
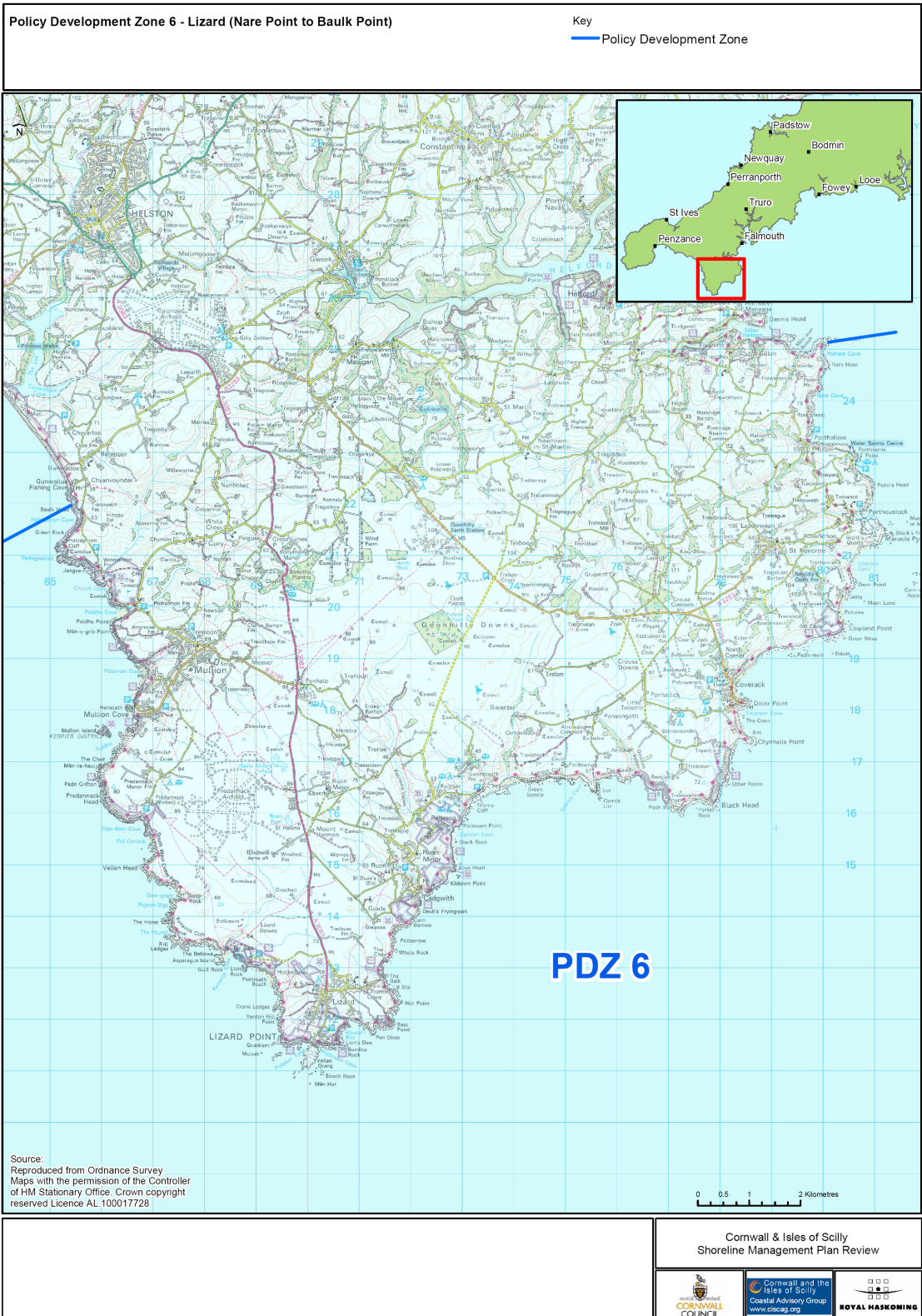






PDZ: 6	LIZARD (Nare Point to Baulk Head - Gunwalloe)	Management Area 15 Management Area 16
 <p style="text-align: right;">Sea cliffs at Mullion</p>		
<p>Nare Point to Baulk Head (Gunwalloe)</p> <p>This area covers the Lizard Peninsula. The southeast facing coastline is largely comprised of rugged, hard rock sea cliffs, and includes lengths of narrow shingle beach and pocket beaches. This shoreline fronts a coastal zone that is essentially agricultural and tourism based. There are also two fishing villages with small fleets at Coverack and Cadgwith. Both of these communities are located on the eastern side of the Lizard, making use of the natural shelter from the westerly wave climate, along with the settlements at Porthallow and Porthoustock. There are also two large quarries close to Porthoustock on the east side of the peninsula.</p> <p>The west facing coast is exposed to the dominant westerly Atlantic weather systems and its extremely energetic waves. As elsewhere along the south coast the predominant features are hard rock cliffs fronted by rock platforms and as on the eastern side, there are lengths of narrow shingle beach and pocket beaches. This side of the Lizard Peninsula is also notable for the small islands and rocks that have become disconnected from the mainland due to cliff erosion and rising seas. It is extremely sparsely populated but there is a small settlement at Mullion Cove and some residential and commercial properties along the cliff line around Polurrian Cove, Poldhu Cove and Jangye-ryn.</p>		



General Description	
Built Environment	
<p>There are very limited fixed assets at the coast, with those that are associated with the small coastal settlements and the occasional access road to beaches. The settlements with developed frontages directly at the shoreline are those at Coverack (photo, right), Porthallow and Cadgwith. It is no coincidence that these are located on the more sheltered eastern side of the peninsula. The larger settlements to the west, such as Mullion, tend to be slightly inland from the more exposed west coastline. RAF Culdrose is located on the Lizard peninsula but away from the immediate frontage.</p>	
Heritage	
<p>The historic features of interest include the Romano British saltworks between Lowland Point and Coverack, numerous coastal barrows, Mullion harbour, the 19th century fishing complex at Gunwalloe Fishing Cove, and Winwalloe Church set within the dunes at Church Cove (photo, left). There are also several conservation areas, including Cadgwith, with many associated listed buildings. There are numerous other historic features of interest including scheduled monuments and protected wrecks. There are historical / archaeological associations with WWII at Kennack Sands.</p>	
Environment and Nature Conservation	
<p>Environmental designations are significant with the Lizard SAC, the Fal and Helford SAC, the Lizard National Nature Reserve, a range of SSSIs and BAP Priority habitat present, as well as AONB and Heritage coast landscape designations. The Lizard is particularly valued for the geology of its dramatic sea cliffs (photo, right) with rare examples of serpentine and other igneous intrusions found nowhere else in the UK.</p>	

<p>Recreation and Amenity</p>	
<p>Tourism and recreation is an important aspect of the local settlements and their economies. There are a series of pocket beaches, and those at Polurrian, Poldhu (photo, right) and Church Cove on the more exposed, western coast are tourist destinations, with beaches at Kennack Sands and Porthoustock and fishing villages at Coverack and Cadgwith, on the sheltered east side of the peninsula, also drawing visitors.</p>	<p>Poldhu Cove</p> 
<p>Key Values and Drivers</p> <p>The key values of the area are the remote and unspoilt nature of the coastline within which traditional commercial activities of fishing provide identity to coastal settlements which tourism and recreational activities help to sustain.</p> <ul style="list-style-type: none"> • Natural, rugged and unspoilt nature of the Lizard peninsula • Environmental and landscape designations • Small coastal communities • Fishing • Tourism and recreation 	
<p>PDZ Management Intent</p> <p>The overarching management principle is therefore to allow the natural evolution of the coast, while supporting the viability of the coastal communities and their adaptation to coastal change where necessary (particularly at Coverack). Introducing management policy which allows the establishment of a more sustainable long-term shoreline position for the pocket beaches and coves is an important aspect of management intent within this area.</p> <p>The National Heritage Coast objectives are felt to appropriately define the key values and management principles:</p> <ul style="list-style-type: none"> • Conserve, protect and enhance the natural beauty of the coasts, their marine flora and fauna, and their heritage features. • Facilitate and enhance their enjoyment, understanding and appreciation by the public. • Maintain and improve the health of inshore waters affecting Heritage Coasts and their beaches through appropriate environmental management measures. • Take account of the needs of agriculture, forestry and fishing, and of the economic and social needs of the small communities on these coasts 	

This coastline largely comprises rugged, hard rock sea cliffs, and includes lengths of narrow shingle beach and pocket beaches. The west facing coast is exposed to the open Atlantic and extremely energetic waves. As elsewhere along the south coast the predominant features are cliffs fronted by rock platforms. The Lizard Peninsula is notable for the small islands and rocks that have become disconnected from the mainland due to cliff erosion and rising seas.

TIDE AND WATER LEVELS (mODN)

Extremes(mODN)									

The coastline from Nare Head to Lizard Point faces mostly east or south-east and is therefore relatively sheltered from the dominant westerly Atlantic conditions. It is however exposed to the more infrequent storms and large waves that approach from the south and south-east. Estimates suggest this area to have an annual 10% exceedance value for significant wave height of 1.5 to 2 m. Although this may be true for the offshore areas, nearshore values are likely to be significantly less than this, given the sheltered nature of the shoreline and beaches.

The westerly facing coast of the Lizard faces the open Atlantic and is exposed to extremely energetic waves from the west and south-west. The annual 10% exceedance wave height is 2.0-2.5m. The variation between east and west sides of the Peninsula is marked, but wave driven transport of sediment is cross-shore at all the discrete coves and beaches, meaning there is virtually no alongshore connectivity between locations.



The tidal range in this area is approximately 3.5 metres. The Futurecoast project explored the residual currents driven by these tides and reported that these currents are not significant drivers of sediment transport.

PROCESSES

Control Features:

The very resistant igneous geology of the Lizard provides the principal control across this frontage. The local activity of the cliffs varies, depending on the local rock type and head/ beach deposits. The igneous rocks of the Lizard peninsula are particularly

resistant, and so their level of activity is correspondingly low. Locally, headlands, nearshore islands and rocky outcrops provide varying degrees of shelter to the coves and beaches, therefore exerting local control at locations such as Coverack, Porthoustock, Cadgwith, Lizard Point, Kynance and Mullion.

Existing Defences:

Lizard east: There are raised defences and channel outfall structures at Porthallow; quay wall / jetty structures exist at Porthoustock and Dean Quarry (associated with the quarry works); there is a Cornwall Council maintained breakwater and seawall at Coverack; at Kennack Sands there are vertical sea walls and rock armour positioned at the rear of the beach; there are slipway and masonry wall structures in the cove at Cadgwith.

Lizard west: The harbour structure at Mullion is owned by the National Trust; there are low vertical masonry walls at the rear of Poldhu cove, acting to retain the road but also providing a coastal protection role; a vertical masonry wall defends the south-eastern boundary of St Wynwalloe Church at Church Cove; some poor condition rock armour revetments are in place at Jangye-ryn.

Processes:

SMP1 concluded that there is relatively little sediment exchange between beaches held within embayments along this coast. It is argued that material is instead moved offshore at headlands due to increased wave activity at these locations, coupled with increased seaward directed tidal currents and steeper sloping shore platforms.

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 natural tendency on the pocket beaches in the absence of defences would be for continued slow erosion of the cliffs flanking the bays, providing a limited sediment input to the beach. Beach deposits are limited and where they do occur they are generally stable, although they may exhibit some seasonal variation, and are likely to retreat under the influence of sea-level rise. These beaches are likely to maintain their overall form, but may experience some retreat. Backing low-lying areas are likely to experience some flooding under storm conditions.

On the cliff and rock platform frontages there would be slow erosion with actual rates varying, dependant upon local geology. The bedrock geology, cliffs and platform are generally resistant to erosion, and it is only the head deposits that would display any notable retreat. This is likely to be most pronounced at Church cove and Jangye-ryn where head deposits are significant and backed by low, vegetated mature dune slacks.

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
Porthallow	10	50	9.6	48	Beach backing onto road and properties
Coverack	0	20	0	19.2	Beach wall and road to rear, wall 100 year SoP
Mullion Cove	15	25	14.4	24	Breakwaters/quay
Poldhu Cove	20	20	36.4	36.34	
Church Cove	15	25	27.3	45.5	Wall shown adjacent to Church Cove no NFCDD, not evident on aerial photography

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-5	Gillan to Porthallow	Do nothing strategy
6D-5	Porthallow	Hold the line
6D-5	Porthallow to Porthoustock	Do nothing strategy
6D-5	Porthoustock	Do nothing strategy
6D-5	Porthoustock to Coverack	Do nothing strategy
6D-5	Coverack	Hold the existing defence line strategy along developed frontage. Do nothing short term along undefended lengths with cliff stability monitoring.
6D-5	Coverack to Kennack	Do nothing strategy
6D-5	Kennack Sands	Long term retreat at west beach. Long term hold the existing line of defences fronting the development. Short term monitoring along cliff top further east. Possible long term relocation of access road.
6D-5	Kennack to Cadgwith	Do nothing strategy
6D-5	Cadgwith	Hold the existing defence line along the Cadgwith frontage with possible new defences on the currently undefended lengths.
6D-5	Cadgwith to Lizard Point	Do nothing strategy
6E-1	Lizard Point to Kynance Cliff	Do nothing strategy
6E-1	Kynance Cliff to Predannack Head	Do nothing strategy
6E-1	Predannack Head to Pedgwinian	Do nothing strategy along undefended lengths. Hold the line along defended lengths.

Economic Assessment

The following table provides a brief summary of damages 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 two baseline scenarios. The damages for each epoch are current values. These are discounted to give present values in the final column.

ASSESSMENT OF EROSION DAMAGES

Epoch	0 -20 year		20 – 50 years		50 – 100 years		Total		
No Active Intervention	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)	
Location									
PDZ6	1	47	17	729	30	376	48	1,152	
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	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)
Location								
PDZ6	4	37	4	20	10	10	10	67

PDZ 6: Nare Point to Baulk Head (Gunwalloe) Management Area Statements

Management Areas

PDZ 6 has been sub-divided into 2 principal management areas, these being:

MA15 Lizard East (Nare Point to Lizard Point)
MA16 Lizard West (Lizard Point to Baulk Head)

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

MA15 – Lizard East (Nare Point to Lizard Point)

Covering previous SMP1 management units:

6D-5	Gillan to Porthallow
6D-5	Porthallow
6D-5	Porthallow to Porthoustock
6D-5	Porthoustock
6D-5	Porthoustock to Coverack
6D-5	Coverack
6D-5	Coverack to Kennack
6D-5	Kennack Sands
6D-5	Kennack to Cadgwith
6D-5	Cadgwith
6D-5	Cadgwith to Lizard Point

MA16 – Lizard West (Lizard Point to Baulk Head)

Covering previous SMP1 management units:

6E-1	Lizard Point to Kynance Cliff
6E-1	Kynance Cliff to Predannack Head
6E-1	Predannack Head to Pedngwinian