

# Walton-on-the-Naze Coastal Management

## Background information

The town of Walton-on-the-Naze lies on the north-east coast of Essex, about 10 kilometres south of the port of Harwich. The town itself has a population of around 6,000 people although this increases with visitors during the summer. The word Naze comes from the old English word 'naes' which means nose. The Naze itself is a promontory found to the north of the town. Part of it is made up of a hill about 23 metres high which ends in cliffs which rise directly from the beach. Further north the land gets gradually lower 300 metres until it drops to the level of the beach. The Naze separates the North Sea on its eastern edge from the Walton Channel on its west. In the north, the land ends in salt marsh.

At the highest point of the Naze stands the Naze Tower. Trinity House built the 26 metre high octagonal Naze Tower in 1720 as a navigational mark to aid shipping. Originally there was a beacon on the top and it was an early form of lighthouse. Open to the public, the tower is a Grade II\* listed building of unique architectural and historic interest and is the only one of its kind in existence. This listing places it in the top 5% of heritage buildings and the top twenty listed lighthouses in the country.

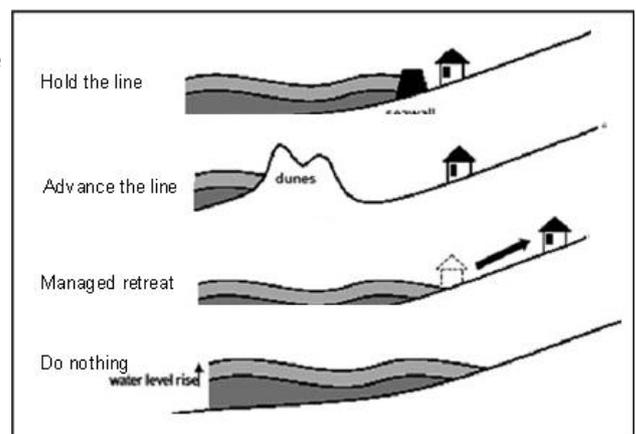
The land was used for farmland until 1924 when it was turned into a golf course. In 1939 the land was taken over by the government and the War Department built anti-aircraft gun placements as well as observation posts. After the war the area was of little use as a golf course and there were plans in 1957 to build a holiday camp on the site. Public opinion was against the plan and in 1961 a public inquiry decided that the land should be bought by the council and made into an area of Regional Public Open Space. The area was also made a SSSI (Site of Special Scientific Interest) due to their geology. They are popular with fossil hunters as they are rich in fossils that are up to 55 million years old, such as pyritised wood, sharks' teeth and shells.

The coastline is divided up into a number of management units and for each unit a 'Shoreline Management Plan' is produced. For each unit anything which is of economic or environmental value is identified and its level of risk from erosion or flooding by the sea is investigated. A proposed defence plan is then produced. This must take into account the following:-

- The impacts any defences would have on other areas (e.g. affecting longshore drift);
- The impact any defences would have on habitats and the environment;
- The costs and benefits - where the cost of the scheme is greater than the benefits it is protecting, the plan will not be allowed to go ahead.

A set of rules has been set up by DEFRA (Department for the Environment, Food and Rural Affairs). There are 4 options for managing coasts:-

1. Hold the line:- the coastline is held at its present place by building or maintaining defences;
2. Advance the line:- build new defences to build up the coast into the sea;
3. Managed retreat:- allow the coastline to retreat by not maintaining defences which already exist;
4. Do nothing:- take no action including the maintenance or removal of defences.



### Cost of defences

The actual cost of sea defences will depend on the circumstances at each individual location. However typical costs are:-

Seawalls -	£5,000 per metre	Timber revetment -	£1,500 per metre
Rock armour -	£1,000 to £3,000 per metre	Timber groynes -	£100,000 per groyne
Rock groynes -	£125,000	beach nourishment -	£10+ per cubic metre
Offshore bars (reefs) -	£1 million - £2 million		

There has been a long history of erosion and coastal management in the area.

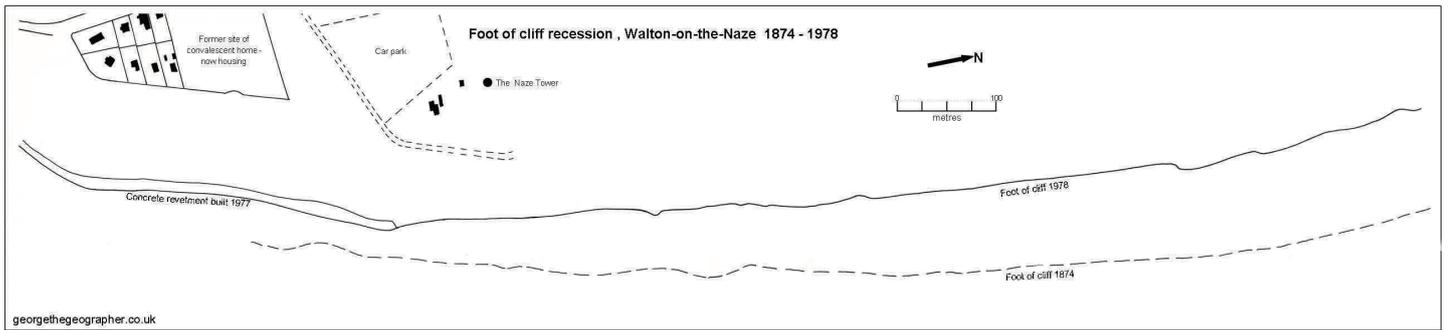
17th century	Groynes were constructed around the Naze area to protect Harwich because it was an important naval base.
July 1798	The medieval church of Walton-le-Soken (a village east of Walton-on-the-Naze) disappeared into the sea.
1860	Groynes and breakwaters built to try and trap beach material. Tower breakwater built.
Up to W.W.II	Regular maintenance of defences carried out, but defences were not effective against erosion.
1953	Heavy storms and floods caused severe damage to the remaining defences.
1972	Tower Breakwater in state of ruin and collapsing.
1977	Large defence work constructed south of the Naze Tower. Cliffs were regarded to a stable angle. A sea wall was built to protect the cliff foot. Drainage was added to remove water from the cliff. Concrete footpaths and steps built. Groynes and a new Tower Breakwater were added.
1977 - 1980	A scheme costing about £1 million to protect the cliffs north of the Tower was approved by the council. This was opposed by the Nature Conservancy Council as it would stop erosion of the fossil beds. A new scheme which protected the cliffs but allowed access to the fossil beds was proposed. This was rejected by the government as was another 'minimum' scheme costing £320,000.
1998	300 tonnes of granite rock armour was placed at the northern end of the defence scheme. Cost £167,000.
1999	The beach at the northern end was built up with sand and gravel dredged from Harwich harbour.
2011	16,000 tonnes of granite rock armour placed at the foot of the cliff nearest to the Tower to construct Crag Walk. The 110 metres of rock armour protects the base of the cliff but also allows people to walk on it even when the tide is in. Information boards have been placed at points along it. Cost £1.2 million.

<b>Coastal Management Policy</b>				
	Now - 2025	2025 - 2055	2055 - 2105	
Naze cliffs north (unprotected)	No active intervention	No active intervention	No active intervention	Shoreline allowed to develop naturally
Naze cliffs south (Crag Walk)	Managed retreat	Managed retreat	Managed retreat	Erosion will be slowed and managed
Naze cliffs (protected)	Hold the line	Hold the line	Hold the line	The current line will be held

Essex and South Suffolk Shoreline Management Plan 2 October 2010

# Rates of erosion

Information about the rates of erosion gives varying rates.



Dates	Kilometres lost	Metres per year
1300 - 1594	4.8	16
1594 - 1777	0.8	4
1777 - 1950	0.6	3
1950 - 2000	0.1	2

The 1777 map of Essex showed the Tower to be half a mile inland.

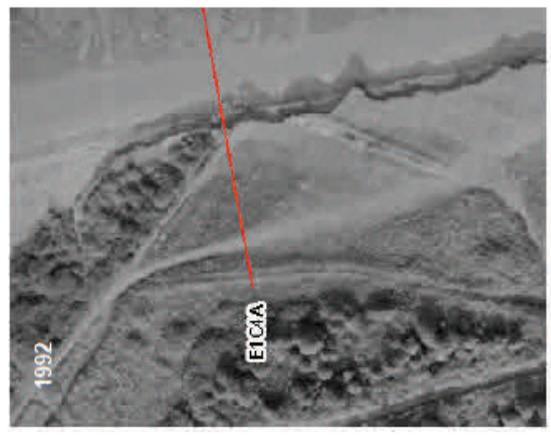
Between 1881 and 1950, the rate of erosion slowed. This was probably due to 30 wooden groynes being maintained along the stretch of coast by the owners.

Naze Protection Society—Erosion of the Naze 2

Date	South of Tower <b>before</b> protection scheme				North of Tower (unprotected)			
	Top of cliff		Foot of cliff		Top of cliff		Foot of cliff	
	Total (m)	Average (m/year)	Total (m)	Average (m/year)	Total (m)	Average (m/year)	Total (m)	Average (m/year)
1874 - 1897	12.06	0.52	Little movement		12.30	0.53	14.08	0.61
1897 - 1923	15.43	0.59	33.14	1.27	26.45	1.02	29.99	1.15
1923 - 1973	28.48	0.57	27.80	0.56	28.96	0.58	32.02	0.64
1973 - 1978	10.40	2.08	7.6	1.52	12.42	2.48	13.34	2.67
There has been no significant movement south of the Tower since the protection scheme has been								

Based on information shown on Ordnance Survey maps

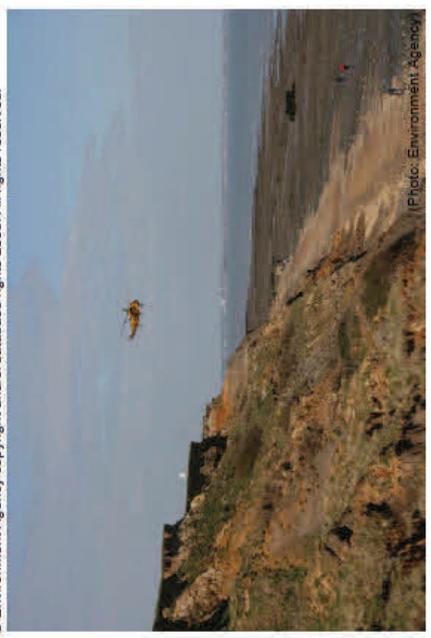
North of the Tower where cliffs are lower (left)  
 Data shows a strong erosion trend. 4.5 metres per year  
 Unprotected cliffs close to the Tower (below)  
 Around 23 metres was lost. Around 1.6 metres per year  
 (Environment Agency data)



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(Photo: Environment Agency)  
 Figure 7 – a) Cliff slumping at the Naze. At E1C5A the beach has retreated by c15m in the period 1992 – 2006. b) Photograph of cliff slumping just south of profile location (2008).



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The information below shows the costs and benefits of different types of management near the Naze Tower. The 'Pathfinder Project' includes Crag Walk.

PV = potential value

<b>Table 4-3 Crag Walk Project</b>			
		<b>Do Nothing</b>	<b>Pathfinder Project</b>
<b>Description</b>		The Naze Tower, Car Park and Cafe will 'fail' after around 15 years, 20 years and 7 years respectively.	The project involves intervention to slow (and eventually stop) the rate of coastal erosion, thus protecting the assets at risk.
<b>Costs</b>	<b>PV Societal Costs</b>	-	£1,307,700 <b>(A)</b>
	<b>PV Public Sector Costs</b>	-	£1,307,700 <b>(B)</b>
<b>Assets</b>	<b>No. of Properties Affected</b> <i>(source: Pathfinder)</i>	3 (existing) – cafe, car park and Naze Tower expected to fail after 7, 20 and 15 years respectively	3 (existing) – protected for 50 years – the projected life of new defence <b>(C)</b>
<b>Monetary Benefits</b>	<b>Estimated Property Benefits</b> (see technical note in Appendices)	Naze Tower - £181,400; Cafe – £21,400; Car Park – £102,000; Total – £304,800 <b>(D)</b>	Naze Tower - £369,400; Cafe – £82,100 Car Park – £168,300; Total – £619,800 <b>(E)</b>

<b>Other Impacts</b> (colour coding denotes largely positive, neutral or negative impact)	<b>PV Blight Effects</b>	Given the nature of the assets at risk, and their likely continued use up to 'fail' blight is not considered to be an issue.	Blight is not considered to be an issue under the 'do nothing' so the additional impact of the project will be limited in this respect.
	<b>Impact on Wider Cohesion / Regeneration</b>	It is likely that the 'do nothing' would have a detrimental impact on the local economy due to the loss of tourism assets and facilities (and in turn a decline in visitor numbers). In turn this would likely to be detrimental to regeneration efforts.	In ensuring that the existing tourism facilities are protected and improved (e.g. through the education boards), it is anticipated that future tourism levels will be increased. This will lead to local economic benefits, and feed into wider regeneration objectives.
	<b>Impact on Local Amenities</b>	The 'do nothing' would result in the loss of the physical tourism assets. In the longer term, a decline in tourism would potentially impact upon the demand for local amenities.	The project would sustain and potentially enhance visitor numbers, maintaining (and enhancing) demand for local amenities.
<b>Overall Comments</b>		The 'do nothing' scenario would result in a number of negative impacts which it is not possible to quantify.	The project achieves a low net cost benefit ratio of 0.2:1. This reflects the relatively high cost of intervention and the design life of the intervention of 50 years (the cost benefit would be stronger if the lasted for a longer time period). However, the overall cost benefit of the project is likely to be stronger, given the presence of a number of benefits which it is not possible to quantify - including the likely positive impacts on tourism numbers.