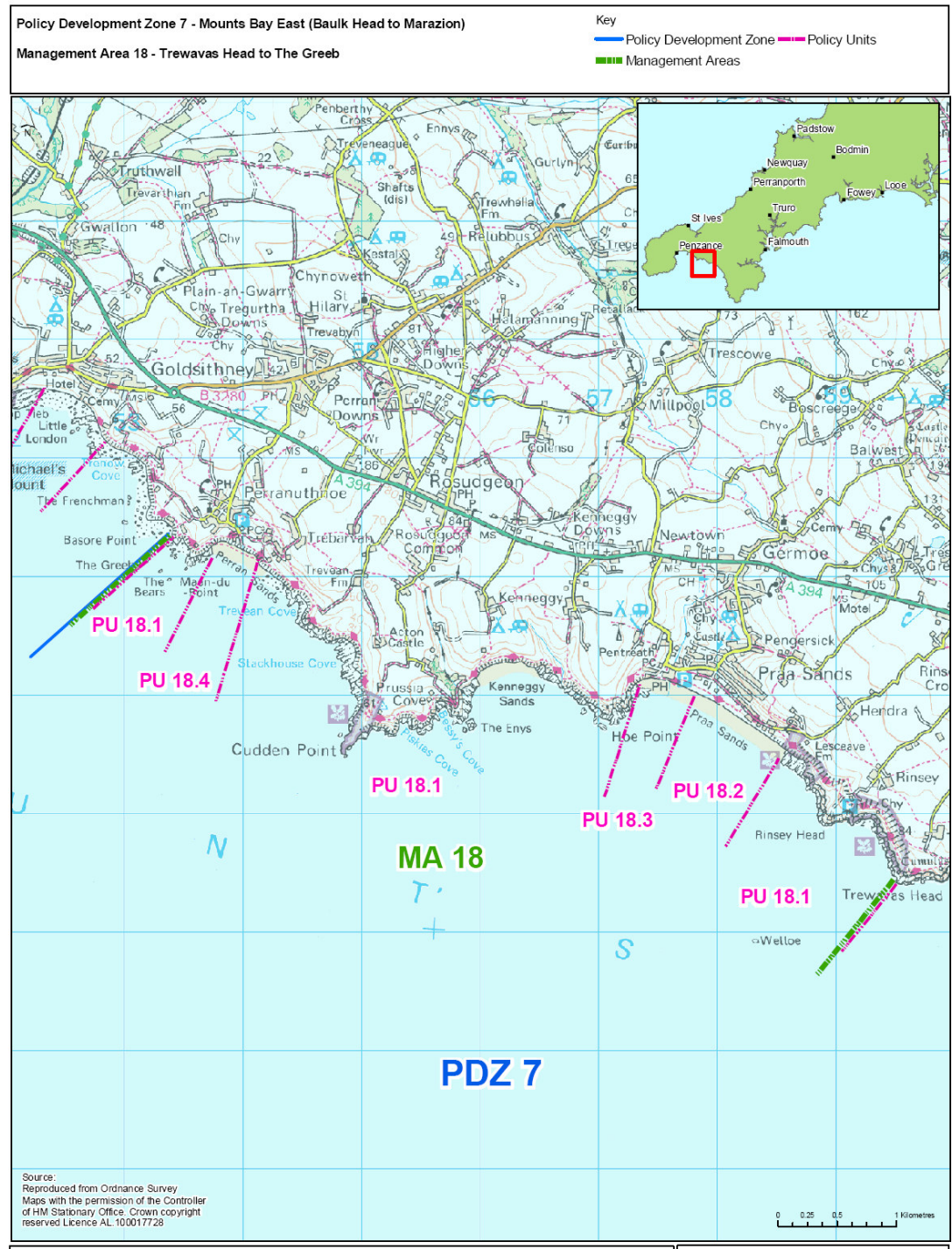


Location reference: Trewavas Head to The Greeb
Management Area reference: MA18
Policy Development Zone: PDZ7



Cornwall & Isles of Scilly
Shoreline Management Plan Review

CORNWALL COUNCIL
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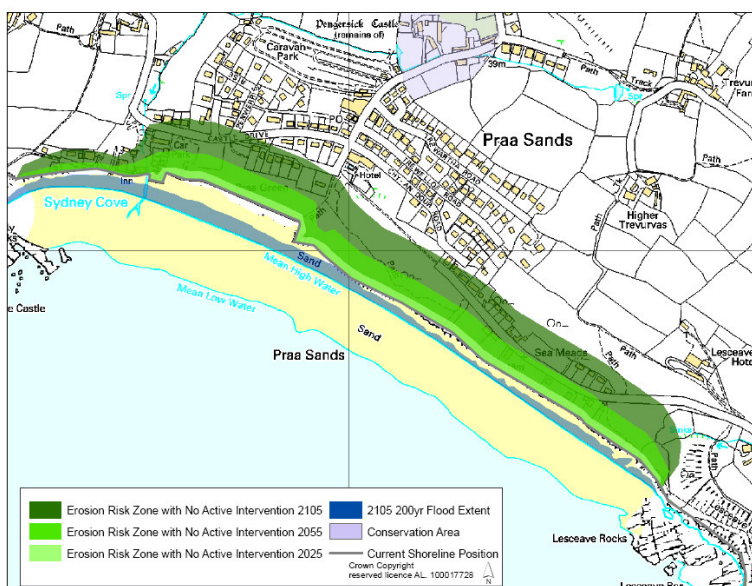
DISCUSSION AND DETAILED POLICY DEVELOPMENT

The section of coastline running from Trewavas Head through to the east side of Marazion is around 10km in length, of which over 8km is undefended cliff (mostly resistant slate with some igneous intrusions). There is around 1.8km of sandy beach frontage, the majority at Praa Sands. The natural, undefended cliffs through this management area are highly valued for their geology and maritime habitats. There are also heritage interests – for example the entire Rinsey Head area is part of the Cornwall and West Devon Mining Landscape World Heritage Site (Wheal Prosper) and there are listed fish cellars at Prussia Cove. Gun emplacements and pill boxes are present just to the east of Praa Sands. There are also a number of listed buildings, including Porth-en-alls Lodge adjacent to Prussia Cove. The assessment of flood and erosion risk has not identified any of these features along the hard cliffs as immediately at risk during the period through to 2105.

The intention of the preferred plan therefore would be to continue to manage these areas (the entirety of policy unit 18.1) on a non-interventional basis. This approach should meet the objectives of the Cornwall AONB. This includes the entirely undefended beach at Kenegy (Kenegy Sands). It is envisaged that the non-interventional policy approach continues to include the funding of a strategic coastal monitoring programme, in order to inform future SMP reviews and local strategies and studies, including surveillance of the condition of the World Heritage site.

Under a NAI scenario there is likely to be some re-routing of the current SW Coast Path, but this should be relatively straightforward as realignment of the path is not constrained at any point by development.

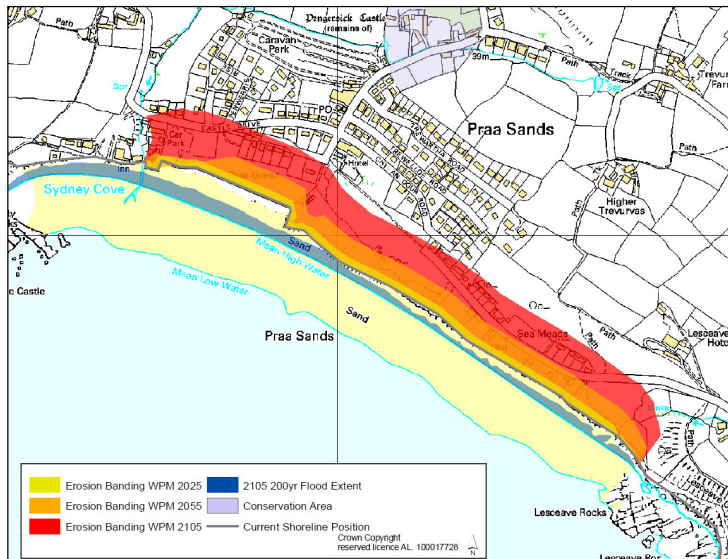
Praa Sands is 1.2km in frontage length; it sits as a lower-lying area between the headlands of Rinsey and Hoe Point to the east and west respectively. The majority of



this frontage has a moderately wide sandy foreshore, in front of low head cliffs of soft boulder clay. A climbing dune system is established above the foreshore on the low cliffs. The Cornwall Sand Dune and Beach Management Strategy notes that between 1888 and 2000 MHW and MLW have retreated at the south-eastern end of the beach and advanced at the north-western end. It

also reports that the main source of material to the beach is likely to be from erosion of the cliffs and that currently there is a net loss of material across the foreshore. The very soft nature of the low cliffs results in significant erosion, mostly due to slumping following

episodes of toe erosion. The south-west facing nature of the beach dictates that it is exposed to high wave energy, exacerbating the erosion levels. The beach between mean low and mean high water is owned by Cornwall Council.



The assessment of risk at Praa Sands indicates the high levels of erosion that might be expected over the period of 100 years under a non-interventional policy and under the with present management scenario (see inset maps, above and left). The maps show the anticipated possible zones of erosion by 2055 and 2105. With a maximum possible shoreline retreat of up to 120m, there are obviously significant implications for

the Praa Sands settlement, even under the WPM scenario which retains the defences at Sydney Cove.. A number of assets would be at risk, including Castle Drive, Hendra Lane, residential properties along the Hendra and Praa Green frontages, commercial properties and tourist facilities at Sydney Cove and the two car parks at Sydney Cove.

There are rock armour and seawall defences at the Sydney Cove (west) end of the beach whilst there are no formal defences along the Hendra frontage. Whilst there is an economic justification for continued maintenance of defences at Sydney Cove, it is not viewed within the preferred plan as sustainable over 100 years to hold the shoreline of Praa Sands in its current position, given the soft nature of the low cliffs. It would be technically difficult to do so without very significant engineering works which would not meet objectives of the AONB and could impact upon the amenity value of the beach. In addition, erosion of the head cliffs provides an important source of material to the beach and preventing the erosion of the cliffs and holding the shoreline in position would not only result in coastal squeeze due to intertidal narrowing from sea level rise but it would also remove a primary source of beach material, further exacerbating the coastal squeeze effect.

A policy of managed realignment is generally preferred across the frontage of Policy units 18.2 and 18.3. With no intervention, loss of property and roads would be likely to occur beyond epoch 1, perhaps as early as 25-30 years and this must be planned for and consultation undertaken with the local community.. It is thought that a dune management strategy may provide a mechanism for the control and management of the rates of erosion, but this is unlikely to be entirely successful without the creation of some hard control points. This would ideally sustain both the Castle Drive through route (locally important) and the majority of the tourist amenities at Sydney Cove and Praa Green, although there would need to be acceptance of some readjustment of shoreline position and possible loss of some car parking and commercial outlets directly above the

shoreline in the medium term. In the longer term some loss of property is likely – again the managed realignment approach would help to control erosion rates but not prevent it occurring altogether. A very robust benefit / cost ratio of 12.8 is shown in the Economics Summary Table below (see also Appendix H) due to no costs being allocated to holding the line, this therefore provides support for a lower key managed realignment approach.

Praa Sands will be subject to significant coastal change and Land Use Planners should consider identifying the area as a Coastal Change Management Area. This should be accompanied by policies to support any roll back of properties and community assets.

Around 5km to the north-west of Praa Sands is **Perran Sands** and the small settlement of **Perranuthnoe**. The main village area is some 150m from the cliff top but there are some limited assets closer to the cliff edge, including access roads, slipway, car park and five residential and commercial properties



Perranuthnoe beach & eroding cliffs



Perranuthnoe defences

closer to the cliff edge. A quite substantial amount of rock armour currently defends the slipway position plus there are masonry walls and granite and concrete steps (see inset photos left and below). This slipway is not in commercial use. The cliff composition is similar to Praa Sands, in that the cliffs are low head (soft boulder clay) although they are relatively higher at around 4m (see inset photo above). There is no climbing dune system above the cliffs at this location. The assessment of

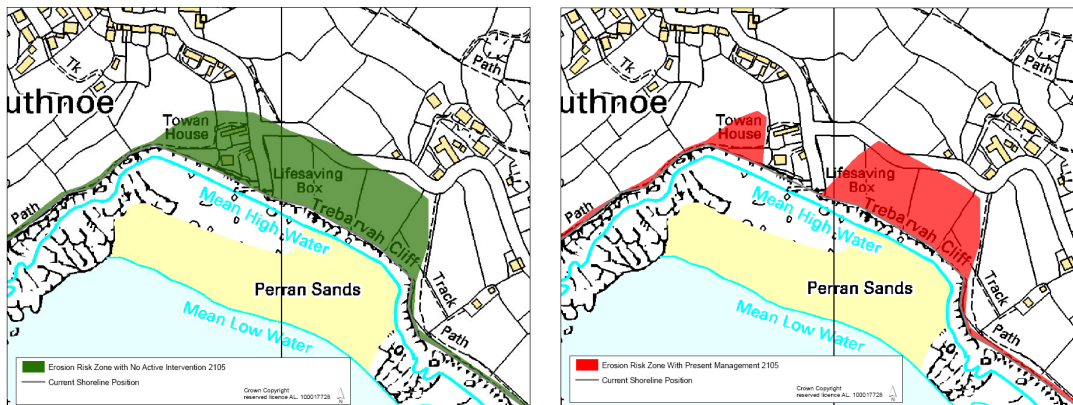
erosion risks indicates a possible zone of erosion which could cause retreat of the current cliff top by as much as 80m within 100 years under a no active intervention scenario (see inset map below).

The defences around the slipway are substantial and will hold the slipway position and immediate cliff top for at least 20 years. The rock also partially defends the position of the closest properties to the cliff top. A continuing hold the line approach at these defences would mean ongoing and significant maintenance and investment. Over the period of 100 years the position of this section of shoreline would become increasingly unsustainable as the coast eroded back immediately to either side of the rock defences. Given that essentially the defences only protect amenity access to the beach and there is no commercial use of the slipway, it appears economically unjustified to enter into long term commitment to defend the current shoreline position which is already held forward of where it would naturally be in the absence of defences.



Beach access steps

The preferred plan at Perranuthnoe therefore would be no active intervention. The current defences are likely to provide continued protection of the cliff edge for at least 20 years. During that time there will be some cutting back of the cliffs to both sides and outflanking of the defences, particularly on the eastern side. A roll-back strategy would need to be used to manage the coastal change to the affected properties. It would be anticipated that any necessary action to make the beach safe for use as the defences fail would be part of the NAI approach.



SUMMARY OF PREFERRED PLAN RECOMMENDATIONS AND JUSTIFICATION PLAN:

Location reference:	Trewavas Head to The Greeb
Management Area reference:	MA18
Policy Development Zone:	PDZ7

PREFERRED POLICY TO IMPLEMENT PLAN:	
From present day (0-20 years)	NAI along undefended cliff section. MR along Praa Sands east frontage. MR along Praa Sands west frontage. NAI at Perranuthnoe.
Medium term (20-50 years)	NAI along undefended cliff section. MR along Praa Sands east frontage. MR along Praa Sands west frontage to provide transition. NAI at Perranuthnoe.
Long term (50 -100 years)	NAI along undefended cliff section. NAI along Praa Sands east frontage. MR along Praa Sands west frontage. NAI at Perranuthnoe.

SUMMARY OF SPECIFIC POLICIES

Policy Unit		SMP1 Policy	SMP2 Policy Plan			Comment
		50 yrs	2025	2055	2105	
18.1	Undefended cliffs	Do nothing	NAI	NAI	NAI	Will allow natural evolution of the coastline. Will meet high level objectives for AONB.
18.2	Praa Sands east	Do nothing	MR	MR	NAI	Managed realignment approach should allow control over the rate of erosion without creating an unsustainable frontage. This needs to be linked in with the approach for Sydney Cove and the whole frontage can be managed under the same management scheme/approach.
18.3	Praa Sands west (Sydney Cove)	Hold the line	MR	MR	MR	Managed realignment approach is preferred which links in with the Praa Sands East frontage. It is anticipated that residual life of defences would provide defence to the assets during epoch 1 if required as part of the overall MR approach.
18.4	Perranuthnoe	Do nothing (short term)	NAI	NAI	NAI	Soft eroding frontage, current shoreline position is unsustainable, scale of defence effort required to HTL is unlikely to justify holding purely for amenity beach access and few properties.
Key: HTL - Hold the Line, A - Advance the Line, NAI – No Active Intervention MR – Managed Realignment						

ENVIRONMENTAL ASSESSMENT
<p>Strategic Environmental Assessment (SEA):</p> <p>Between Trewavas Head to The Greeb, the long-term policy is for NAI along the undefended coast and Praa Sands east with MR policy used along the frontages of Praa Sands west to maintain current standards of defence. The NAI policy will allow natural erosion of geological features associated with the Porthcew SSSI, Cudden Point to Prussia Cove SSSI and Cornwall AONB, however the same policy will potentially impact the Wheal Trewavas Copper Mine 310m south of Trewavas. The policy of MR will potentially impact Folly Rocks SSSI, Praa Sands RIG site and Cornwall AONB through the prevention of natural processes.</p>

Habitat Regulations Assessment (HRA):

HTL is proposed at Porthleven and Praa Sands West, and MR proposed at Loe Bar and Pool. These policy locations are some distance (at least 1.8km) from all Sites and, therefore no direct or indirect effects are expected.

IMPLICATION WITH RESPECT TO BUILT ENVIRONMENT

Economics Summary		by 2025	by 2055	by 2105	Total £k PV
Property	Potential NAI Damages (£k PV)	0.0	610.3	829.7	1440.0
	Preferred Plan Damages (£k PV)	0.0	457.8	207.4	665.2
	Benefits of preferred plan (£k PV)	0.0	152.6	622.3	774.9
	Costs of Implementing plan (£k PV)	39	22	0	61
		Benefit/Cost ratio of preferred plan			12.8

Notes

Robust B/C ratio as no capital costs allowed for reconstruction of defence to HTL

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