

Hunstanton Cliffs Baseline Report – Erosion Risk Rating Guidance

The 'Hunstanton Cliffs: Baseline Terrestrial LiDAR Survey (2020)' report includes an 'erosion risk rating' value for the 4 properties identified as being at risk in the Hunstanton Coastal Management Plan (HCMP) over the next 100 years. These



properties (3 Shelters and the Lighthouse) are shown on Figure 1.

Figure 1. Position of 4 properties identified as being at risk of erosion over the next 100 years (See HCMP Interim Report ~ Figure 7:5)

The purpose of this document is to explain how the erosion risk rating is calculated and what the erosion risk rating means in further detail.

How the erosion risk rating is calculated

The erosion risk rating equation considers the amount of horizontal change (regression), loss events (block falls) in front of the properties and the properties' closest cliff edge position. All this information comes from the baseline report data analysis (terrestrial LiDAR models).

These values (see table below) are placed into the 'erosion risk rating equation' (see report), which will then calculate an erosion risk rating (or R Value) for the 4 properties.

There is no top end value which the erosion risk rating can calculate for the 4 properties. Essentially, the higher the amount of horizontal change (regression) and loss in front of the property (block falls) and the lower the closest cliff edge position,

the higher the threat of coastal erosion will be. This will result in a higher erosion risk rating for a given property, reflecting its increased risk of coastal erosion.

The final erosion risk ratings from the report are shown in Table 1.

Table 1. Erosion Risk Rating data and values (See Baseline Report Table 4)

Property	Horizontal Change (metres)	Loss at Property (metres)	Closest Cliff Edge (metres)	Erosion Risk Rating (R Value)
Lighthouse	2	3	21	2.9
Shelter 1	1	1	22	0.5
Shelter 2	1	1	26	0.4
Shelter 3	3	2	16	3.8

What do the Erosion Risk Ratings (R Values) mean?

Shelter 3 for example, was calculated to have the highest erosion risk rating of the 4 properties, at 3.8. It received this rating due to its relatively higher horizontal change and loss at property values and lower closest cliff edge position (proximity to cliff edge) value, compared with the other properties.

The below examples will try to place Shelter 3's R Value of 3.8 into a wider context of what the erosion risk rating can mean for a given property.

For example, if a property had experienced horizontal change and loss at property of higher values than Shelter 3 (say 5 metres and 5 metres respectively), and also a lower closest cliff edge value (say the property is measured as being 10 metres from the nearest cliff edge), then the erosion risk rating would be calculated as 25.

This R Value is a considerable increase to 3.8 which is currently seen for Shelter 3, and is a result of a higher amount of horizontal change (regression), loss at the property (block falls) and the property being closer to the cliff edge, increasing its overall risk from coastal erosion.

Another example - if a property's values of horizontal change and loss at property were to increase further (say 10 metres and 10 metres respectively) and an even lower closest cliff edge position value was recorded (say the property is measured as being 1 metre from the nearest cliff edge), then the erosion risk rating would be calculated as 1000.

This R value is a considerable increase on both 3.8 and 25. This R Value of 1000 would represent a worst-case scenario, as there have been very high amounts of horizontal change (regression) and loss at property (block falls), and the property is very close to the nearest cliff edge (1 metre away). Therefore, the value of 1000 reflects a very high threat of coastal erosion to the property.