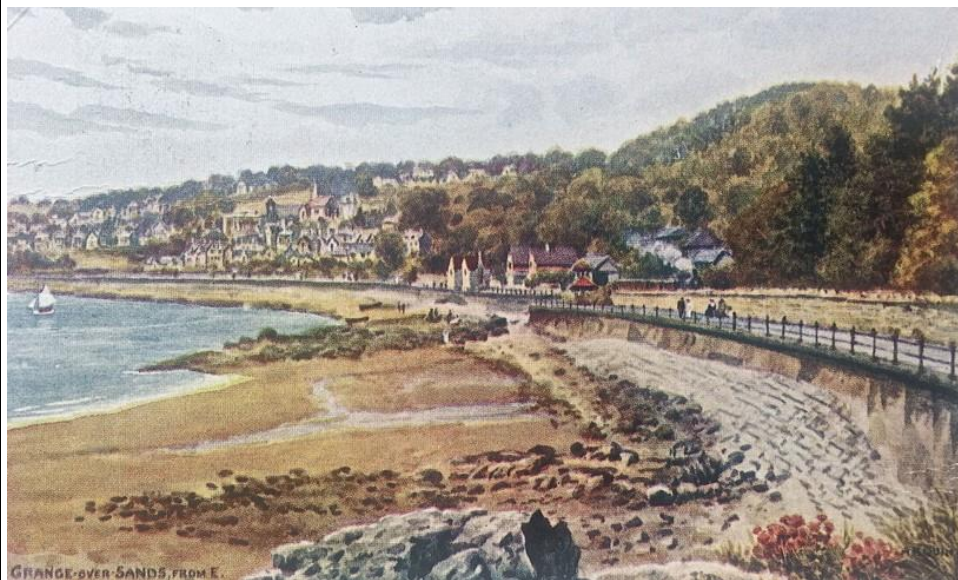
Fig. CS6.1.5.-6.1.7. The very detailed watercolours (**CS6.1.5. top** and **CS6.1.6. middle**) were painted c.1920s by Alfred Robert Quinton and show the fashionable resort of Morecambe. The view left shows the new seawall taken from the town's central pier and illustrates the nature of its construction. The watercolour (middle) shows the pier itself, which opened in 1869 and which was seriously damaged by fire in 1991; it was demolished in 1992. Standing in front of the pier entrance is the grand Clock Tower (Grade II), which was constructed in bands of brick and red sandstone. Many seaside piers have been lost over the last fifty years in particular. Such watercolours can often provide the only record of their original design and construction and are, therefore, valuable records recording heritage through the medium of watercolour art.

Images courtesy of Fig. CS6.1.5. and CS6.1.6. Salmon's; Fig. CS6.1.7. Tomasz Wozniak/Shutterstock.



Fig. CS6.1.8.-CS6.1.10. show views of the elegant seaside resort of Grange-over-Sands, overlooking Morecambe Bay.

The artist, A. R. Quinton, painted these two views of the coastline (**CS6.1.8. top** and **CS6.1.9. middle**) which show the nature of the beach, seawall and promenade with the coastal railway link behind.



The present day photograph (**CS6.1.10. bottom**) shows the nature of the Bay at Low Water, which appears to show significant accretion since Quinton's views were painted. This illustrates a continuing trend for accretion of sand here, which will assist in protecting the frontage in a natural way in future decades.

Images courtesy of CS6.1.8. and CS6.1.9. Salmon's; CS6.1.10. Davie Bevis ©/Geograph.





Fig. CS6.1.11.-CS6.1.13. provide views of 'Castle Head', a mansion near Grange-over-Sands. It was built a century before Grange-over-Sands started to develop, hence this property was illustrated by William Daniell RA on his '*Voyage Round Great Britain*' (Daniell & Ayton, 1814-1825).



The breakwater on the left was built in 1778/79 and much later the land was reclaimed, as can be seen in David Addey's watercolour painted in 1994 (**CS6.1.12. middle**) and in the present day view.

The cast iron monument to the owner of Castle Head, John Wilkinson, can be seen on the crag in Daniell's view but was later moved to nearby Lindale Village.

The views illustrate gradual changes that have modified this picturesque landscape over time.

Images courtesy of CS6.1.11 (top) Grosvenor Prints; CS6.1.12. (middle) David Addey; CS6.1.13. (bottom) the Castle Head Field Studies Centre.





Fig. CS6.1.14. (above) This oil painting by Sidney Percy, painted in 1874 and entitled '*Grange-over-Sands*' offers a panoramic view of this beautiful location from the high ground above the town.

Image courtesy of The Willow Gallery, London.

Fig. CS6.1.15. shows a view over the rooftops of the town and across Morecambe Bay at Low Water; the extensive and accreting sand and mudflats are clearly shown.

Image courtesy of Kevin Eaves/Shutterstock.



Case Study 6.2 – Whitehaven to Maryport, Cumbria

1. Location

This study site is located on the north-west coast of England, looking out across the Irish Sea towards the Isle of Man. It extends from Whitehaven in the south to Maryport in the north, a distance of approximately 24km (15m).

2. Why was the Case Study Site selected?

The site was selected to illustrate artistic representations of two industrial towns that developed primarily for the export of goods during the nineteenth century. The sites illustrate changes that have affected the architecture of the towns over time.

3. Summary of the Geology, Geomorphology & Coastal Processes

The study site is located on the coastline of a narrow plain, which is bordered on the landward side by the Lake District National Park. The coastal plain is dissected by a number of rivers which flow from the high ground of the Cumbrian Fells to the east, to discharge into the Irish Sea (Natural England, 2015⁷).

The landscape of this coastal margin is geologically complex and is composed predominantly of sedimentary sandstones. From St Bees Head at the southern end of the study site, Carboniferous Period coal measures and limestones outcrop, which are overlain by the New Red Sandstone. This coastal frontage is diverse and open, comprising sand, shingle and pebble beaches backed by low cliffs of glacial origin, as well as those of sandstone, the cliffs at St Bees Head in the south being the most dramatic along the frontage.

The principal settlements of Whitehaven and Maryport are protected by coastal defences and although open coast exists between the two towns the coastal railway line is also defended (Halcrow, 2013²).

4. How can the art imagery resources inform us of changes that have affected this coastal zone?

This case study looks in particular at the towns of Whitehaven and Maryport and their development since the early 1800s. Views of the two towns are limited however. William Daniell did paint views of the harbours of both towns during his '*Voyage Round Great Britain*' (Daniell & Ayton, 1815-1825³). These two views offer interesting comparisons to those painted by David Addey in 1994. Alongside the descriptions provided in Daniell's book, the growth of these towns and the subsequent reduction in traditional industries, regeneration and the protection of their heritage features are illustrated.

5. Key issues that can be learnt from this site.

The sequences of images of Whitehaven and Maryport describe, first, the flourishing ports of the nineteenth century and, in the 1990s, reminders of the great industrial heritage of these towns. Today the heritage features are highly regarded and provide a clear reminder of the history of this part of the north-west coast. The decline of past industries has resulted in the coastal towns turning to tourism to a much greater degree, taking the opportunity to highlight the rich social, cultural heritage of this part of the Cumbrian coast.

6. References

1. Natural England, 2015. '*National Character Area Profile 20: Morecambe Bay Limestones*'. www.naturalengland.org.uk.
2. Halcrow, 2013. '*North-West England and North Wales SMP2*'.
3. Daniell, W. & Ayton, R., 1814-1825. '*A Voyage Round Great Britain*'. Longman & Co. London.

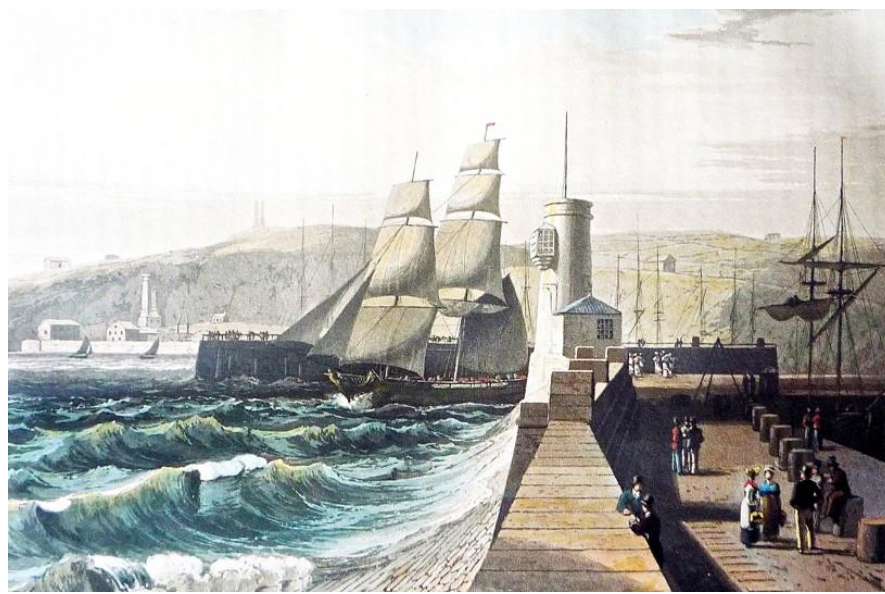


Fig. CS6.2.1.-CS6.2.3. show views of the harbour of Whitehaven between 1815 and the present day. The aquatint engraving by William Daniell RA (top) shows the flourishing port that was founded by the Lowther family following discovery of the coal and iron ore that stimulated its development.

The architect and watercolour artist, David Addey, retraced Daniell's footsteps painting from as closely as possible to Daniell's vantage points in the 1990s. The view (middle) shows that the pier with its tower still exists, although the commercial activity of the port is much reduced. The above ground workings of the William Pitt coal mine (visible left in Daniell's view) have now gone, as have the two chimneys 'the Tobacco Pipes' which were used for the destruction of contraband tobacco; these were demolished in 1923 (Addey, 1997).

The present day view shows the well-preserved harbour. Such historical images are of particular interest to those wishing to discover the architectural and social history of such locations and the changes that have been necessitated largely for economic reasons over the last two centuries.

Images courtesy of CS6.2.1. Grosvenor Prints; CS6.2.2. David Addey; CS6.2.3. © Stock1970/Shutterstock.

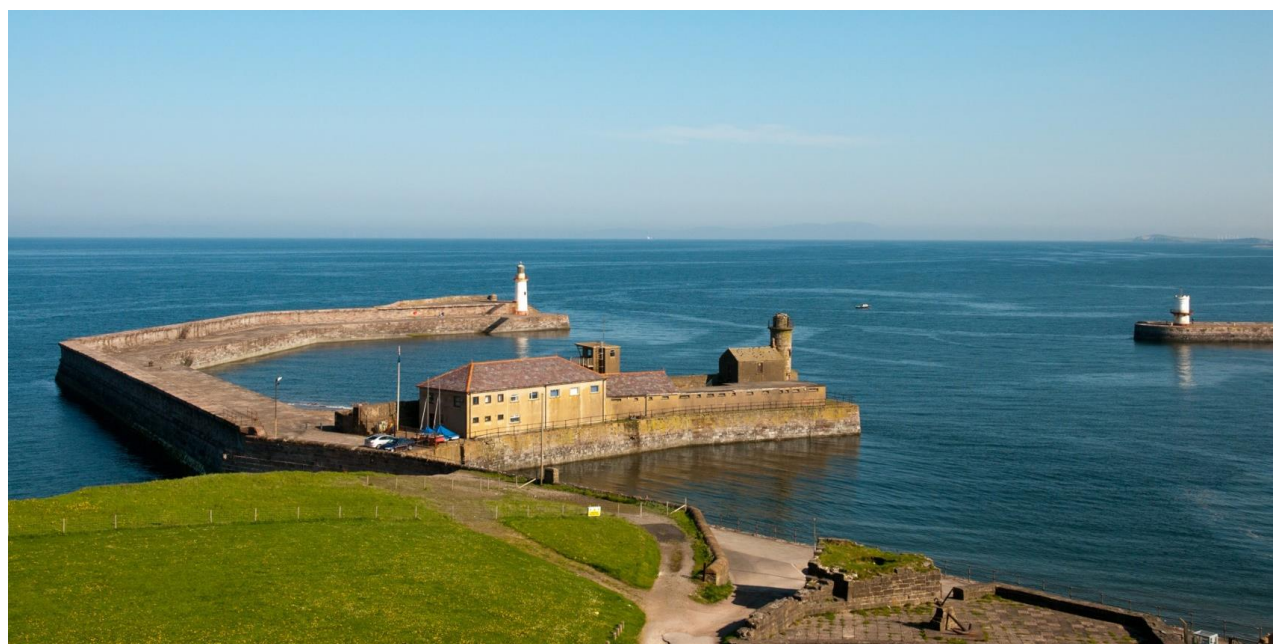




Fig. CS6.2.4.-CS6.2.6. like the previous views of Whitehaven, these reflect the changes to the port of Maryport since 1815. Daniell's view (top) shows the substantial timber and masonry harbour breakwaters, which were already starting to break up at the time of his visit; these were later rebuilt in stone.



The view by David Addey (middle) shows the harbour from a similar vantage point to that chosen by Daniell. The former docks and waterfronts are now being developed as part of a regeneration scheme for the town.

Such historical imagery can inform records of heritage changes and losses, Conservation Area planning and management and issues such as repair or reconstruction of harbour walls and coastal defences where there may be uncertainty of the nature of the original civil engineering construction.



Images courtesy of CS6.2.4. Grosvenor Prints; CS6.2.5. David Addey; CS6.2.6. (bottom) J. & M. Norgate.