

CASE STUDY 3F – WEST CORNWALL

Case study area: West Cornwall, UK.

Main geomorphological types: Hard cliffs at the rear of sandy beaches.

Main coastal change processes: Beach change and potential coastal squeeze.

Primary resources used: Art.

Summary: The study area was selected to examine the relationship between beaches (very important for tourism) and the hard cliffs behind. The risk to beaches from coastal squeeze is a particular concern in such locations.

Recommendations: Results indicate relative stability at the beaches studied through art works, with changes due to storms being a key coastal threat. The rich art resource available for the Cornish coast means further studies would be useful to maximise data from these sources.

Coastal managers face an ongoing battle to moderate impacts from the sea in the face of a changing climate and pressures from human use of the coastal zone. The challenges that lie ahead are forecast to increase while resources are being forced to go further.

This case study report is part of the Arch-Manche project, which quantifies the value of under-used coastal indicators that can be applied as tools to inform long term patterns of coastal change. In addition, it provides instruments to communicate past change effectively, model areas under threat and interpret progressive coastal trends.

West Cornwall area is one of six UK case study areas for the Arch-Manche project. This Section introduces the study area and why it was chosen as part of the project, the results of the art study are then presented. The analysis of these results and the potential for demonstrating the scale and rate of sea level change are then presented. For further details about the project and the methodology see [Section 2](#).

Within the study area the available art resource has been researched, ranked and analysed. The extents of the detailed study areas are shown in Figure 3F1 below.

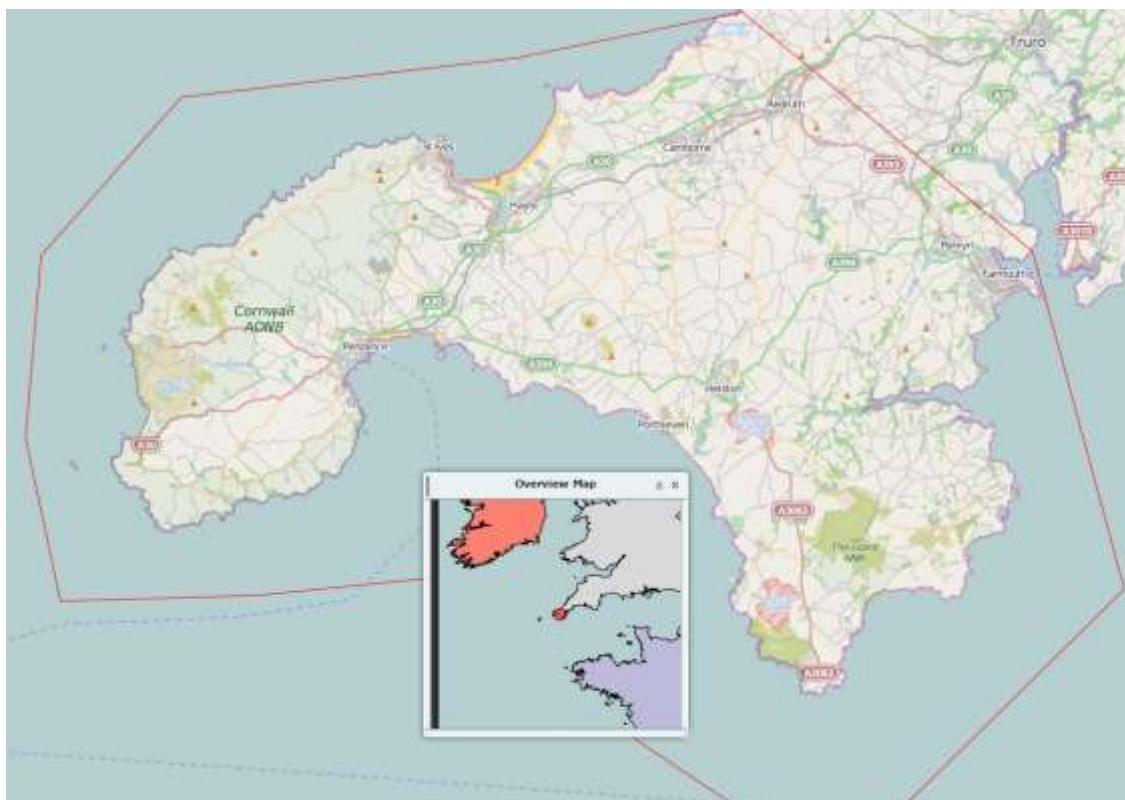


Figure 3F1: Map of the West Cornwall case study area

3F.1 Introduction to the Study Area

The study site comprises the western extremity of the county of Cornwall in south west England and considers the issues of beach change at three locations west of the town of Falmouth. The rugged and dramatic coastline of west Cornwall is surrounded by the sea on three sides, and is almost an island geographically. The predominantly hard rock coastline includes a number of magnificent sandy beaches, which represent a vital resource for the county's flourishing tourism industry. The local authorities responsible for this region have played a pro-active role for many years in terms of both integrated coastal zone management and coastal risk management, including the development of management plans and a beach management strategy.

3F.1.1 Geology and Geomorphology

West Cornwall is dominated by its granite backbone, which was formed during the Variscan Orogeny. To the east the Upper Devonian Slates occupy an extensive part of the county. Being located on a peninsula, the coastline is exposed to the full force of Atlantic storm waves, however, the coastline is composed of highly resistant rocks that, whilst susceptible to occasional rock falls, are generally steep and form impressive coastal landscapes.

The extensive beaches which lie below the cliffs, particularly in the sheltered bays, may be prone to beach lowering and coastal 'squeeze' as a result of rising sea levels over the next century. Beach levels are closely monitored in order to assess changes that may be taking place and establish long-term trends.

Within this case study area, three sites have been examined at Falmouth Bay, Marazion within Mount's Bay to the east of Penzance, and, finally, Carbis Bay to the east of the seaside resort of St Ives.



Figure 3F2: Map of West Cornwall by Thomas Moule 1840

3F1.2 Environmental Impacts and Coastal Management Approach

It has been explained that coastal erosion is generally less of a problem in west Cornwall on account of the durability of the rock formations. However, erosion can affect beaches, particularly after storm events. For the longer term, sea level rise, causing more aggressive coastal erosion, and the squeezing of the beach against hard cliff lines at the back of the beach, could result in increased scour and, consequently, beach lowering.

In order to address these issues and understand the long-term trends, a Shoreline Management Plan for Cornwall and the Isles of Scilly SMP2 (Royal Haskoning, 2011) has been completed. In addition, a Beach Management Strategy has been prepared by Cornwall County Council and the Cornwall Coastal Group (Cornwall County Council, 2013), which is a forum for all relevant authorities in Cornwall with an interest in coastal management.

3F.1.3 Description of the Coastal Art of the Study Area

The western end of the Cornwall peninsula has been painted visited by numerous artists over the last two hundred years. They were attracted by the rugged cliff scenery, the brightness of the light and the colours of the sea as well as the day-to-day lives of the villagers and fishermen. Some artists moved to the area living within artist colonies at St Ives and Newlyn whilst others visited on a regular basis.

During the early years of the eighteenth century J. M. W. Turner painted numerous views in Cornwall, for example 'Pendennis Castle', 'Falmouth Harbour' and 'Boscastle'. Between 1814 until 1825 William Daniell produced numerous aquatint engravings of coastal scenes, which are contained in his 'A Voyage Round Great Britain' (Daniell & Ayton, 1814). His west Cornwall views are particularly fine and include 'Falmouth', 'The Lizard', 'Mullion Cove', 'St Michael's Mount' (two views), 'Penzance' and 'Land's End'. Later, the Finden Brothers' publication *Ports, Harbours, Watering Places and Picturesque Scenery of Great Britain* (Finden and Finden, 1838) portrayed a dramatic view of 'Tintagel Castle'.

The Pre-Raphaelite painter of coastal scenery, John Brett, is particularly renowned for his very detailed depictions of the Cornish coast, which he first visited Cornwall in 1870. Cornwall provided a "lasting source of inspiration, drawing him back time and time again over the course of three decades" (Brett et al., 2006). The frequency of his visits has left a lasting legacy capturing an astonishing number of views of the Cornish coastline.

The rugged coastline of the Cornish peninsula “*appealed to the geologist in Brett*” and he produced a significant number of sketches, watercolours and oils of the rocky coastline. In the summer of 1873 Brett and his large family travelled around Cornwall, visiting Penzance, Perranporth, St Agnes, Tintagel and Bude. It has been argued that this particular summer was “*one of the most extended and ambitious [years] of Brett’s career*” (Brett *et al.*, 2006). A further visit in 1876 saw Brett paint his beautiful view of the Lizard from the Rill above Kynance Cove. Brett was high up on the cliffs overlooking the Lizard Point and captured the rocks in the foreground with precision. The Cove was also painted by the celebrated artist Edward William Cooke RA whose coastal views have an accuracy sometimes of photographic quality.

The Cornish coastline remained a popular venue for artists throughout the latter part of the nineteenth century and early twentieth century. Many of Britain’s great painters of coastal scenery visited the region including John Mogford, Samuel Phillips Jackson and George Wolfe. The quality of the reflected light from the sea, the rugged coastal scenery and the coastal fishing communities led to the establishment of large colonies of artists at Newlyn, St Ives and Lamorna in Cornwall. The artist Charles Napier Hemy was a “*constant and almost lifelong illustrator of Cornish scenery*” (Hardie, 2009) and he owned a house in Falmouth. The port of Penzance Harbour was described by Stanhope Alexander Forbes RA (1857-1947) as “*active and picturesque...from the first time I was fascinated by those wet sands*” (Hardie, 2009).

Stanhope Alexander Forbes, along with Walter Langley (1852-1922), was a founder of the Newlyn School of artists, located in the small fishing village next to Penzance. Forbes has been referred to as the ‘*Father of the Newlyn School*’ and was instrumental in the development of the area as an established artists’ School. Forbes moved to Newlyn in 1884 after a period of time studying in Cancale, Brittany with Henry Herbert La Thangue (1859-1929). Forbes lived out his experience in the Breton colonies in Newlyn and as such described it as “*an English Concarneau*” (Newton, 2005). In 1895 he established the Newlyn Art Gallery and was chairman and trustee. In 1899 he formed the popular Newlyn Art School. Walter Langley has been credited with being the “*earliest ‘pioneer’ of the Newlyn colony of artists*” and he settled there in 1882 (Hardie, 2009). The term ‘Newlyn School’ was applied to those artists who shared a “*degree of unity of vision and a broadly similar approach to painting*” (Newton, 2005).

A significant number of the artists who settled in Newlyn had previously studied (often together) in the *ateliers* of Paris and were greatly influenced by French *plein-air* naturalism as championed by Jules Bastien-Lepage. The artists were eager to capture the realities of life for the local inhabitants, but also to “*capture the effect of natural light...inspired by the French plein-air painters*” (Newton, 2005). Bastien-Lepage also inspired the ‘square-brush’ technique, now synonymous with the Newlyn School.



Figure 3F3: A nook near *The Lizard* by John Mogford; 1878. Oil on Canvas. Mogford painted the coastal geology in precise detail. Image courtesy R.McInnes.

The artists who gathered in the town of Newlyn were drawn to it by its ‘other-worldliness’, being as it was so far away geographically and culturally from the large industrial towns that were developing across England. The simple life of the fishermen and women of Cornwall proved inspirational to the visiting artists of Newlyn. It was arguably a tonic to the rapid spread of industrialisation in Great Britain. However, the artists were inspired by the unflinching realism of the French and sought to capture nature in its truest form and avoid sentimentalising the lives of the inhabitants. The realism that they sought to depict in their work involved a “*plein-air ideal when it came to painting the fisher folk upon the quays and in the boats of the Cornish fishing village*” (Hardie, 2009).

The artists painted their subjects against the backdrop of authentic locations and frequently within the models’ homes. There was a fascination amongst the artists with the fishermen’s working lives and the inevitable tragedy that accompanied such work. On a practical note, many artists chose to stay and work in Newlyn due to the inexpensive living costs and readily available models willing to sit for their work. Wives waiting for their husbands to return safely to the village from fishing excursions was a recurrent theme. For example, Langley’s watercolour ‘*Among the Missing – Scene in a Cornish Fishing Village*’ dating 1884 (Newton, 2005) illustrates the anguish experienced by the women left in the wake of the loss of their husband at sea.

Forbes’ Art School continued to thrive during the early years of the twentieth century and attracted new artists to the area because of the sense of “*artistic camaraderie...the light and the landscape*” (Newton, 2005). For example, Samuel John ‘*Lamorna*’ Birch RA RWS (1869-1955) settled near to Newlyn in Lamorna valley and was so enamoured with the location, he styled himself ‘*Lamorna*’ Birch; Harold Knight RA (1874-1961) and Laura Knight DBE RA RWS (1877-1970) also settled in Newlyn (and later Lamorna Cove) from 1907 onwards after having previously been instrumental in the development of the artists’ colony in Staithes, on the north east coast of England. Laura Knight continued the *plein-air* tradition right up until the 1920s and captured a number of bright coastal scenes during her time on the Cornish coast.

The art colony of St Ives also flourished during the latter part of the nineteenth century. This may be in part due to it featuring in many London art and literary journals at that time. It may also be due to the fact that the sheer volume of artists attracted to that area at that time led inevitably to further areas being 'discovered' by artists. In 1889 the *Daily Telegraph* noted that Louis Grier and Julius Olsson were "*building up what, one day, might be recognised as the St Ives School of painting*" (Newton, 2005). By the 1890s the local art club boasted over 100 members. Grier and Olsson began to take on students from 1895 and Olsson has been described as the driving force in the school. Olsson was described by Folliott Stokes as, "*a big man with a big heart, who paints big pictures with big brushes in a big studio*" (Newton, 2005). It has been said that Olsson "*did more than any other painter to stamp St Ives as a British outpost of Impressionism*". Olsson lived in St Ives until 1912 and it has been argued that his influence as a teacher "*spread over a generation or more of young painters from Britain and overseas*" (Hardie, 2009).

The town of St Ives continued to grow and thrive as a creative community, attracting painters and also sculptors, potters and writers throughout the twentieth Century. There were many friendships and working relationships that developed between the artists living and working in the towns of St Ives, Newlyn and Falmouth during this time. Ideas and techniques were disseminated between the art colonies and schools. For over one hundred and twenty years "*there [was] a succession of influential role models living in and around St Ives*" (Newton, 2005).

The turn of the twentieth century and the increased level of tourists visiting coastal locations in the south-west led to a greater demand in watercolour and photographic postcards. Two artists, Henry Wimbush (1858-1943) and Alfred Robert Quinton (1853-1934), were particularly prolific in their production of picture postcards of this area. Popular subjects by A. R. Quinton included Falmouth, St Michael's Mount and St Ives.

3F.2 Ranking the Importance of the Artworks

The development of the ranking system has been outlined within [Section 2](#). In order to rank the artworks a database was established into which data was entered for both archaeological/maritime heritage sites and for artworks. By entering the data on artwork type, medium, subject matter, time period and other parameters the database was then able to calculate the ranking scores for twelve works of art from the case study site (Figure 3F4).



Figure 3F4. Location of the artworks.

The highest ranking artworks, watercolours by Alfred Robert Quinton and Henry Wimbush, scored 70 points whilst coastal engravings by Townsend and Daniell scored 62 and 55 points respectively. The information imparted by these artworks is described below. The study images depict three locations – Mount’s Bay at Marazion just to the east of Penzance; Gylngvase Beach on the south Cornish coast just to the west of Pendennis Point, Falmouth and finally Carbis Bay at St Ives. There are a large number of views of picturesque St Michael’s Mount and a selection of these are illustrated. However, for the other two sites just one image of each location is considered as these are the highest ranking images and allow comparison to be made of beach conditions in a very helpful way. Further details on the ranked artworks are provided in Table 3F.1 below.

These differing coastal conditions and processes and their impacts on coastal residents, assets and infrastructure could not have been easily matched to the most informative works of art without the provision of the ranking system. The ranking identified the three case study locations and, for each, several works are analysed as follows:-

Location	Artist	Date	Score type	Score period	Score style	Score enviro	Total Score
St Michael’s Mount – View 1	William Daniell	1825	Aqua-tint	Early	Topog.	Detailed View	55
St Michael’s Mount – View 2	William Daniell	1825	Aqua-tint	Early	Topog.	Detailed View	55
St Michael’s Mount	G. Townsend	c.1850	Steel Engraving	Mid.	Topog.	Very Detailed View	62
Near The Lizard	John Mogford	1885	Oil	late	Topog.	Detailed View	48
The Lizard	John Brett	1876	Oil	Late	Topog.	Very	62

						Detailed View	
Mount's Bay	John Brett	1877	Oil	Late	Topog.	Very Detailed View	62
St Michael's Mount	Henry B. Wimbush	c.1900	Water-colour	Late	Topog.	Detailed View	70
St Michael's Mount	Alfred Robert Quinton	c.1900	Water-colour	Late	Topog.	Detailed View	70
Gyllyngvase Beach, Falmouth	Alfred Robert Quinton	c.1900	Water-colour	Late	Topog.	Very Detailed View	70
Carbis Bay, St Ives	Alfred Robert Quinton	c.1900	Water-colour	Late	Topog.	Very detailed view	70

Table 3F1 Art ranking results for West Cornwall

A more detailed interpretation of the individual artworks is provided below. The assigning of scores to each artwork suggests names of those artists who have depicted different aspects of the study site coasts most accurately across the timeline 1770-1920. These artists include William Daniell, John Mogford, John Brett and Alfred Robert Quinton; they can be relied upon in terms of the accuracy of their depictions of the East Sussex coastline.

3F.3 Discussion of the Art Ranking Results

Over the last twenty years considerable efforts have been made to encourage improved coastal management in Cornwall and this has led to the development of risk management plans for the county coastline in support of the principle of sustainable development. As part of this process, thorough consideration has been given by the South-West Coastal Group to natural hazards, and the resulting risks to people, property and the environment. Climate change is with us now and is going to exert an increasing influence on the lives of coastal residents over the next decades by affecting the severity of coastal erosion and the potential for beach change.

The Cornish case study has assessed the value of various artworks in terms of informing on beach change through a combined approach of desk-based research, museum and gallery searches and field visits. These have confirmed the added value of art from the period 1770-1920 to support other coastal surveying and monitoring technologies (e.g. Space-borne, air-borne, ship-borne and terrestrial). It is important to remember that artists in the late Georgian and Victorian eras worked for very demanding, wealthy clients who often sought exact views of the coastal landscape to remind them of their visit. Before the days of photography precise images were, therefore, a prerequisite in most cases. The artworks examined illustrate the form of important beaches in the late nineteenth or early twentieth centuries. Some of the paintings show little change over the last two hundred years and this information is of importance to the coastal scientist.

Although the west Cornwall case study has focused on the use of historic paintings, several historic maps, charts and photographs were also consulted to review the potential of these data sources. Because of the dynamic nature of this coastline historic photographs can be a valuable resource with many historic photos containing depictions of the cliff with recognisable heritage features nearby, including churches, wells and houses. These can be compared to the modern situation and from this an accurate idea of the rate of erosion since the date of the photograph can be gained.

3F.4 Art Field and Research Studies Approach

No archaeological or palaeoenvironmental fieldwork was carried out for the west Cornwall case study site, this section, therefore, outlines the field studies undertaken as part of the art study.

The art ranking system confirmed which images were likely to be true representations of the conditions that would be seen at the time they were painted; the research questions to be answered through examination of the artworks were:-

- What information can the historical images provide to support understanding of long-term coastal change?
- How can the potential of this resource be used most effectively by the end-user?

In order to identify the most suitable artworks that could be studied in more detail at the field study sites a national search was undertaken involving an extensive review of landscape paintings, watercolours and prints held in public and some private collections. Following ranking of seventeen artworks seven examples have been the subject of more detailed analysis involving site visits. This is a smaller number than at other case study sites because there has been a particular focus here on comparing change at specific beaches – Carbis Bay near St Ives and Gyllynvase Beach near Falmouth. The artworks being examined at these sites are also particularly high scoring (70 points).

Where it was practical to gain access and relevant to the study, present day photographs were taken in the field to try, as far as possible, to match the views painted by the eighteenth, nineteenth and early twentieth century artists. It also provided the opportunity to assess the conditions of the cliffline and beach and changes that may have taken place over time. In terms of work in this field each of the locations has been visited and photographed in varying weather conditions. Inspections were timed to coincide with Low Water and a walk-over survey was made along the beach and base of the cliff returning along the cliff top. This ensured that thorough comparison could be made between the geomorphological conditions depicted in the artwork and the present day situation.

3F.5 Art Field Data Gathering Results

The west Cornwall study sites were chosen to assess how artworks can assist evaluation of beach change; an issue of considerable concern in the south west of England. The opportunity was taken to examine change at three sites each of which was painted by high scoring artists of known reliability and accuracy. Careful comparison was made between the artworks and the present day views by examining beach levels against the cliffs and other elements shown in the paintings. The examination of the art was followed up by site inspections and generally there appeared to be little change since the early part of the twentieth century. The field inspections allowed a more accurate appraisal to be made of current physical conditions rather than relying upon written accounts and reports particularly as storm events can cause significant alterations over relatively short time periods.

Whilst the state of the sandy beach in Mount's Bay appears less obvious in the artworks (some are depicted at half-tide) the extent of the sandy foreshore at the other two sites is remarkable. The present day views suggest that beach conditions are remaining healthy at all three sites although steepening and some reduction in volume are likely to be the consequences of sea level rise and coastal squeeze, particularly in Mount's Bay, which is backed by hard defences.

F1 Gyllynvase Beach, Falmouth

Location

Gyllyngvase beach is one of four beaches located to the south of the town of Falmouth, Cornwall's most important sea port and a fine natural harbour. The beach is backed by steep slopes, lined with hotels, and comprises a long crescent shaped stretch of sand broken by rocks at low water.

Why was the study site selected?

The three sites chosen for study in west Cornwall were selected as they provide examples of important pocket beaches, which are backed by clifflines or hard defences, and which may be subject to coastal squeeze as a result of rising sea levels over the next century.

Geomorphological setting

The geology is composed largely of granite intrusions into the adjacent sedimentary rocks, which are of the Devonian period. The study site is bounded on the east by Pendennis Point at the mouth of Carrick Roads and faces the English Channel, with exposure also to the waves from the Atlantic Ocean.

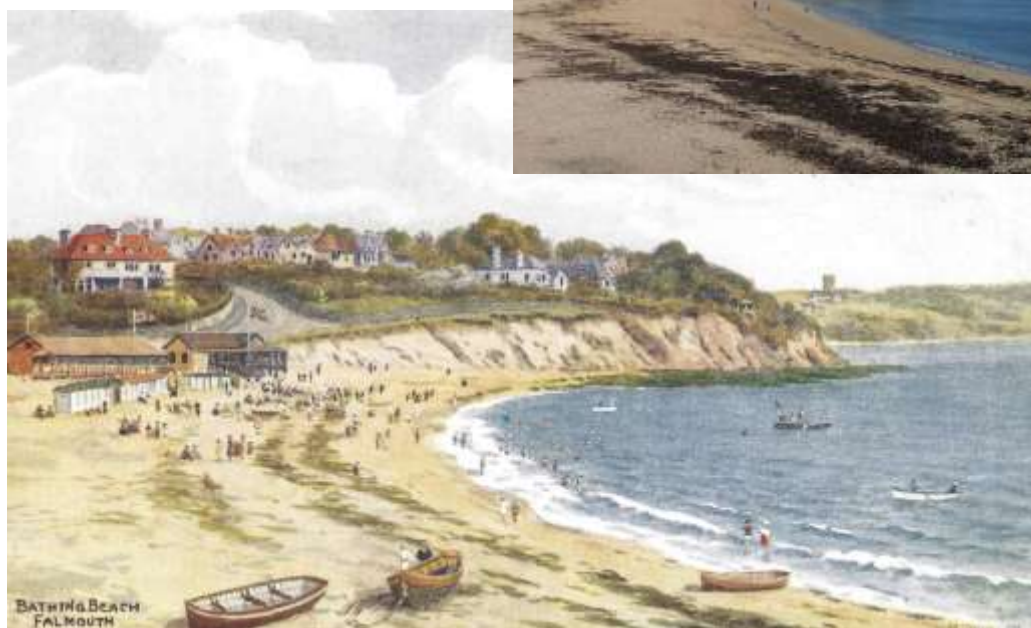


Figure 3F5: Gyllyngvase Beach near Falmouth, Cornwall by Alfred Robert Quinton; c.1900. Image courtesy of J. Salmon Limited. Figure 3F.5a: View of the beach today; image courtesy of Claire Ogden.

Key coastal risk management issues for the frontage

The key objectives are to prevent or minimise economic losses by reducing coastal erosion and coastal flooding that might affect residential, commercial and industrial properties and infrastructure. In addition the Shoreline Management Plan (Royal Haskoning, 2011) wishes to identify opportunities for maintaining and improving the natural environment by managing the risks from flooding and erosion, and to minimise any adverse impacts on the geological and geomorphological interest of the coast, as well as the significant heritage assets. These objectives will be achieved by continuing a policy of 'hold the line'.

Observations on the artwork

The artwork shows a view of the beach, looking eastwards, in about 1900. Both the watercolour by Alfred Robert Quinton and the present day view depict a healthy beach, although the view by Quinton is slightly closer, being taken from the middle of the beach. The cliff line in the centre of the watercolour seems rather more active than the present day, where the slopes are more vegetated. Overall, the image suggests relatively little change over the last 100 years, although there is likely to be some increasing pressure as a result of sea level rise, through the twenty-first century.

How can the artwork inform coastal risk management?

The artwork provides a representation of beach and cliff conditions in about 1900. It provides an indication of the nature of the beach some 30 years before the earliest aerial photographs became widely available. It does, therefore, provide a useful description of the beach at that particular time.

Where can the original artwork be viewed?

The watercolours by A.R Quinton were produced for reproduction as colour picture postcards from the late nineteenth century. The watercolours remain in the ownership of the publishers, however, the postcard reproductions are widely available on the Internet.

Ranking score achieved: This view by Quinton received the high score of 70 points.

F2 St Michael's Mount, Mount's Bay near Penzance

Location

The site is located on the south coast of Cornwall, approximately 2km east of the town of Penzance.

Why was the study site selected?

The site is located at the village of Marazion, which is a popular beach resort overlooking the island of St Michael's Mount. The Mount is connected to the foreshore by a causeway, which is covered at high water. The site is under significant pressures from both tourism, as well as, physical coastal processes including storm surges affecting the beach and its nature conservation interest. Hard defences covering much of the Bay may lead to 'coastal squeeze' in the future.

Geomorphological setting

The site lies along the rocky coastline of west Cornwall. This part of the coastline receives some shelter from the dominant westerly Atlantic wave climate, as a result of the Penwith Peninsula to the west. However, the frontage is vulnerable to storm events generated from the south and the south-east. The granite outcrop of St Michael's Mount and the rocky shoreline helps control the form of the beach and contributes sediment accretion along the frontage.

Key coastal risk management issues for the frontage

The developed frontage is protected by seawalls but there are concerns about lowering of beach levels and the impacts of rising sea levels and increased erosion, resulting in beach drawdown, which has already been noted as taking place. The adjacent coastline is of nature conservation importance on account of its bird species, and forms a nature reserve, as well as being designated as a Special Protection Area.

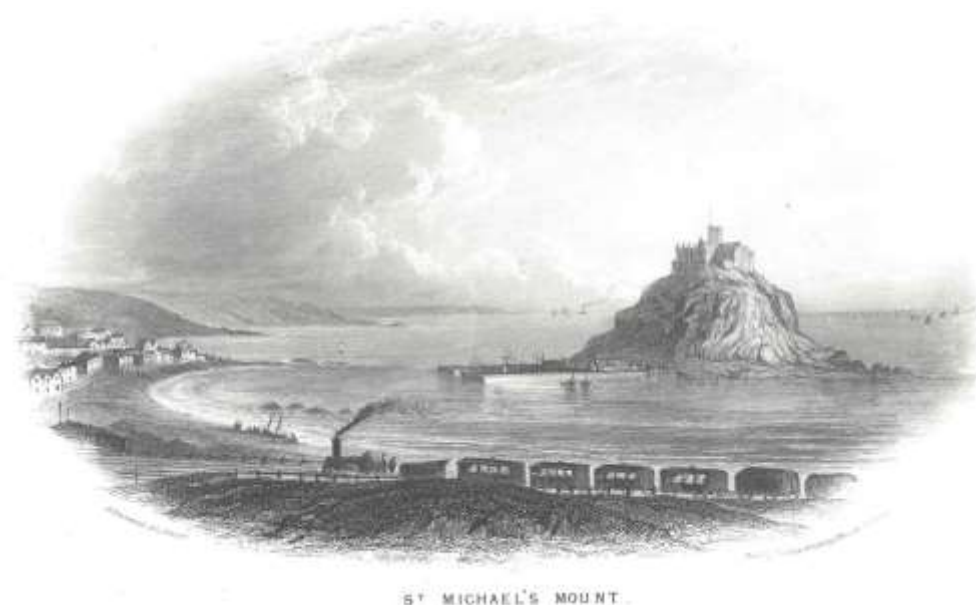


Figure 3F6: A view of St Michael's Mount engraved in about 1850.



Figures 3F7 and 3F8: Two views of St Michael's Mount by William Daniell RA; 1825.



Figures 3F9. The present day view of St Michaels Mount; image courtesy of Rssing.com



Figure 3F10 was painted by Alfred Robert Quinton in about 1900.



Figure 3F11: The view by Henry B. Wimbush and is of a similar date to Figure 3F.10 (image courtesy of J. Salmon).

Observations on the artworks

The two views of St Michael's Mount from the shore at Marazion by Alfred Robert Quinton (Figure 3F.10) and by Henry Wimbush (Figure 3F.11) were both painted in watercolour in about 1900. They depict the situation at low water, as evidenced by the visibility of the causeway linking the Island to the mainland, which is being accessed by pedestrians in the picture. In the foreground the rocky foreshore can be seen, which lies seaward of the sandy beach. The watercolours indicate the nature of the foreshore, and it appears that there has been little change since the view was painted.

How can the artwork inform coastal risk management?

Works by these artists have been proved to provide a reliable record of conditions at the time they were painted. Comparison of the image with the present day appears to show relatively little change and this is supported by evidence from monitoring of the frontage. The watercolours help provide a long-term perspective in terms of the nature of conditions at this important location.

Where can the original artwork be viewed?

The views by William Daniell (Figures 3F.7 and 3F.8) can be viewed readily on the Internet. Although the images by A. R. Quinton and H. B. Wimbush are held privately they were also reproduced as colour picture postcards and can be viewed on the Internet.

Ranking score achieved: The watercolour views by view by Quinton and Wimbush both received the high score of 70 points. The aquatint engravings by William Daniell scored 55 points (see Table 3F.1).

F3 Carbis Bay, St Ives, West Cornwall

Location

Carbis Bay lies on the western side of St Ives Bay in west Cornwall. The bay is located immediately to the east of the town of St Ives, in a sheltered position.

Why was the study site selected?

The site was selected as a location where an excellent tourist beach is backed by a hard rock cliffline that may be subject to coastal squeeze as sea levels rise in the future. The issues at this site should be seen collectively with those at the two previous sites.

Geomorphological setting

St Ives Bay lies on the northern coast of the west Cornwall peninsula and has been formed within granite rock cliffs, which make up the frontage between St Ives and Land's End. The bay itself lies within rocks of the Devonian age, including slates, sandstones and limestones. The bay has not been affected by significant coastal erosion in the past.

Key coastal risk management issues for the frontage

Carbis Bay has a wide sandy beach, which although sheltered, can be impacted upon by severe storm events from the north west to north east (Royal Haskoning, 2011). The north western frontage, which is relatively undeveloped, will not be defended for the future, whilst the existing defences will be maintained along the developed frontage of the bay itself.

Observations on the artwork

The watercolour drawing by Alfred Robert Quinton (Figure 3F.13) depicts the view from Porthminster Point, looking across Carbis Bay towards Carrick Gladden. It shows the relatively undeveloped nature of the bay at the time, and also precisely defines the extent of the beach at Low Water.

A further point of interest is the comparatively bare coastal slopes, which are now heavily vegetated. Watercolour drawings up to this date can be particularly useful in terms of comparing vegetation patterns, particularly as they represented the only images in colour available at that time, prior to the widespread introduction of colour photography in the early twentieth century.

The beach itself appears very healthy in the Victorian (c.1900) watercolour, and yet the extent of the beach today (Figure 3F.12) matches precisely the historical image. This suggests that there has been relatively little coastal change over the last 114 years.

How can the artwork inform coastal risk management?

Figure 3F.13 provides an exact depiction of coastal conditions in 1920 at Carbis Bay. It allows those interested in coastal management to understand what conditions were like long before the days that monitoring programmes for beaches were put in place. Alongside the coastal risk management issues these images also describe environmental and developmental change over the intervening period.



Figure 3F12: Present day view. Courtesy of T.Bakes (Panoramio.com).



Figure 3F13: Carbis Bay, St Ives by Alfred Robert Quinton; c.1900. Image courtesy of J. Salmon limited.

Where can the original artwork be viewed?

The watercolours by A. R. Quinton were produced for reproduction as colour picture postcards from the late nineteenth century. The watercolours remain in the ownership of the publishers, however, the postcard reproductions are widely available on the Internet.

Ranking score achieved: The watercolour view by view by Quinton received a high score of 70 points.

3F.6 Analysis of Artistic Depictions

The three west Cornwall study sites were selected to provide examples of how artwork can support understanding of beach evolution (form, extent and volume). They illustrate relatively

little change over the last century although conditions may fluctuate depending on the severity of storm events.

The government has recognised that in the past insufficient attention had been given to long-term coastal and beach change as part of coastal risk management, and the second round of Shoreline Management Plans, which were completed in England and Wales by 2010 sought to address this. In addition, over the last decade a Strategic Coastal Monitoring programme has been rolled out around the English and Welsh coasts (www.channelcoast.org) and this is now providing much more detailed information on beach change. This new approach can be supported by the historical information on beach change that is provided by artistic works such as these of Cornwall's beaches.

3F.7 Conclusions and Recommendations

3F.7.1 Conclusions

- The aquatint prints and watercolour drawings highlighted in these Cornish studies can be examined to support understanding of long-term beach change. They allow detail and accuracy to be compared across artists and artworks to improve confidence in the reliability of the depictions in addition to the value of the information they impart.
- The county of Cornwall has an exceedingly rich art history and forms one of the most painted coastlines in The British Isles. The opportunity exists, therefore, to apply the Arch-Manche approach along the whole of this extensive coastal frontage.
- The studies show relatively modest change over the past century as a result of erosion or the impact of sea level rise.

3F.7.2 Recommendations

- A record of the condition of these Cornish beaches is available for examination (in colour) by coastal scientists and engineers.
- It is recommended that all studies relating to coastal and shoreline management should take full account of the art record and other historical resources available to improve understanding of coastal evolution and trends.

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3F.8 Case Study References

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