



## Our coastline is changing

The Isles of Scilly are a particularly unique and dramatic part of the British Isles, with coastal landscapes and seascapes that have been shaped by natural marine processes over geological timescales. Evolution of the shoreline is usually gradual but occasionally rapid and dramatic and it always involves change of some kind. This type of change often represents a threat to coastal communities. In the past, attempts have been made to stop the effect of erosion or flooding through the building of defences. Rates of erosion and incidents of flooding are expected to increase by the end of this century, because of increasing storms and rising sea levels brought about by climate change. Protecting our coastal communities in traditional ways will become increasingly difficult and costly.

This document provides an overview of the Shoreline Management Plan Review (SMP2) for the Isles of Scilly. This forms part of the larger Cornwall and Isles of Scilly SMP2 (extending from Rame Head on the south coast to Hartland Point in the north) and covers the five inhabited islands, St Mary's, St Martin's, Tresco, Bryher and St Agnes. Over the last two years the first SMPs for the Isles of Scilly and Cornwall have been reviewed and updated, using the latest knowledge and with wider consultation. The end result is an updated Shoreline Management Plan (SMP2). The purpose of this summary document is to firstly provide an overview of the SMP process and its objectives and secondly to highlight issues specific to the Isles of Scilly SMP area and the important conclusions. It is divided into the following sections:

1. What is a Shoreline Management Plan?
2. Background to the Isles of Scilly SMP area
3. Main issues
4. Main conclusions
5. The Action Plan





## 1. What is a Shoreline Management Plan?

A Shoreline Management Plan (SMP) provides a large-scale assessment of the risks associated with coastal evolution and presents a policy framework to address these risks to people and the developed, historic and natural environment in a sustainable manner. The two most important aims are:

- To reduce the threat of flooding and coastal erosion to people and their property.
- To deliver the greatest environmental, social and economic benefit, consistent with the Government’s sustainable development principles.

The SMP is a non-statutory policy document for coastal defence management planning. It takes account of other existing planning initiatives and legislative requirements, and is intended to inform wider strategic planning. It does not set policy for anything other than coastal defence management but is targeted at achieving greater consistency in the assessments and presentation of coastal plans.

### Policy Options

The generic shoreline management policy options considered in SMP2 are defined by the Department of the Environment, Food and Rural Affairs (Defra). They are outlined in the following statements:

Table 1. SMP2 Policy Options

<b>No active intervention (NAI):</b>	A decision not to invest in providing or maintaining defences or natural coastline.
<b>Hold the line (HTL):</b>	Maintain or upgrade the level of protection provided by defences or natural coastline.
<b>Managed realignment (MR):</b>	Manage the coastal processes to realign the ‘natural’ coastline configuration, either seaward or landward, in order to create a future sustainable shoreline position.
<b>Advance the line (ATL):</b>	Build new defences seaward of the existing defence line where significant land reclamation is considered.

N.B. The choice of a policy option that requires action does not guarantee that funding will be available from the public purse (or any other funding source) to carry it out.

### Working in partnership – who reviews the SMP?

The SMP Review has been completed on behalf of Cornwall and the Isles of Scilly Coastal Advisory Group (CISCAG). Members of CISCAG formed the SMP **Client Steering Group**, including representatives from the Local Authorities, Environment Agency, Natural England, English Heritage and the National Trust, who have overseen and guided the production of this plan. In addition, **Elected Members Forums** were



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established for the Councils of both Cornwall and the Isles of Scilly. The forums each comprised a number of elected councillors and provided guidance and representation of the local wards and Town and Parish Councils. They have also acted to formally endorse the plan and recommend its adoption to the Full Councils.

CISCAG commissioned consultant engineers and environmental scientists Royal Haskoning to prepare the SMP Review and undertake the technical assessments. Coast and Country Projects Ltd were commissioned to undertake project management of the work and funding has been provided by the Government through Defra.

### Why have they been reviewed now?

The first SMPs for the Isles of Scilly (and Cornwall) were developed and adopted by the Local Authorities in the late 1990s. Significant progress has since been made in the understanding of how climate change and sea level rise may affect the coast and there has been an important political shift towards longer term sustainable development and land use planning. There was, therefore, a need for the original SMPs (and indeed all SMPs covering England and Wales) to be reviewed.

### What do we do to review the SMP?

There are four principal stages in reviewing the SMP:

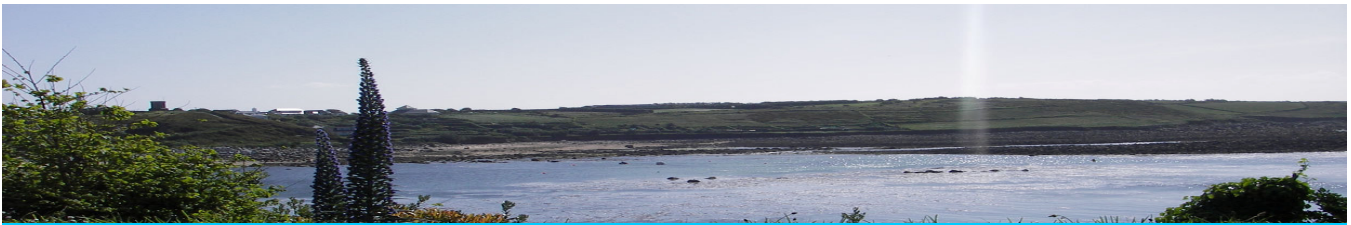
- Technical assessments
- Policy development
- Consultation
- Adoption and finalisation

### Technical assessments

The initial stage of review is the undertaking of a number of assessments that provide the basis for development of the preferred plan and policy. This includes a comprehensive review of the coastal and estuarine processes; a review of the coastal defence structures which are present; a thematic review of all the assets (natural assets, heritage, property, community infrastructure, transport links) along or adjacent to the shoreline; an economic assessment of the built environments and the costs of maintaining and building defences; and environmental assessment – a Strategic Environmental Assessment (SEA) and a Habitat Regulations Assessment (HRA) are carried out to provide a sustainability audit of the proposed policies.

### Policy development

The SMP Review provides a long-term policy framework over the next 20, 50 and 100 years to guide the management of the coast. The policy can change between these time periods (called epochs) to give communities time to adapt to coastal change. It is important to note that the implementation of these policies through specific actions is dependent on funding being available and the necessary planning and consents being in place. The Isles of Scilly SMP area is divided into 60 individual policy units, each with a preferred policy option for each of the three time periods up to the year 2105.



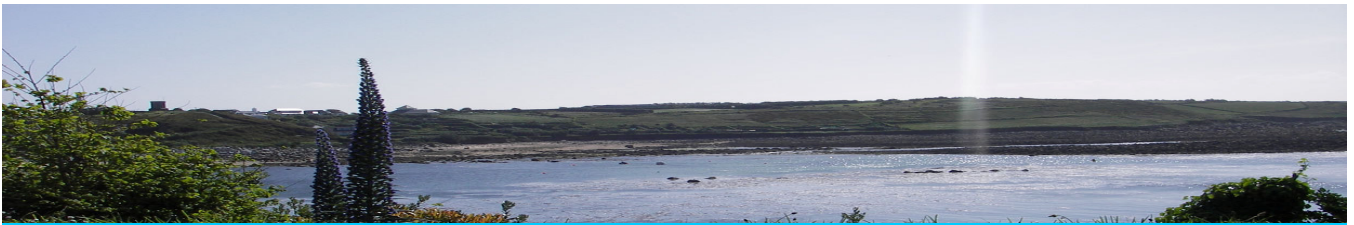
## Consultation

Seeking the views of the coastal communities and the main interested groups (organisations like the Duchy of Cornwall, the Royal Society for the Protection of Birds (RSPB) and Wildlife Trusts) has been essential in selecting appropriate policy choices in each location. We have also consulted closely with elected councillors across the islands through our Isles of Scilly Elected Members Forum. Throughout the review, a number of local meetings, drop-in events and presentations have been undertaken, to make as much information available to interested parties at all times. The official public consultation period ran from March 2010 to June 2010 and throughout this period consultation meetings and events took place. In addition, the SMP2 website has made all documents and revisions of documents available throughout the official consultation period and will now host the full set of completed SMP Review reports.

## Adoption and finalisation

The final stage of the SMP Review is the adoption of the plan by the Local Authorities and partner organisations. This is important as it officially signifies that everyone involved has 'signed-up' to the plan and have come to agreement on the best way forward in managing the shoreline over the 100 year time-frame of the SMP. This process was undertaken during June – December 2010 and incorporated presentations to the full Councils and submissions of the full SMP Review to the Environment Agency's National Quality Review Group. At the end of December 2010, the final sign-off required for adoption of the plan was achieved and the SMP2 has subsequently been published.

This document provides a summary of the SMP2 report specifically for the Isles of Scilly. The full SMP documents (and summary covering the full SMP area) can be accessed at the CISCAG website: [www.cornwall.gov.uk/smp](http://www.cornwall.gov.uk/smp).



## 2. Background to the Isles of Scilly SMP area

This is a review of the first SMP produced for the Isles of Scilly over 10 years ago. This part of the SMP Review (SMP2) has been developed on behalf of the Council of the Isles of Scilly and CISCAG. The SMP2 has been supported throughout its development by a Client Steering Group (CSG).

Figure 1 shows the Isles of Scilly as part of the wider SMP area.

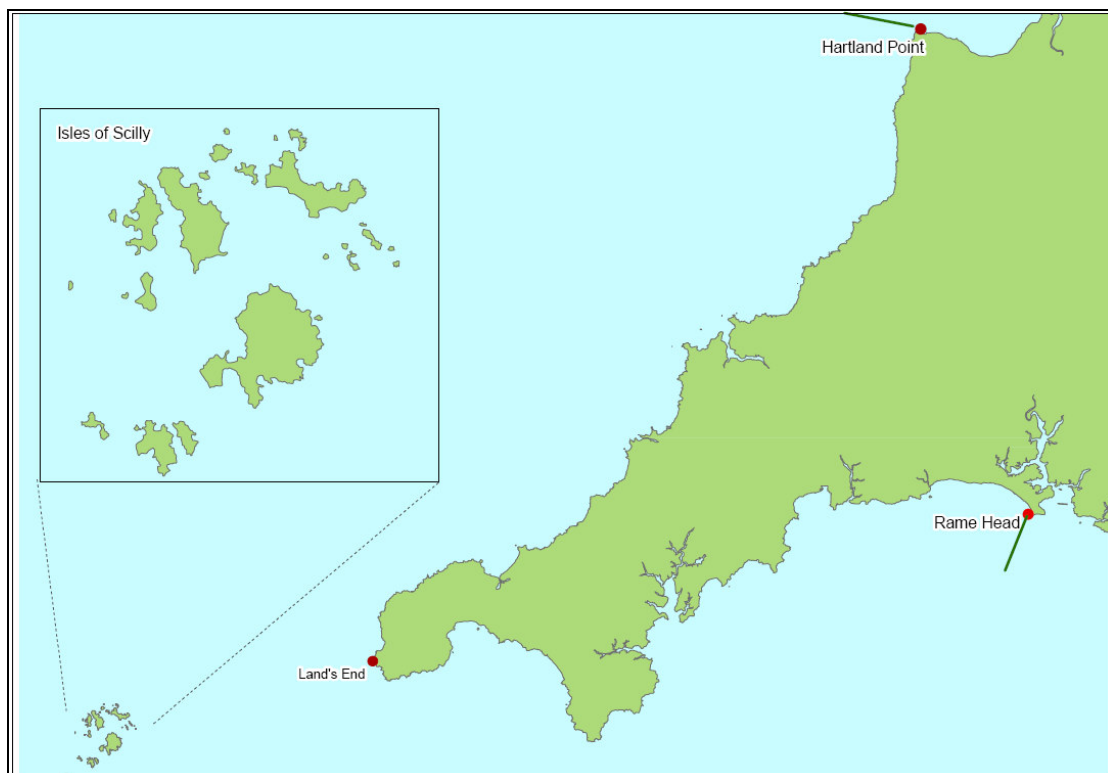
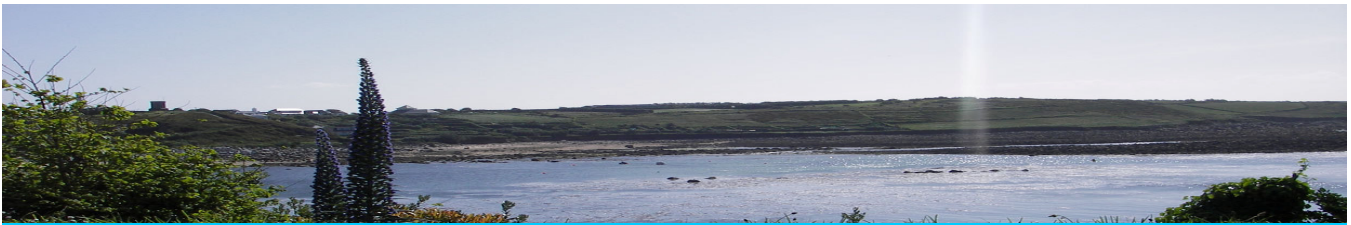


Figure 1. SMP2 Isles of Scilly plan area

### The physical coastline

The Isles of Scilly has effectively formed as a drowned landscape, following downward movement of southern Britain after the retreat of the ice-cap at the end of the last ice-age, some 14,000 years ago. Although the ice-cap did not reach beyond the north coast of Cornwall, glacial melt-water streams and the onshore transport of eroded glacial material from the degrading ice-cap in the Celtic Sea, supplied huge amounts of sediment to the coasts. Rising and falling sea levels have also played a huge role in shaping the present day coastline and overall topography of the Islands.



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The geology of Scilly consists almost exclusively of ancient, resistant rock. Large tracts of the shoreline are dominated by rugged and steep sea cliffs which plunge straight into the sea with little or no intertidal area. These hard cliffs are primarily formed of granites, which are the dominant geology type on Scilly.

The geomorphology and general shape of the coastline is characterised by hard, craggy cliffs; resistant headlands; small and medium sized bays containing wide sandy beaches; rocky coves containing smaller pocket beaches formed from sand, gravel and cobbles and areas of both static and mobile dunes. Some of the smaller bays and coves around the Islands coincide with minor faults in the bedrock geology.

The coastline of the Isles of Scilly experiences one of the highest energy wave climates in the British Isles, due to its extreme offshore westerly location. In common with other high wave energy and hard geology environments in the British Isles, such as south-west Wales, the west coast of Ireland and the west coast of Scotland, the wave climate has been extremely influential in shaping a rugged coastline from the resistant geology. Therefore the consideration and understanding of waves and the energy they deliver to the coast, is essential in undertaking an effective review of the SMP. However due to the plan form of the archipelago and the sheltering effects that some islands have on other islands, there are also some considerably more sheltered frontages, for example around New Grimsby on Tresco and Green Bay on Bryher.

The wave climate is very seasonal. Although large waves can occur at any time during the year, the autumn, winter and early spring period (October to April) generally experiences a much more energetic wave climate than the late spring and summer period. During the winter months the North Atlantic produces waves more consistently than any other ocean and much of that energy reaches the west coast of Britain. Much of the wave energy reaching the Isles of Scilly coasts is in the form of swell. Swell waves are generated great distances away in the North Atlantic by low-pressure systems and lose very little energy even after travelling thousands of miles. Swell waves tend to behave differently from locally generated 'wind waves' and storm waves when they reach the shoreline and can in some situations create worse flooding problems.

### **Flooding and erosion, climate change and sea level rise**

The shoreline, in whatever form it takes, is constantly under attack from the sea, through the effects of waves and tides. These forces have shaped the present day coastline over thousands of years. Therefore erosion risks and flood risks have always been present and as there is considerable human settlement in areas directly exposed to these risks, we have been managing these risks by building seawalls, breakwaters, groynes and piers for hundreds of years. Around the coast, many examples of erosion can be seen, often adjacent to the very defences built to defend against the erosion.



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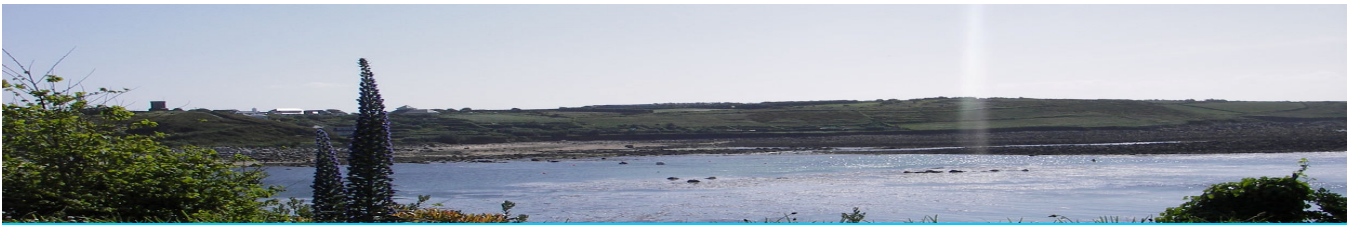


**Left:** The Isles of Scilly, despite their granite origins are not immune from erosion. Low cliffs of loose head material (locally known as ‘ram’) are positioned immediately behind many of the beaches and foreshores. These are nearly all actively eroding and retreating landward (as with the example in the photo, left, at Appletree Point, Tresco).

The present day scenario is however made more complex because we have to consider the effects of climate change and accelerating sea level rise. Considering how rising sea levels and increasing storminess will impact on the shoreline and coastal communities is an essential part of the SMP2 process. Of course there is inherent uncertainty in working with future predictions which are linked to the climate but nonetheless, there is sufficient scientific evidence to suggest we need to plan very carefully for the effects of climate change. It is no longer sufficient to simply maintain all defences in their current positions – we need to realise that communities will need to adapt and in some cases the shoreline position will need to be realigned to reduce the risks that climate change poses.

A particular risk for the Isles of Scilly is ‘coastal squeeze’. This term refers to a situation where the coastal strip is effectively trapped between rising sea levels caused by climate change and hard man-made defences. This has the effect of narrowing the foreshore as mean high tide levels encroach landward but the defences remain static. This is why managed realignment is so widely advocated (and necessary) to help maintain a healthy width of foreshore. Without this, the natural defence provided by the beaches and dunes is increasingly reduced as the foreshore narrows, greatly increasing the risk of flooding and inundation to the populated areas which lie behind. Of course for Scilly, where land area is small and there is often very little room with which to work, a strategy which identifies exactly *how* managed realignment can be effective is going to be a critical aspect of future flood and coastal defence planning for the Islands.

The SMP uses climate change figures supplied by Defra. This includes an allowance for sea level rise through the next century and allowances for overall increase in average wave heights and average wind speeds.



## The human environment

The developed settlements on the Isles of Scilly represent a network of small port towns and hamlets which have grown up based around the traditional industries of fishing, agriculture and flower growing. In more recent times, tourism has dominated as the primary industry, with as much as 80% of income generated on Scilly relating to tourism in some way.



## Defences

The sea defences and coast protection structures are important aspects of shoreline management planning. Most of the defences have been built to address the flooding and erosion problems which different communities across the Islands have experienced over time. In particular, a number of defences were built (or improved and upgraded) following the severe storms which badly affected Scilly through the winter of 1989/90. These take many forms but are most commonly seen as vertical sea walls and sloped concrete or rock barriers (revetments). As well as the man-made defences, the natural coastal landforms act as natural defences against the sea. This can be the beaches and rocky outcrops reducing the energy of waves as they approach the shoreline, or the dunes acting as a buffer between the dynamic, coastal zone and the adjacent hinterland.

**Below:** a vertical masonry seawall provides defence at Porthcressa and gives way to a rock armour revetment at the eastern end of the beach adjacent to Buzza Hill.







## Heritage

An important aspect of human settlement is the historic environment associated with the coastline of the Isles of Scilly. The contribution of the historic coastal environment toward the local economy is very significant and therefore of strategic importance. Iconic sites such as the Garrison on St Mary's are extremely important in drawing visitors to the Islands.

Scheduled Monuments are historic sites of national importance, which affords them legal protection. The Isles of Scilly alone has over 230 of these designated historic sites, the highest density per hectare of any English authority (Isles of Scilly Council). There is also a wealth of listed buildings, shipwrecks and other marine archaeology around the Isles of Scilly archipelago.

**Right:** The Garrison on St Mary's remains a primary attraction for visitors to Scilly and a priority location of concern for English Heritage, due to the erosion and cliff instability experienced along the exposed northern and western flanks.



The ancient historic environment that is typified by Bronze Age barrows, Iron Age hill forts, Neolithic stone circles, quoits and cairns, is characteristic of, and heavily associated with the Isles of Scilly. Within the narrow coastal zone considered in the SMP Review, the historic environment that is uniquely *coastal* in its nature is most important, as once lost, there are very few examples of this heritage further inland.

## The natural environment

The coast of the Isles of Scilly supports a rich network of natural habitats and landscapes. The entire archipelago and the surrounding coastal waters are designated as an Area of Outstanding Natural Beauty (AONB). The entire coastal and marine zone is also designated as a Special Area of Conservation (SAC) – a designation which recognises the international importance of the coastal and marine environment surrounding the Islands. Alongside these two overarching designations are designations for discrete Special Protection Areas (SPAs) on all islands apart from St Mary's and Ramsar wetland site designations, again on all the islands apart from St Mary's.



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Additionally there are many Sites of Special Scientific Interest (SSSIs) which have been designated throughout the archipelago, for a range of biologically and geologically important interest features.

The open coast displays rocky intertidal foreshores, sand dunes and wide beaches, vegetated shingle ridges and vegetated, grassy embankments. The exposed cliff areas also support surprisingly diverse communities of flora and fauna and many are designated as internationally important coastal heathland as well as nationally important maritime cliffs and slopes.



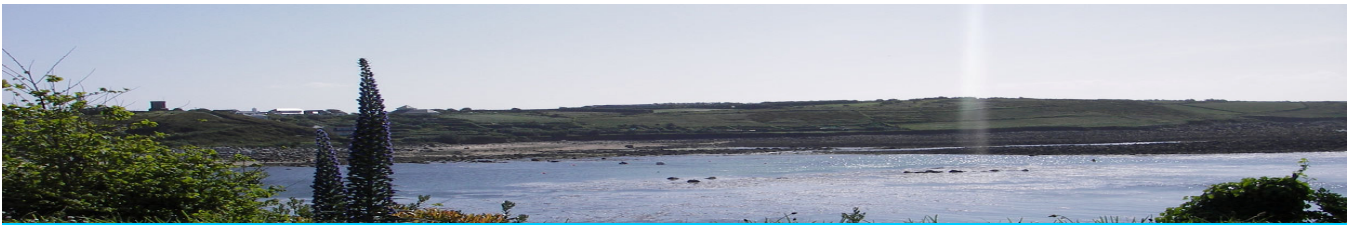
**Left:** The heather and bracken of the cliffs and slopes, the rocky outcrops and foreshores and the rich shallow coastal waters lying between the islands creates an inter-connected network of maritime habitats of international importance.

The Wildlife Trusts and nature conservation teams based within the Council of the Isles of Scilly provide the principal regulation, monitoring and management of the natural environment around the coast. Some islands, such as St Martin's, are managed almost exclusively by the Wildlife Trust; such is the importance of the network of habitats which exists there.

### Recreation and tourism

Recreation, for both residents and visitors, is a hugely important consideration when managing our shorelines. There are some particularly popular activities for which Scilly is synonymous; pilot gig rowing and the less strenuous pastime of bird watching are two particularly good examples.

Good management of the shoreline and its amenity benefits also provides support to local clubs and charities based around recreational activities. Considerate management of the shoreline for recreational purposes also has the additional benefit of generally looking after the natural environment at the same time, which not just helps habitats and the species which exist there, but helps to maintain healthy natural defences against flooding and erosion, which is of course a key objective of the shoreline management plan.



**Left:** Colourful pilot gigs line the shore at the Pilot Gig Rowing World Championships, held annually on the Isles of Scilly.

## The key objectives for the Cornwall and Isles of Scilly SMP

Considering the themes explored in the preceding sections, the following list of principles reflects the aspirations of the people living and working across the SMP area. These objectives have been developed by consulting the Client Steering Group (CSG), Elected Members Forums (EMF) and key stakeholders. It is important to note that these come from the values that these stakeholders place on the issues and features in different areas and, as the above sections identify, the coastline and its features are extremely diverse. Some of these aims therefore conflict with others and because of this the SMP is not able to achieve all of these objectives at each location. The agreed objectives are listed below and are set out in no particular order.

- To manage the risks to communities from flooding and support their adaptation and development of resilience.
- To manage the risks to communities from erosion and support their adaptation.
- To establish a long-term action plan which helps to minimise and reduce the reliance on defences in the future.
- To support the essential diverse character of the landscape and seascape of Cornwall and the Isles of Scilly.
- To allow natural evolution of the shoreline wherever possible.
- To minimise impacts upon the historic environment, without unduly preventing natural coastal processes.
- To support existing nature conservation values and minimise impacts upon habitats, while allowing adaptive response to natural change.
- To support the viability and core values of coastal settlements, in a manner consistent with the Government's sustainable development principles.
- To support diversification of tourism and recreational opportunities.
- To support the adaptation and resilience of regional and county wide transport links.



### 3. SMP key issues for the Isles of Scilly

There are a number of key issues which affect the Isles of Scilly. These are broad-scale issues which affect either the inhabited islands collectively or are principal drivers of policy at primary locations. The influence of wave action at many locations around the Isles of Scilly is linked to these broad-scale issues.

#### Wave impacts on communities

The impact of waves manifests itself as a number of different risks as far as shoreline management planning is concerned. Direct wave driven flooding on the open coast at exposed locations and erosion caused by wave action are the most obvious examples, but in addition to this is the risk to life, structural damage, wave impacts on coastal habitats and disruption to transport routes.



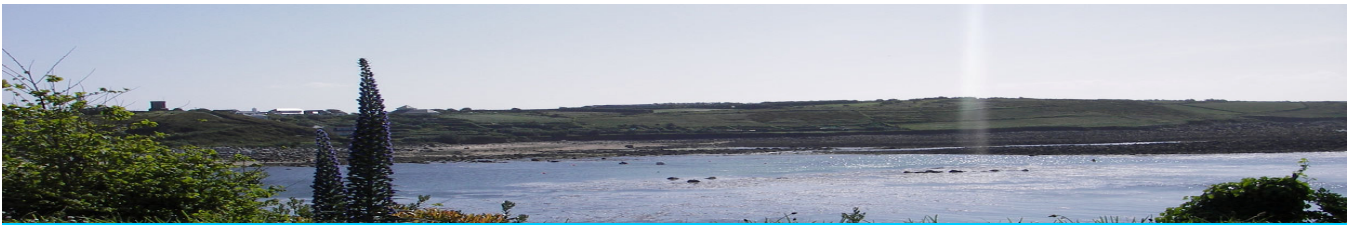
**Above:** Storm waves overtop the seawall at Porthcressa during a south-easterly storm.



**Above:** Hugh Town is exposed to extreme wave energy from the north west, particularly around the Well Battery.

The widespread nature of this issue dictates that wave impact is the key point for the SMP2 to address at a strategic level, as well as on a discrete location by location basis. An important aspect of this is for the SMP Review to identify what information is required to allow these risks to be fully assessed and accounted for by the land use planning system. This includes consideration of current monitoring strategies and how they may need to be improved in the future. Of particular relevance is the wave buoy network and requirements beyond the current arrangements because nearly all coastal areas of Scilly are affected to some degree by waves.

The standard high level method for SMPs to assess coastal flood risks is to consider theoretical still water inundation levels. However, due to the dominance of waves in this SMP area, the true benefits gained from investment in maintenance of existing defences or a new scheme are not fully represented. At many open coast locations, we can say that 'still water flooding' simply does not occur based on extreme tide height alone – there is always a wave-driven element to the flooding. Therefore, many actions promoted by



the plan, which appear to offer a low benefit / cost ratio, are expected to generate a more robust economic case once the real risk of flooding generated by wave action is investigated through more detailed analysis.

## Monitoring

The risks due to waves dictates a need for better understanding of the nature of the wave climate, both offshore and nearshore. There is often a strong correlation between the response of the shoreline (i.e. changes to the beaches, dunes and cliffs) and the wave climate. Monitoring helps us to understand how changes in wave climate may affect the shape and position of the shoreline in the future.

The South West Regional Coastal Monitoring Programme (SWRCMP) was put in place during 2006 and already provides a very useful resource for all coastal practitioners working in Cornwall. The programme covers the entire South West peninsula, including the Isles of Scilly. The initiative utilises both remote sensing and ground-based survey techniques to capture a wide range of physical characteristics along the coastline on a regular basis, to monitor changes caused by the waves and tides.

## Wave buoy network

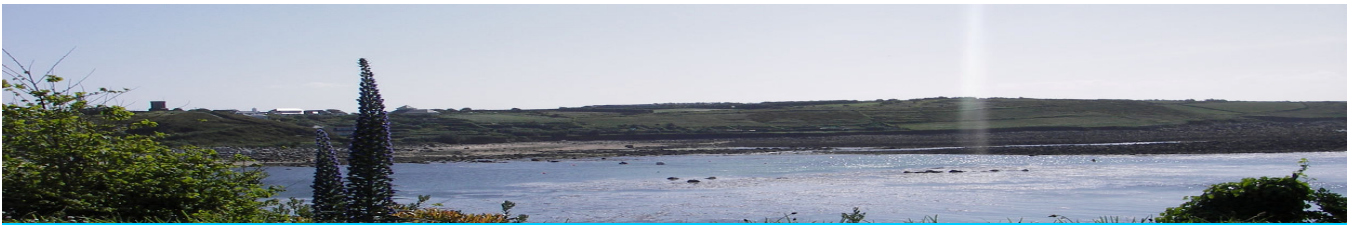
Because of the high importance of understanding the impacts of waves on the Isles of Scilly, the wave buoy network is a particularly important aspect of monitoring. Currently wave buoys are already deployed at discrete locations around the mainland Cornish coastline (Looe, Penzance and Perranporth) as part of the SWRCMP. At present however, no buoys are deployed within the coastal waters of Scilly.

The most obvious location which would benefit from such data is at Hugh Town (St Mary's). If finances allowed, there is an argument for two buoys to be positioned, which record both the westerly and easterly wave climates as the two are quite distinct. Deployments in the nearshore zone to the north-west and south / south-east of Hugh Town would therefore be very useful. The nearshore bathymetry, deeper channels, small offshore islands and rock outcrops which surround St Mary's play a hugely significant role in dictating the amount of wave energy received at the shoreline. Therefore final positioning of buoys would need to be given careful consideration.

## 4. Key conclusions of the Isles of Scilly SMP Review

### Priority locations

There are a number of key locations which the SMP Review regards as priority areas over the next 5-10 years. The following section provides an overview of the issues and the general intent of management and the preferred policy approach at some example locations. An indication of the priority actions considered necessary to support the intended management approach at each of these locations is also provided. This is not



an exhaustive list and there are other locations on Scilly where action is required, but they are representative of the main issues which face the islands at the present time.

### Hugh Town, Harbour & Town Beach

The frontages around Hugh Town Harbour and to the rear of Town Beach along Lower and Higher Strand will become more vulnerable to wave overtopping and inundation during storms. The overall intent of the plan is to move toward significant adaptation of the Hugh Town settlement around the Harbour in the longer term, due to sea level rise and climate change impacts. In the shorter term, regular monitoring, maintenance and some improvement of the existing defences will be required to continue with provision of defence to the town.

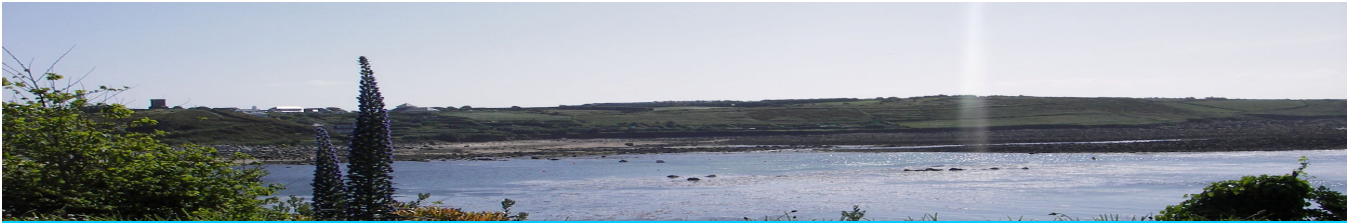


The frontage along Lower and Higher Strand will come under increasing pressure with properties increasingly at risk from wave overtopping and inundation as sea level rise accelerates

**Policy:** A continuous **hold the line** policy is preferred around the Hugh Town quay frontage in the short term, however in order to enable longer term adaptation to sea level rise, **managed realignment** is recommended in the longer term (beyond 2055) to the rear of Town Beach.

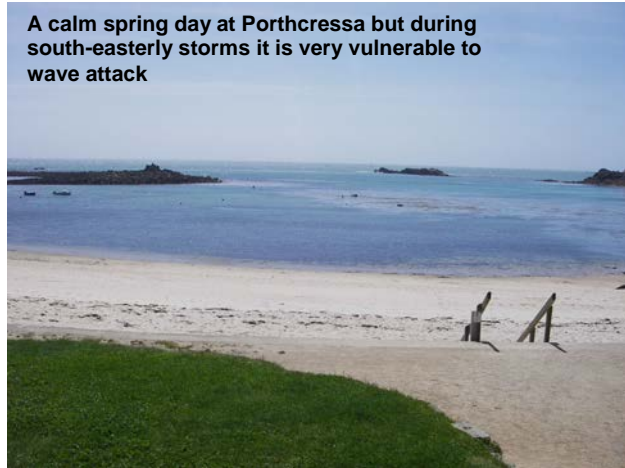
### Priority Actions for Hugh Town:

- Wave climate study and monitoring
- Beach and cliff erosion monitoring
- Local Development Framework to identify St Mary's as a Coastal Change Management Area
- Strategy to assess flood and coast defence options for Hugh Town, including adaptation and managed realignment
- Island strategy to assess risk to fresh water supply
- Isles of Scilly Flood and Coastal Risk Management Strategy



## Hugh Town, Porthcressa

The Porthcressa frontage is generally pressurised, with residential development exposed to wave overtopping and inundation. The narrow intertidal zone is already likely to be subject to coastal squeeze effects. Dealing with the risks along the Porthcressa frontage is central to managing the overall risk to Hugh Town. As such it needs to be considered as part of the wider detailed strategy. It is unlikely to be sustainable to hold the current defensive position in the longer term but recognising that there is limited scope for adaptation given the narrow width of land at this point.

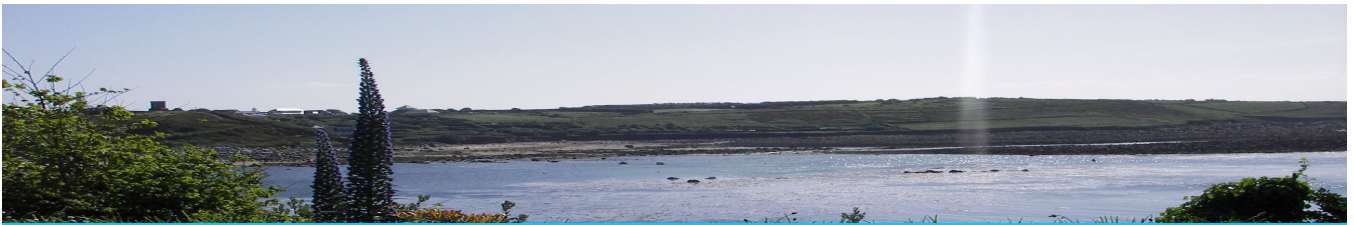


A calm spring day at Porthcressa but during south-easterly storms it is very vulnerable to wave attack

**Policy:** A **managed realignment** approach is preferred at Porthcressa in the medium to longer term to provide flexibility to adapt to increasing storminess. In the short term, (next 15 years) **hold the line** is preferred.

### Priority Actions:

- Wave climate study and monitoring
- Beach and cliff erosion monitoring
- Strategy to assess flood and coast defence options for Hugh Town, including adaptation and managed realignment
- Local Development Framework to identify St Mary's as a Coastal Change Management Area
- Isles of Scilly Flood and Coastal Risk Management Strategy



## Porth Mellon

Significant pressure on the Porth Mellon frontage from climate change dictates that a careful management approach is required. Locally, there is erosion risk to Telegraph Road and the boatsheds, gig sheds and café. A more strategic risk relates to the hinterland behind the beach which is low-lying and provides a route for flood waters into the Lower Moors area. This has implications for the freshwater supply for the whole island of St Mary's. Therefore the future management strategy needs to accommodate the increases in sea level rise and avoid coastal squeeze and foreshore narrowing while at the same time prevent serious inundation of the Lower Moors area. It is considered that a realignment approach needs to consider strengthening the natural dune system behind the beach.

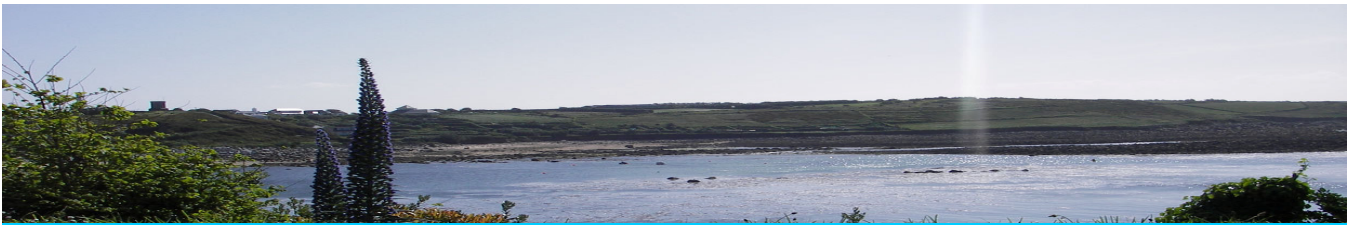


**Policy:** Realignment is needed to help manage the increasing flood risk. The preferred policy approach therefore is to **hold the line** in the short term and consider the controlled roll back and strengthening of the defensive line in the medium to longer term under a policy of **managed realignment**.

### Priority Actions:

- Beach and erosion monitoring and post storm damage surveys
- Beach and Dune Management Plan
- Potential realignment of highway
- Managed realignment strategy
- Isles of Scilly Flood and Coastal Risk Management Strategy





## Old Town Bay (& Porth Minick)

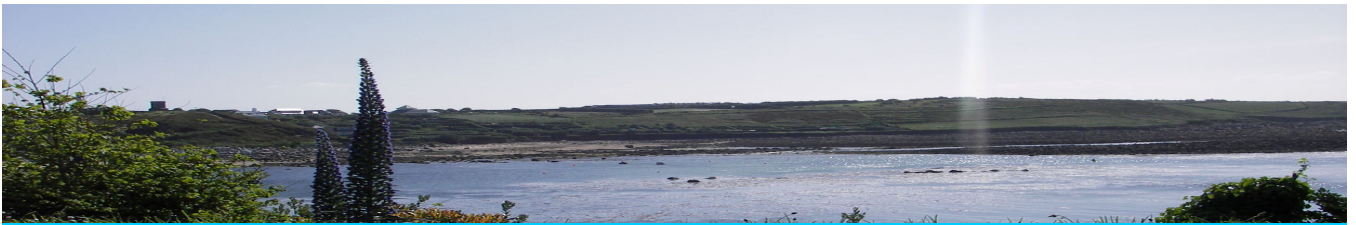
Erosional pressure along the Old Town frontage and the risk of inundation of the low-lying hinterland (Lower Moors) between Old Town and Porth Mellon during storms dictates that this is one of the most pressurised frontages on Scilly. The effects of climate change and sea level rise will exacerbate these risks, particularly beyond 50 years or so. Old Town Road which runs immediately behind the beach for some 150m also provides the main road between Hugh Town and St Mary's airport. The Old Church may also be at risk within the next 50 years.



**Policy:** The preferred policy approach is to **hold the line** in the short term and consider the controlled roll back of the defences over the longer term under a policy of **managed realignment**.

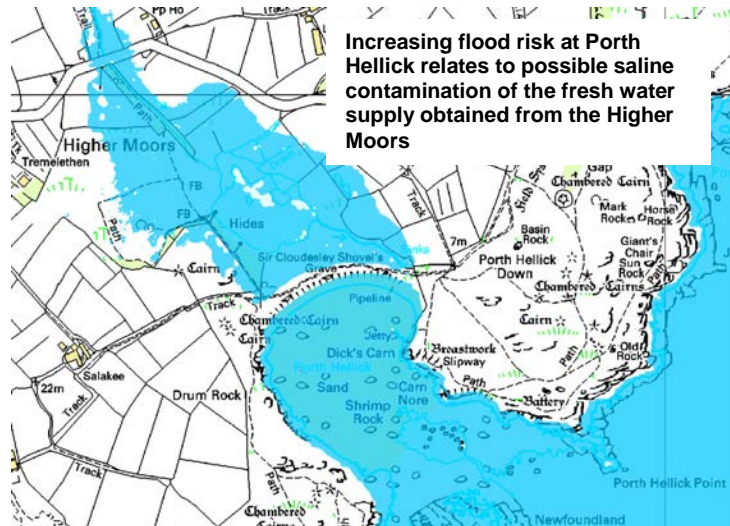
### Priority Actions:

- Wave climate study and monitoring
- Beach and erosion monitoring
- Beach management plan
- Managed realignment strategy
- Isles of Scilly Flood and Coastal Risk Management Strategy



**Porth Hellick**

The south-east facing bay and beach of Porth Hellick is exposed to south-easterly storms and waves. Porth Hellick provides a route through which storm surge and wave overtopping driven flooding could inundate a significant area adjacent to Carn Friars Farm and the Higher Moors. Although this has a limited direct impact on people and property, it has strategic implications for the fresh water supply to St Mary's due to risk of saline intrusion into the water table.



**Policy:** The preferred policy approach at Porth Hellick is to **hold the line** in the short term and then consideration should be given to how the embankment can be improved or adapted to provide a sustainable and robust defence to the Higher Moors area under a policy of **managed realignment**.

**Priority Actions:**

- Beach and erosion monitoring
- Managed realignment strategy
- Isles of Scilly Flood and Coastal Risk Management Strategy



### Appletree Bay & Tresco Flats, Tresco

The frontages of Appletree Bay & Tresco Flats on Tresco will face increasing pressure from erosion into the future. This may affect Appletree Road and other access routes up as far as New Grimsby Harbour. Although the more northerly part of this length of shoreline is sheltered from the worst of the wave energy, the fairly soft and erodible frontages will still be vulnerable to rising mean sea levels and wave effects, particularly where the granite outcrops give way to the soft ram cliffs. This could result in some recession of the cliff line, however due to the natural characteristics of the frontage, any defence would be undesirable under the SMP2 objectives.

#### Priority Actions:

- Beach and cliff erosion monitoring and post storm damage surveys
- Isles of Scilly Flood and Coastal Risk Management Strategy

The low cliffs along the south-west facing shoreline of Tresco demonstrate active erosion which is likely to accelerate as rises in mean sea level become more rapid



**Policy:** An ongoing policy of **no active intervention** is preferred along the frontages of Appletree Bay and Tresco Flats whilst at New Grimsby **hold the line** is the preferred ongoing policy.



### Big Pool, St Agnes

The principle shoreline management issue for St Agnes is the threat to the main drinking water supply (the Big Pool). If overtopping or failure of the defences around the Big Pool were to occur, there would be risks of saline contamination from seawater. Increasing frequency of storms and rising sea levels will increase this risk as time goes on. The preferred plan aims to make provision for the defence of this area, as it is so strategic to the well-being of the local community and the economy of the island.

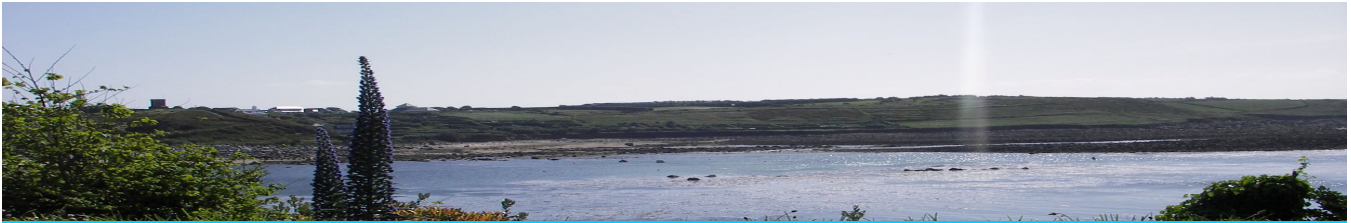
St Agnes & Gugh, viewed from the east



**Policy:** A continuous **hold the line** policy is recommended from Pereglis Slips to Ginamoney Carn and then from Ginamoney Carn to Browarth Point. There is also a recommendation that defences to the rear of Porth Killier should be maintained where possible to reduce risk of wave inundation from the north-east.

### Priority Actions:

- Beach and cliff erosion monitoring adjacent to Big Pool
- Island strategy to assess risk to fresh water supply
- Wave climate study and monitoring
- Isles of Scilly Flood and Coastal Risk Management Strategy



## Community adaptation locations

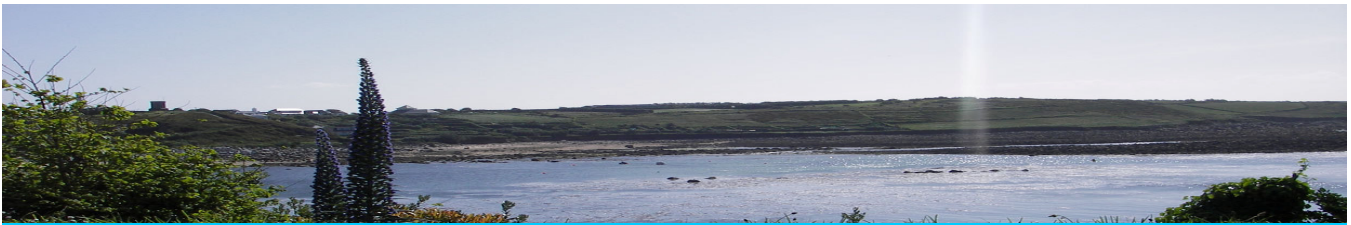
A requirement of all SMPs is to identify those locations where significant community adaption will need to occur at some point over the next 100 years, in order to address to the impacts caused by natural coastal evolution and climate change. Locations where the preferred plan and policies require an adaptation of the frontage to occur in relation to people, property, community assets and infrastructure are identified as Coastal Change Management Areas (CCMAs) or locations where a 'community adaptation strategy to climate change' would be appropriate.

St Mary's has been identified as both a Coastal Change Management Area (CCMA) and a location where an adaptation strategy would be appropriate due to the significant potential impacts on the community. On St Mary's over 100 private properties may be affected by increased flood risk and erosion in the future, along with community assets and infrastructure, including roads, pumping station, the hospital, fire station, incinerator, the industrial park and drinking water supply reservoirs.

## Highways at risk

A recurring risk around the entire coastline is that of erosion and flooding threatening the position and safety of coastal highways and pathways. There are a number of locations where actions will be required in the short to medium term, to ensure that local transport needs continue to be met. The bullet point list below identifies roads and locally important access routes around the inhabited Islands which could be affected.

- Hugh Street (Hugh Town, St Mary's)
- Higher Strand (Hugh Town, St Mary's)
- Buzza Road (Hugh Town, St Mary's)
- A3111 (at Porth Mellon, St Mary's)
- Old Town Road (at Old Town, St Mary's)
- French Lane (Old Town, St Mary's)
- New Grimsby (Harbour Road) (Tresco)
- Appletree Road (Tresco)
- Cruther's Neck (St Martin's)



### 5. The Action Plan

The Action Plan for the Cornwall and Isles of Scilly SMP Review provides the basis for taking forward the intent of management which is discussed and developed through Chapter 4 and summarised through the preferred policy choices set out in Chapter 5 of the main SMP document. The SMP guidance states that the purpose of the Action Plan is to summarise the actions that are required before the next review of the SMP. However in reality the Action Plan is looking much further into the future in order to provide guidance on how the overall management intentions for the next 100 years may be taken forward.

The Action Plan is a critical part of the SMP, because there are a number of conditional policies around the coast for later epochs, which need to be more firmly established based on monitoring and investigation. The Action Plan can therefore set the framework for an ongoing shoreline management process in the coming years, with the SMP3 in 5 to 10 years time as the next important milestone.

The CSG have approved the Action Plan based on the Preferred Plan. The Action Plan lists the identified measures necessary to implement the intent of management identified by the Preferred Plan. It identifies partners and sources of funding as well as prioritising the actions into Low, Medium and High priorities. Through signing up to the Action Plan, each CSG partner is demonstrating a commitment of intent to undertaking each action, as priorities allow and funding permits.

The Action Plan attempts to capture all intended actions necessary, to deliver the objectives at a local level. It should also help to prioritise flood and coastal risk management medium and long term planning budgets. A number of the actions are representative of ongoing commitments across the SMP area (for example to the South West Regional Coastal Monitoring Programme).

There are also actions that are representative of wide-scale intent of management, for example in relation to gaining a better understanding of the roles played by the various harbours and breakwaters located around the coast in terms of coast protection and sea defence. Additionally, gaining a better understanding of the influence of wave driven flooding and damage around the coastline at particular locations (as opposed to the derivation of flood risks from still water flooding) is identified as a key issue for this SMP coastline.

At a local level, many of the actions relate to the monitoring of cliffs, dunes and beaches, in order to provide ongoing surveillance on the actual nature of morphological change at individual sites, where the preferred policies are based on the perceived pressure on the frontage due to sea level rise, increased erosion rates and so forth.

A number of the site specific intended actions have been presented for the priority locations discussed in Section 4 above. Actions for all other locations are listed within the Action Plan (Chapter 6) within the full SMP report document.



A wide range of funding sources have been considered in drawing up the Action Plan, which include Environment Agency Flood and Coastal Risk Management funding, Defra Grant in Aid funding, Plymouth Coastal Observatory (monitoring), National Trust, English Heritage, and landowners such as private developers, the Duchy of Cornwall and Wildlife Trust. While the Action Plan does not commit these organisations to providing funding, it does document the wide range of interests that could be involved with investing in the sustainable management of the coastline. The potential sources of funding listed in the Action Plan are not exhaustive; all funding routes should be investigated further as the Action Plan is implemented.

It is intended that the SMP Action Plan remain a 'live' document and with updates to the Action Plan and details of completed and on-going studies and actions are reported via the CISCAG website.

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### Acknowledgements

The SMP Review has been completed on behalf of Cornwall and the Isles of Scilly Coastal Advisory Group (CISCAG). Members of CISCAG formed the SMP Client Steering Group, including representatives from the Local Authorities, Environment Agency, Natural England, English Heritage and the National Trust, who have overseen and guided the production of this plan. In addition, Elected Members Forums were established for Cornwall Council and the Council of the Isles of Scilly and their help in successfully completing this SMP Review is acknowledged.

CISCAG commissioned consultant engineers and environmental scientists Royal Haskoning to prepare the SMP2 and undertake the technical assessments. Coast and Country Projects Ltd were commissioned by CISCAG to undertake project management of the work. Funding has been provided by the Government through the Department of Food and Rural Affairs (Defra).

The Team would also like to thank Jane Hurd for providing some very useful photography which has helped to illustrate the risks and issues discussed within this summary document.



## Further information

### The full SMP report

The completed SMP Review document is available to view at the offices of the Council of the Isles of Scilly on St Mary's and at the principal offices of Cornwall Council. It is also available to view or download at [www.cornwall.gov.uk/smp](http://www.cornwall.gov.uk/smp).

### Accessibility

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