

PDZ: 4	Black Head to Zone Point	Management Area 08 Management Area 09 Management Area 10
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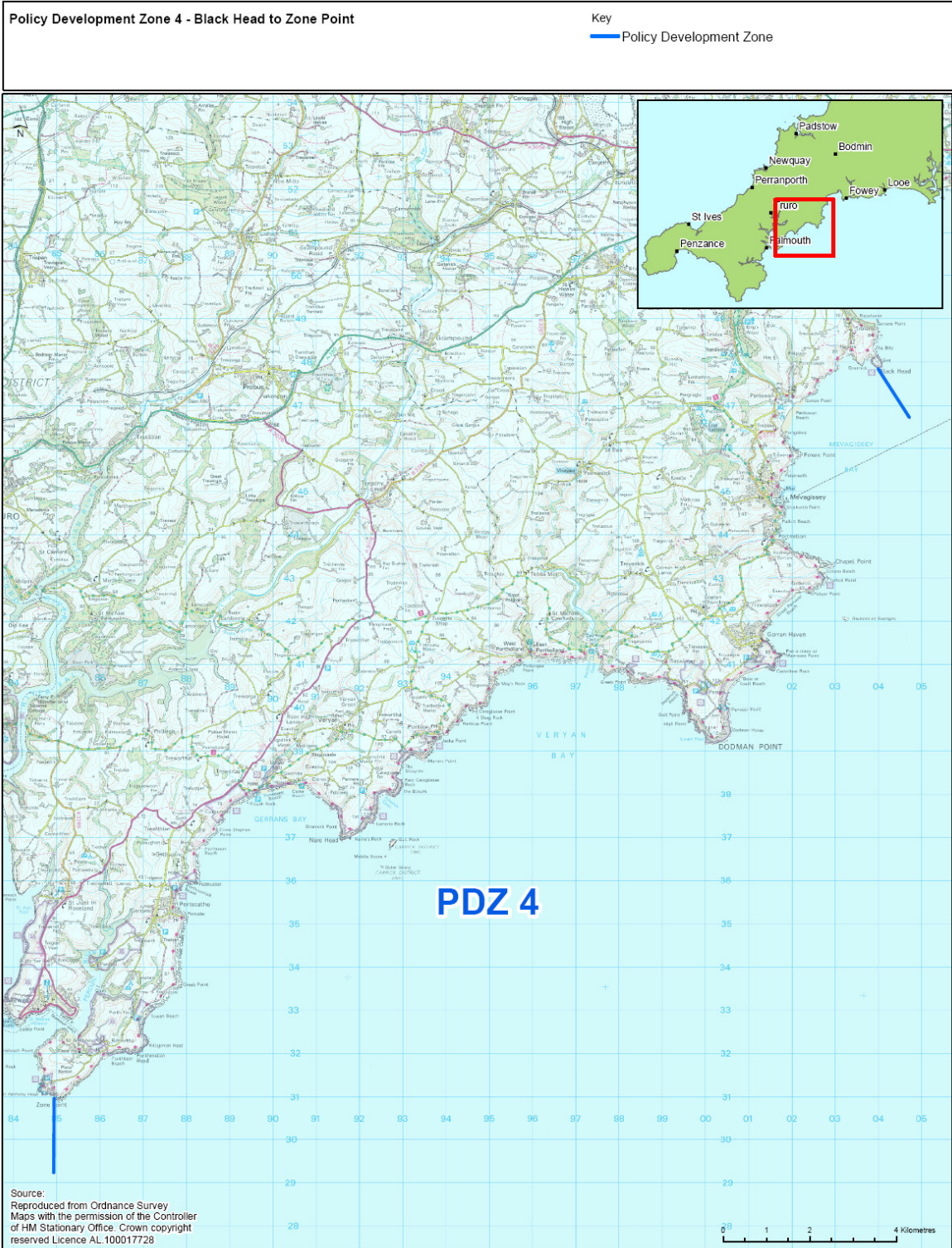


Veryan Bay looking toward the Roseland Peninsula

Black Head to Zone Point




The east and south east facing coast comprises a series of rocky bays delineated by headlands and backed by hard cliffs of variable height. South of Dodman Point two bays (Veryan Bay and Gerrans Bay) are divided by Nare Head. From Black Head south to Dodman Point, the east facing coastline of Mevagissey Bay contains the settlements of Pentewan, Mevagissey, Port Mellon and Gorran Haven. It is an example of a largely natural coastline, modified only in discrete areas.




At Dodman Point, the coast turns to face south within Veryan Bay. This area is an almost entirely natural frontage of hard cliffs, rocky shore platforms and rock outcrops. It is very sparsely populated with little modification. The only two settlements of note are Portholland and Portloe, both small settlements. Portholland is home to a small beach and Portloe a very small natural fishing harbour. In addition, there are small sandy pocket beaches at Hemmick Beach and Porthluney Cove. Despite its isolated nature, Porthluney Cove (also known as Caerhays Beach) is very popular with tourists and significant parking is located above the beach. A National Trust property is located at Hemmick Beach and despite its isolated nature, there are substantial defences along the back of the beach. Very limited parking exists there. West of Nare Head, Gerrans Bay again provides an isolated, naturally functioning coastline, of hard slate cliffs, rocky shore platforms and rock outcrops with little modification and sheltered from the extremes of the westerly Atlantic wave climate. The adjacent settlements of Portscatho and Gerrans are the only settlements of note. Beaches exist in discrete locations along the coastline, the main substantial beach being Pendower, which is popular with tourists, with plentiful parking and hotel accommodation present. Smaller sandy coves are present at Porthcurnick (just north of Portscatho) and Porthbeor, at the far south-western end of Gerrans Bay, close to Zone Point.



Cornwall & Isles of Scilly
Shoreline Management Plan Review

 CORNWALL COUNCIL	 Cornwall and the Isles of Scilly Coastal Advisory Group www.ciscag.org	 ROYAL HASKONING
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General Description	
Built Environment	
<p>The small harbour structures at Pentewan, Gorran Haven, Portloe, East Portholland and Portscatho lend character to their frontages providing an insight into the origins and history of these small communities. Historic buildings tend to be clustered around these waterfront areas, several of which are designated as conservation areas. The harbour at Mevagissey is a more substantial structure and still provides anchorage to one of the more significant fishing fleets in Cornwall. Mevagissey also has an extremely high concentration of listed buildings within its historic built environment. The coastal road between Mevagissey and Port Mellon closely follows the coast for around a mile, with retaining walls at Port Mellon acting as defacto defences. Access for tourism is important, as is the route of the south west coast path, which allows direct access to the cliff tops between the settlements.</p>	 <p style="text-align: center;">Mevagissey</p>
	 <p style="text-align: right;">Gorran Haven</p>
Heritage	
<p>The historic listed harbours at Mevagissey, Gorran Haven, Portloe and Pentewan are key aspects of the local heritage and help to give the area its diverse character and values. This coast is also valued for many other reasons including its outstanding natural beauty, archaeology, geology, fossils and habitats. There is some palaeo-environmental interest in a prehistoric submerged forest between Pendower and Portscatho and there are a number of conservation areas. Caerhays Castle is a Registered Park and Garden.</p>	 <p style="text-align: center;">Gorran Haven Harbour</p>

<p>Environment and Nature Conservation</p> <p>A significant section of the coastline is covered by the Fal and Helford SAC (almost as far east as Portloe) and the same section is covered by the Gerrans Bay to Camel Cove SSSI. The Cuckoo Rock to Turbot Point SSSI is also present within this PDZ. The Carricknath Point to Porthbean Beach SSSI is present on the south-east facing shoreline of Gerrans Bay (photo, right).</p>	<p>The Carricknath Point to Porthbean Beach SSSI</p> 
<p>Recreation and Amenity</p> <p>Mevagissey is the key visitor attraction within this area, whereas Pentewan provides holiday accommodation and a larger recreational beach. Gorrans Haven although less accessible, also attracts visitors in significant numbers. The east facing nature of this coastline section dictates that the shoreline is very sheltered and the frequently calm seas contribute to the sense of isolation and tranquillity. To the west, beaches and associated tourist facilities are present at Caerhays, Portholland and Pendower (photo, right), Towan Beach and the small harbour towns of Portloe and Portscatho also attract visitors.</p>	 <p>Pendower</p>
<p>Key Values and Drivers</p> <p>Key values for this area are the natural and isolated feel of the coastline, the unique experience provided by the character fishing communities at Mevagissey and Gorrans Haven, to both visitors and residents. The popular beach at Pentewan is also important to the area, in providing recreational opportunities and supporting the local economy.</p> <ul style="list-style-type: none"> • Valued natural and unspoilt coastline – Heritage Coast and AONB designations • Importance of recreational beaches • Historic settlement and Grade II listed harbour structures at Mevagissey • Large fishing fleet at Mevagissey • Significant implications of future flood risks at Mevagissey 	<p>Victoria Pier, Mevagissey harbour</p> 

PDZ Management Intent

The management intent would be to retain the character and attraction of locations such as Mevagissey but also to allow the remaining commercial activities to function efficiently. An important aspect of the management intent would be to support the adaptation of communities, particularly Mevagissey, to coastal change. Introducing management policy which allows the establishment of a more sustainable long-term shoreline position for the pocket beaches and coves is also an important aspect of management intent within this area.

Physical Coastal Processes (further details are provided in Appendix C)

The geology here is fairly typical of Cornwall; the bedrock being slates, sandstone and thin limestone beds, which are overlain by head deposits and raised beaches. The cliff activity here is quite low, and varies with the geology. It includes debris slides within the head and raised beaches and occasional undercutting/ rockfalls of the bedrock. This section of coast forms three bays (Mevagissey, Veryan and Gerrans), which are divided by Dodman Point and Nare Head. Each bay is essentially rocky, with shore platforms and hard cliffs, which range from being backed by a head slope to near vertical bedrock cliffs, with small local beaches that tend to form in the bays' northeast sections.

TIDE AND WATER LEVELS (mODN)

Location	LAT	MLWS	MLWN	MHWN	MHWS	HAT	Neap range	Spring range	Correction CD/ODN
Mevagissey	-	-2.35	-	-	2.35	-	-	4.70	-
Dodman Point	-	-2.38	-	-	2.39	-	-	4.77	-

Extremes(mODN)

Location:	1:1	1:10	1:25	1:50	1:100	1:200	1:500	1:1000
Mevagissey	3.03	3.34	3.48	3.56	3.69	3.79	3.92	4.05
Dodman Point	3.02	3.33	3.47	3.55	3.68	3.78	3.92	4.04

Wave Climate

The coastline as far as Dodman Point is very sheltered from the dominant westerly Atlantic conditions. It is however very exposed to the more infrequent storms and large waves that approach from the south-east.

Futurecoast estimates this area to have an annual 10% exceedance significant wave height of 1.5 to 2 m. Although this may be true for the offshore areas, nearshore 10% exceedance values are likely to be significantly less than this, given the very sheltered nature of the shoreline and beaches.

The section of coastline from Dodman Point westwards to Zone Point marks a change in orientation from St Austell Bay and is more exposed to the dominant westerly Atlantic conditions than the coast immediately to the east. Its south facing nature means that it has a relatively wide exposure to wave conditions from the south east to the south west. Veryan Bay is more exposed than Gerrans Bay, but they both still attain some shelter from south-westerly waves by the Lizard and Roseland Peninsula.

Futurecoast estimates this area to have an annual 10% exceedance significant wave height of 1.5 to 2 m.

The tidal range in this area is approximately 3.5m. The Futurecoast project explored the residual currents driven by these tides, and these are illustrated in Figure 3.13. They report that these currents are not significant drivers of sediment transport.

PROCESSES

Control Features:

The hard geology and the rocky headlands are the wider controlling features, locally the geology and headlands bounding the beaches act to control processes along with the hard defences. This frontage is currently stable and will be fairly resistant to sea level rise, however where small pocket beaches are constrained by defences or structures, some narrowing and loss of beach material may occur in the medium to long term due to rising sea levels and possibility of increased occurrence of south and south-easterly storms. This may be evident at Gorran Haven harbour and beach, Port Mellon (constrained by the retaining wall for the road), Hemmick Beach and East and West Portholland (hard parking area directly behind the beach).

Existing Defences:

There are existing defences at: Pentewan (harbour structures); Mevagissey (harbour arms, quay walls and seawalls); Portmellon (masonry seawalls, road retaining wall); Gorran Haven (harbour arm, quay walls, masonry seawalls, promenade and steps); Hemmick Beach (masonry seawall and revetment); Porthluney (Caerhays) Cove (wall and revetment); East and West Portholland (masonry seawall and apron); Portloe (maintained channel); Pendower Beach (seawalls and rock revetment); Portscatho (seawall and apron).

Mevagissey will be particularly vulnerable to sea level rise and increased occurrence of storm surge due to existing quay heights. The lack of processes connectivity along the coastline dictates that discrete intervention measures could be undertaken at Mevagissey to achieve local objectives without impacting on adjacent areas of coastline.

Processes:

Sediment is evident along this stretch of coastline at the frequent small pocket beaches and coves. There are no significant along-shore links between these small sandy accumulations. The coast is controlled by the resistant nature of the geology and the prominent headlands at Black Head, Chapel Point, Dodman Point, Nare Head and Zone Point.

Pentewan beach has significant sediment accumulations but this includes significant historical input of china clay waste. Although the beach and dunes should display some resistance to climate change, the supply of sediment to the beach is likely to decrease. The crest of the beach is very close to current extreme (1:200 yr) water levels. This indicates that an increasing vulnerability to flooding will develop through the SMP epochs due to on-going sea level rise.

There have been recent erosion and cliff slips recorded at Pendower Beach. The B3273 road which runs between Mevagissey and Portmellon is potentially at risk at Portmellon and more minor access roads at Hemmick Beach and Pendower may be at risk. Whilst these are locally important issues, they are unlikely to be seen as strategic.

Unconstrained Scenario:

Although unrealistic, because of the residual impact of defences, this scenario considers how the coast would evolve in the absence of defences.

The geology here is fairly typical of Cornwall; the bedrock being slates, sandstone and thin limestone beds, which are overlain by head deposits and raised beaches. The cliff activity here is quite low; subsequently under the unconstrained scenario only low levels of cliff recession would be experienced. Actual erosion levels would vary within discrete locations along the coast dependent upon the geology. The coast is very sparsely populated within this PDZ and the very small areas which have been modified by defences are hugely outweighed by the undefended cliffs and coves. Where there are small pocket beaches at Hemmick, Porth Luney, Portholland, Pendower and so forth, the rear of the beaches would be likely to roll back in line with sea level rise. The frontages of the small coves at Portloe and Portscatho would be likely to undergo some roll back of the shoreline, although this again is limited. Primarily due to their sheltered, east-facing nature.

POTENTIAL BASELINE EROSION RATES

Base rates have been assessed from monitoring and historical data. The range of potential erosion is assessed in terms of variation from the base rate and sensitivity in potential sea level rise.. The base rates provided below are taken as an average based on historical records. The rates are a composite value based on erosion of the toe and recession of the crest of the cliff and reflect the erosion rates following failure of defences.

(Sea Level Rise assumed rates: 0.06m to year 2025; 0.34m to year 2055; 0.96m to year 2105.)

Location	Historic recession rate (lower) (m/100 yr)	Historic recession rate (upper) (m/100 yr)	Projected 100 year erosion rate (lower) (m)	Projected 100 year erosion rate (upper) (m)	Notes
Pentewan	43	58	61.2	102.9	Harbour and quay stone wall (including some timber)
Mevagissey	0	0.5	0	3.0	Seawalls, quay walls and breakwaters, 10 year SoP
Portmellon	10	20	21.2	45.6	
Gorran Haven	0	5	10.6	28.8	Coastal protection walls
Hemmick beach	0	0	9.3	20.8	Wall along back of beach, 100 year SoP
Porthluney	0	0	17.5	43.8	Wall and revetment, 100 year SoP
East Portholland	0	0	11.9	29.8	Seawalls, 100 year SoP
Pendower Beach	2	0	11.2	27.9	Dunes
Portscatho	0	10	3	23.1	Seawalls, 100 year SoP

BASELINE MANAGEMENT SCENARIOS

PRESENT MANAGEMENT

Present Management is taken as that policy defined by SMP1, modified by subsequent strategies or studies. It should be noted that both in the case of SMP1 and that of many of the strategies undertaken before 2005, the period over which the assessment was carried out tended to be 50 years.

SMP1		
MU	LOCATION	POLICY
6D-2	Pentewan	Do nothing at harbour (possible reconstruction of harbour arm and walls if reopened in the future). Hold the line along the Winnick frontage through maintenance of existing embankment.
6D-2	Pentewan to Mevagissey	Do nothing with possible strategic implementation of private works if required.
6D-2	Mevagissey and Portmellon	Hold the line along defended sections. Do nothing along undefended sections.
6D-2	Portmellon to Gorran Haven	Do nothing.
6D-2 6D-3	Gorran Haven to Porth Luney	Do nothing (with possible strategic hold the line at Hemmick Beach).
6D-3	Porth Luney Cove	Do nothing.
6D-3	Porth Luney to Portholland	Do nothing.
6D-3	West Portholland to Portloe	Do nothing
6D-3	Portloe	Hold the existing defence line
6D-3	Portloe to Pendower Beach	Do nothing
6D-3	Carne and Pendower	Do nothing along undefended frontage. Hold the line to protect road and properties backing Carne Beach and Nare Hotel.
6D-3	Pendower to Portscatho	Do nothing (with possible maintenance of slip road)
6D-3	Portscatho	Hold the existing defence line in harbour area. Do nothing along undefended section to north of harbour.
6D-3	Portscatho to St Anthony Head	

Economic Assessment

The following table provides a brief summary of damages under the No Active Intervention scenario, determined by the SMP2 analysis for the whole PDZ. Further details are provided in Appendix H. Where further, more detailed information is provided by studies, this is highlighted. The table aims to provide an initial high level assessment of potential damages occurring under the erosion and flooding scenarios. The damages for each epoch are discounted present values.

ASSESSMENT OF EROSION DAMAGES

Epoch	0 -20 year		20 – 50 years		50 – 100 years		Total	
No Active Intervention								
<i>Location</i>	Number of properties	Present Value x £1000	Number of properties	Present Value x £1000	Number of properties	Present Value x £1000	Number of properties	Present Value Damages (£x1000)
PDZ4	0	0	17	702	21	305	38	1007
Total for PDZ								

ASSESSMENT OF POTENTIAL FLOOD RISK

Epoch	Flood risk tidal 2025		Flood risk tidal 2055		Flood risk tidal 2105		Total	
No Active Intervention								
<i>Location</i>	Number of properties	Present Value x £1000	Number of properties	Present Value x £1000	Number of properties	Present Value x £1000	Number of properties	Present Value Damages (£x1000)
PDZ4	154	999	194	706	252	297	252	2002

PDZ 4: Black Head to Zone Point Management Area Statements

Management Areas

PDZ 2 has been sub-divided into 2 principal management areas, these being:

MA08 Black Head to Dodman Point
MA09 Veryan Bay
MA10 Gerrans Bay

Within these areas a summary of policy is provided below. Management Areas statements are provided in the following sheets.

MA08 – Black Head to Dodman Point

Covering previous SMP1 management units:

6D-2	Pentewan
6D-2	Pentewan to Mevagissey
6D-2	Mevagissey and Portmellon
6D-2	Portmellon to Gorran Haven

MA09 – Veryan Bay

Covering previous SMP1 management units:

6D-2	Gorran Haven to Porth Luney
6D-3	
6D-3	Porth Luney Cove
6D-3	
6D-3	Porth Luney to Portholland
6D-3	West Portholland to Portloe
6D-3	Portloe

MA10 – Gerrans Bay

Covering previous SMP1 management units:

6D-3	Portloe to Pendower Beach
6D-3	Carne and Pendower
6D-3	Pendower to Portscatho
6D-3	Portscatho
6D-3	Portscatho to St Anthony Head