

Beach, Groynes and Sea Wall At Holland-on-Sea

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Introduction

Currently TDC is spending £1-2 million a year on coastal defence almost all of this is being spent repairing the sea wall between Holland Haven and Clacton pier.

But these repairs do nothing about the groynes and beach which means sea continues to erode sea wall.

A much smaller amount, £13000/year, was spent on repairing the groynes but these repairs were ineffective.

Adequate groynes are essential to maintain and defend a sea wall as they allow a bank of dry sand to build up in front of the wall which protects the wall from erosion by the sea.

As there are no adequate groynes at Holland £1-2 million/year will have to be spent on sea wall for ever.

The alternative is to allow Holland Clacton to fall into the sea.

There is clear difference in the state of beach at Walton, Holland and Clacton south of the pier as the following pictures show. All these pictures were taken between 8:30 and 9:30am on 9 May 2012 when there was a particularly low tide.



Figure 1: Walton Beach



Figure 2: South Clacton Pier



Figure 3: Holland Haven



Figure 4: Flags Cafe



Figure 5: Near Groyne 35



Figure 6: On Beach Near Groyne 35

There is also a clear difference in the state of the groynes.



Figure 7: Holland Haven Decades Ago



Figure 8: Holland Haven Now

Here are 2 pictures of the beach at Holland Haven near Pat's Cafe and the sailing club.

In the 60's or 70's there was clearly a much better beach. The groynes were almost entirely buried in sand.

Now the groynes are in terrible state after years of neglect and the level of sand has dropped dramatically.

Bad as things are at Holland Haven things are even worse near Flags Cafe.

Three things which affect how well groynes work are

- how long they are
- how far apart they are
- how high they are

I measured the length and spacing of groynes by pacing them.

The Length and Spacing of Groynes in my paces	Length	Length short	Spacing
Naze north of cafe	80		80
Naze south of cafe	116		109
Walton opposite Standley road	96		112 143
Walton south of Albion groyne	95		109
Frinton opposite Cliff Way	122	67	59
Frinton Whalings	120	58	58
EA controlled beach between Frinton and Walton	Effectively no breakwaters		
Holland Haven	55	31	67
Gunfleet Sailing Club	44		78

So groynes at Holland are at less than $\frac{1}{2}$ length of those at Frinton and they're further apart.

Worse the horizontal planks are bolted to the uprights at Frinton and Walton, at Holland and Clacton they are slotted into groves in the uprights. This will be a much weaker way of retaining the planks. The sea will wiggle the planks which will widen the groves. Eventually the planks will simply fall out of the groves.



Figure 9: Walton Planks Bolted On Figure 10: Holland Planks In Groves

I don't know why different methods of attaching the horizontal planks are used at Frinton/Walton

and Holland/Clacton, probably it dates back to when there were separate Urban District Councils for Frinton/Walton and Holland/Clacton.

For Frinton/Walton the numbering of the groynes starts at the southern end of the whalings and works north to the Naze. For Holland/Clacton the numbering system starts at Holland and works south.

Whatever the historical reason there is no justification for continuing with the failed system at Holland, especially as the two Urban District Councils have been absorbed into TDC.

At Holland there are some boards which have been bolted onto the top of the uprights and are still there.

Despite the poor state of the groynes at Holland where there are horizontal planks they trap sand and shingle.



Figure 11: Holland Top Plank Bolted



Figure 12: Holland Groynes Fill a



Figure 13: Holland Groynes Fill b



Figure 14: Holland Groynes Fill c

But only if the horizontal planks extend down to at least the level of the sand.



Figure 15: Missing Boards Cause Erosion c



Figure 16: Missing Boards Cause Erosion d

There are some groynes with missing horizontal planks at Frinton and Walton and this causes erosion.



Figure 17: Missing Boards Cause Erosion a



Figure 18: Missing Boards Cause Erosion b



Figure 19: Missing Boards Cause Erosion c



Figure 20: Missing Boards Cause Erosion d

Earlier this year I made a FOI request to Tendring District Council to find out how much money had been spent on repairing wooden groynes since 2000.

These are the results that I was sent.

	Holland on Sea	Walton on Naze	Frinton on Sea
2004-05	£4067.40	£870.00	£1535.71
2005-06	£10253.26	£2362.00	£1048.84
2006-07	£5200.84	£1547.91	£1147.00
2007-08	£3220.27	£4076.74	£1128.37
2008-09	£4651.59	£8427.32	£1328.70
2009-10	£12249.02	£10051.88	£2434.19
2010-11		£3566.78	£759.84
2011-12		£13554.70	£1339.64
Total	£39642.38	£44457.33	£10722.29

A few fairly obvious points

- Four times as much was spent at Holland and Walton than at Frinton.
- How come there is such a big difference in the state of groynes at Holland compared to Walton and Frinton?
- Given the obvious state of disrepair of the groynes at Holland, how come no money at all has been spent repairing them in the last 2 years?
- Does anyone care if there is no beach at Holland, or if the sea wall is washed away?

I made a further FOI request to identify which groynes the £12249.02 had been spent on repairing in 2009-10 at Holland. It turned out to be groynes numbered

2, 6A, 7, 7A, 8, 8A, 9, 9A and 11

Figures 3 and 8 show the effect of these 'repairs'.

When I visited the beach earlier this year people near Pat's Cafe remember the boards being put in.

And they remember the sea washing them away on the first high tide, presumably because the groves had been widened so much they no longer function.

£12249.02 well spent then.

The money spent on repairing groynes is dwarfed by the money spent on repairing sea wall.

On 27 February 2011 Matt Cooper made a FOI request to Tendring District Council asking

- The total money invested into coastal defenses in the past 10 years
- The major coastal defense schemes initiated in the past 10 years

You can read the full exchange relating to this FOI request on www.whatdotheyknow.com/request/cost_of_coastal_defences.

The total cost over the last 10 years was £9,341,237.89.

In the following table I have combined details of projects from www.tendringdc.gov.uk/TendringDC/Environment/Coast+Protection/CoastProtectionPhotographLibrary.htm with costs on www.clactonbeachhut.org.uk/.

Location	Start	End	Length Meters	Cost Millions	Cost/Meter
Queensway Brighton Road					
York Road					
Queensway emergency	Feb-07	Aug-07			
Hazlemere Road	Nov-08	Jun-09	150	£1.2	£8000
York Road	Sep-09	May-10	68		
Holland Haven	Nov-10	Jun-11	80	£1.1	£13750
Cliff Road	Nov-11	Jun-12	230	£2.2	£9565
Gas House Quay, Harwich	Nov-11	Jun-12	230	£2.2	£9565
Crag Walk, Walton	Jan-11	Apr-11	110	£1.2	£10909
Cliff Parade, Walton	Oct-08	Oct-08	130		

Obviously the table is not complete yet and it may contain inaccuracies. If you have any information to update the table please jeremy@jeremyshiers.com.

But the information that is there shows

- Repairing the sea wall costs about £10,000 a meter!!
- The repairs don't last long as some locations have been repaired more than once, within a few years.

When the sea is against the sea wall at all states of the tide then it is eroding the wall 24 hours a day.

When the sea is only against the sea wall near high tide the amount of sea erosion will be reduced. If the sea is against the sea wall from 1 hour before high water to 1 hour after high

water, then the time the sea is eroding the wall will be reduced TO $\frac{1}{6}$ of the time compared to when it is touching the sea wall all the time.

When there is a stretch of dry sand in front of the sea wall, as there is in Jaywick, the sea never (or only rarely) touches the sea wall. Such a sand buffer is essential to protect the wall, without one there will be a continuing need for repairs.

The cost of the sea defences built at Jaywick in 1986 is given here as £9.6 million. Using Google it seems about 3300 meters were defended. A cost of about £2900/meter. Admittedly this is a 1986 price but it looks extremely cheap.

The alternative is to keep on patching up at a coast of a few million pounds a year **FOR EVER**.

And this leaves a risk that the sea wall and cliff may collapse.

Richard Steward of the Blyth Estuary Group is a retired electronics engineer and businessman. He is also a keen sailor and since his retirement he has taken a keen interest in coastal process. One of the things which triggered his interest was Environment Agencies proposals for river Blyth.

Richard has documented what he has learned in Blyth Estuary Group Critique of DEFRA and EA Coastal Policy.

I urge you to read this document. Pages 15 to 17 specifically focus on groynes.

Richards view is:

The Seawick groynes are working well and these are 53m length 14m wide at the base and have a spacing of 78m. If they prove not to be long enough they can always be extended later (at greater cost of course).

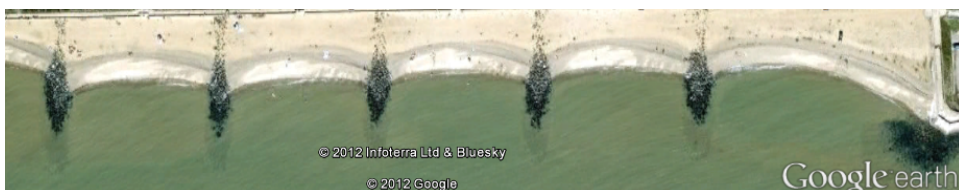


Figure 21: Rock Groynes Seawick

Clacton Pier to Holland Haven appears to be about 5.6Km so 72 groynes seem to be the requirement and at £0.2million each this would cost about £14million.

There are some alternative schemes

- Wave Walkers are good for protecting sea wall but do nothing to produce a beach.
- Fish tail groynes good but cost 3 times as much as of vertical groynes

It is important to know how fast the sea can fill them so Richard suggests a trial with three repaired existing groynes be conducted over 1 year.

We know the existing groynes were shorter still but were full of sand in the 60s. Presumably

- the sand could not have been so high when the groynes were built
- the groynes filled up with sand without recharge

So there is reason to believe new groynes would fill without recharge.

Although there is a good beach at Frinton Richard feels the groynes were not designed correctly. In his opinion all groynes should rise to MHWS plus at least 1 meter no closer than 5 meter from the seawall and then run level, or just a gentle slope, to the seawall. And then there will be a bank of dry sand in front of the sea wall.

Note groyne height was mentioned as a factor effecting groyne performance on page 4.

There is such a bank of dry sand to the north of groyne 84 at Eastcliff in Walton.



Figure 22: Higher Sand North Groyne 84

And it's been there so long grass has grown.



Figure 23: Grass Growing By Groyne 84

Environment Agency is one reason why groynes have not been repaired, they have not approved funding. Strange they approved funding for new groynes at Felixstowe.

This EA Report said £58 million would be required for offshore breakwaters and beach recharge.

But there are much cheaper options and beach recharge may not even be necessary.

It seems EA has habit of producing costs out of thin air which a very high and then using these 'estimates' as justification for not proceeding.

The alternative is to let Holland and Clacton fall into the sea.

Page 9 of 22 March issue of Clacton and Frinton Gazette quotes EA draft strategy as saying.

In this case the future issue is one of having to adapt and accept that Clacton will not be there in the future.

Sounds like they've made up their mind already.

The Blyth Estuary Groups experience of EA was EA decided the 400 year old clay river walls were *unsustainable* and would fail within 20 years. Furthermore it would be uneconomic to repair these walls. When pressed for an estimate of the cost of repairing the walls EA essentially replied there was no estimate as they knew the walls were unsustainable.

EA's plan is to relocate protected habitats and 'manage realign' coastal sites which they believe are uneconomic (even though they can not justify their case). Protected habitat sites on the river Blyth may seem to have nothing to do with beaches at Holland. It is because EA are removing money from coastal defence budget for habitat relocation there is no money to repair groynes at Holland.

My experience of dealing with EA is

- They make claims without any evidence to justify these claims. For example Charles Beardall wrote to Douglas Carswell claiming 236 ha of saltmarsh in Essex since 1992. When I asked if a saltmarsh survey had been carried out in 1992, Charles replied there had been no survey, EA had 'calculated' the figure.
- I have shown the spreadsheet used to calculate the graphs of sea level rise in Figure 2.6 in Essex and South Suffolk SMP is wrong and the rates shown are at least 2 times higher than they actually are. See my blog for details. Even worse there was no one in Anglian region of EA who understood this calculation even though it is only O level maths. EA have noted the figure is wrong but will not change the document yet as it has been 'agreed'.
- EA claim to have 'scientific data'. In reality it is often very crude and dramatically revised later. For example EA claimed saltmarsh in Hamford Water was being lost at the rate of 14ha/year. A later survey found it had actually been growing back at a rate of 0.3ha/year.
- EA's interventions don't always work and sometimes have serious consequences. Following intervention at Stone Point to prevent erosion the Walton Channel is silting up at Stone Point and there is a risk the channel will actually become blocked which will put an end to the marina and boat yards. It will also render pointless flooding of part of Devereux farm in an effort to create salt marsh. More money wasted which could have been used for groynes at Holland.