

LOCAL SEA DEFENCES

WOLFERTON CREEK TO SOUTH HUNSTANTON

WINTER 2023 UPDATE

Following publication of the previous Local Sea Defences newsletter update in the Summer, an additional Winter edition of the newsletter is being provided to update you on recent developments.

UNIT C: SOUTH HUNSTANTON TO WOLFERTON CREEK

BACKGROUND

A sand and shingle ridge running parallel to the Heacham and Snettisham coastline forms the primary mean of reducing tidal flood risk to people, houses and caravans alongside protection during storms from wave spray and high winds. The natural nature of the shingle ridge means it is mobile and will seek to spread landward over time. This means the height and shape of the ridge will also change in response to weather events, coastal processes and human intervention.

The Environment Agency is responsible for management of the shingle ridge. The current management approach involves annual beach recycling and intermittent beach recharge. As detailed in previous newsletters, management of the shingle ridge has been funded since 2015 by central government 'Flood and Coastal Erosion Risk Management Grant in Aid' and members of a funding group consisting of the East Wash Coastal Management Community Interest Company, Anglian Water and the Borough Council (including beach huts).



CURRENT CHALLENGES

The Environment Agency have identified two discrete issues which have arisen with the current management approach of the shingle ridge.

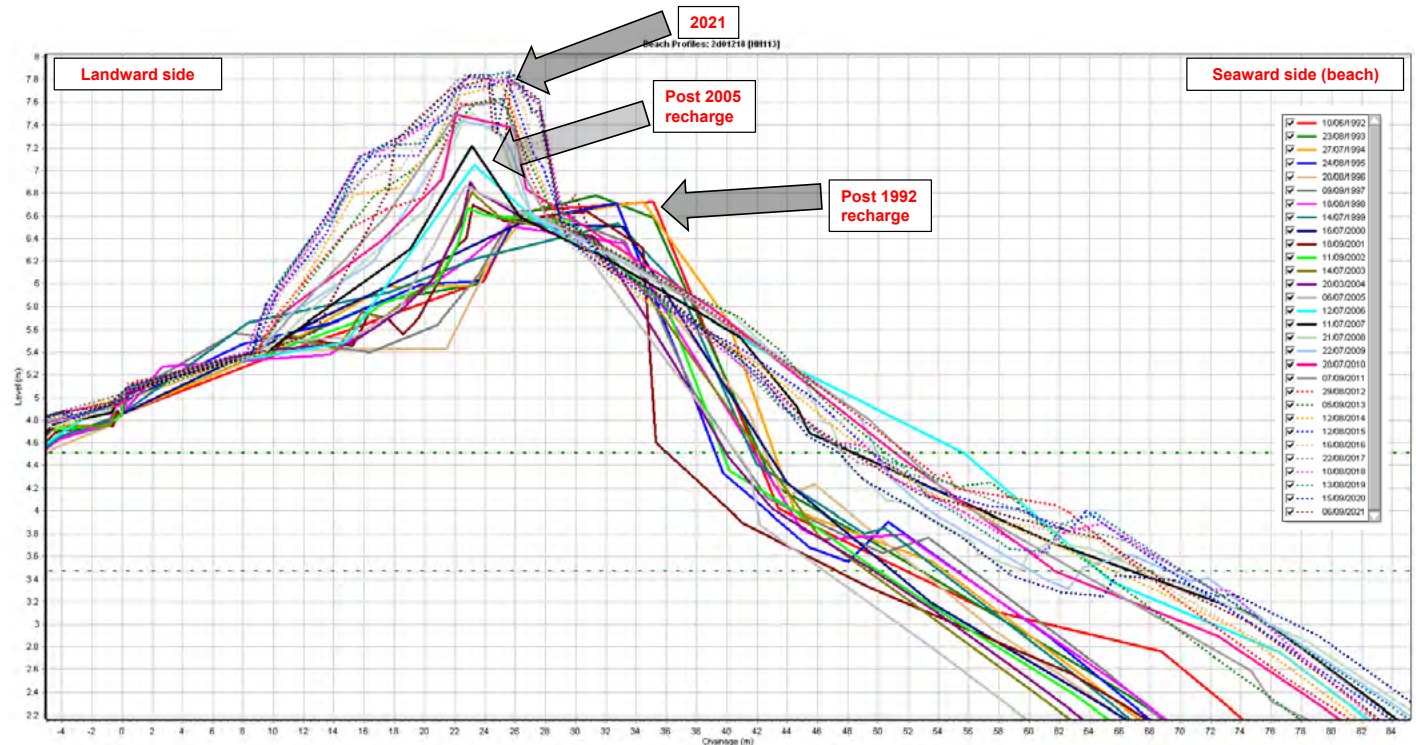
Challenge 1: Roll back of the shingle ridge

Monitoring data of the shingle ridge undertaken by the Environment Agency has identified that since 1992 the shingle ridge has been moving landward and growing in height. In some locations, the crest (top) of the shingle ridge is now approximately 8-10 meters further back and approximately 1.5 metres higher than it was in 1992.

The graph below shows monitoring data of one section of the shingle ridge undertaken on an annual basis by the Environment Agency between 1992 to 2021. The coloured lines show the profile of the shingle ridge taken

each year and depict how the shingle ridge has changed over time. The right-hand side of the graph represents the seaward side of the ridge (the beach) while the left-hand side represents the landward side of the ridge.

The bottom arrow shows the profile of the ridge following recharge in 1991-92. The middle and top arrows show the profile of the ridge in 2005 and 2021 and show that this section of ridge has moved landwards by approximately 8-10 metres and grown in height by approximately 1.5 metres.



As the shingle ridge has increased in size and moved landwards several properties that are already close to the ridge have excavated into the side and top of the ridge. Although the ridge appears solid and immovable, it can be fragile and small alterations can have large impacts. Removal of material and

vegetation from the ridge increases the chance of the ridge being overtopped and breached. A single breach in the shingle ridge will place a large proportion of the area and properties behind the ridge at risk of flooding, not just the property directly behind where the excavation has taken place.

Challenge 2: Beach recharge

Through planning for the programmed mini-beach recharge, the Environment Agency has reluctantly concluded a beach recharge is undeliverable due to both financial and technical constraints. The Environment Agency has struggled to attract contractors to provide a quotation to undertake a mini-beach recharge because of these challenges.

Encouragingly, the monitoring data of the area indicates a beach recharge scheme is not required at present due to a sufficient amount of material remaining available for beach recycling. Despite this, the Environment Agency does not expect the challenges to the project to change over time.

WHAT THE ENVIRONMENT AGENCY ARE DOING

The combination of these issues means the Environment Agency is taking steps to re-evaluate the management approach for ridge frontage in the future.

Shoreline Management Plans (SMPs) set the strategy for managing the risk of coastal flooding over the next 100-years. The Wash East Coastal Management Strategy (WECMS) supports the SMP and provided guidance on how the ridge could be managed. The strategy highlighted that the management approach of the area may need to be reviewed if certain triggers identified in the WECMS are met.

Given the challenging situation identified on this frontage, the Environment Agency is starting to investigate. The steps we are currently taking include:

- Commencing a technical review by renowned coastal engineers to assess whether the trigger levels identified in the WECMS have been reached and whether a full strategic review of the WECMS is required. This technical review is anticipated to be completed in Spring 2024.
- Continuing to undertake annual beach recycling for as long as technically, financially and environmentally feasible.
- Increasing engagement and enforcement presence with properties and caravans directly behind the shingle ridge in Heacham and Snettisham.
- Undertaking a leaflet drop (Living with the Shingle Ridge) to all properties and caravans directly behind the shingle ridge in Heacham and Snettisham.
- Attending local stakeholder groups.

FREQUENTLY ASKED QUESTIONS

What is the shingle ridge and what does it do?

The shingle ridge is a raised line of shingle and sand that stretches from Snettisham to Heacham, the composition of which changes along its length. The ridge forms the primary means of reducing the risk of tidal flooding to the people, houses, businesses and caravans along North Beach, South Beach and Jubilee Road as well as Snettisham Beach. It also offers protection during storms from wave spray and high winds.

What is the Environment Agency going to do about the changes to the ridge?

The ridge changing and moving is completely natural and is a result of the ridge adapting to changes in coastal processes and weather conditions. Unfortunately, in Heacham and Snettisham, the consequence of this natural evolution of the ridge is that the beach side properties are experiencing an increase in the amount of sand on their property.

The Environment Agency recognises the challenge between the properties and the ridge wanting to occupy the same footprint and we are taking steps to assess the long-term implications of this by employing renowned coastal engineers to assist us with addressing the challenges. In the meantime, it is important that property owners refrain from digging into the ridge at all and that they approach the Environment Agency if

they wish to undertake works within 16m of the ridge. This will help preserve the integrity of the ridge and its ability to perform as a flood risk management asset.

What is the Environment Agency doing to prevent further damage to the ridge?

We are engaging and advising residents so that they understand the significance of the ridge and why they should not undertake any further excavation activity. If necessary, we will enforce against property owners that damage the ridge.

Activity within 16 metres of the ridge requires a flood risk activity permit and this will not be granted if the Environment Agency believes the work could cause damage to the ridge. It is a legal offence to carry out works on any flood risk management asset without permission. This includes the removal of material, installation of fencing or construction of temporary structures. Our recent engagement activity in the area has ensured that property owners are aware of this.

Any damage to the sea defences can potentially increase the risk of flooding to the whole community. For more information on how to apply for a Flood Risk Activity Permit please check: gov.uk/guidance/flood-risk-activities-environmental-permits

How does the Environment Agency currently manage the ridge?

The Environment Agency manages the ridge in three ways:

1. Annual beach recycling. Every year the Environment Agency redistributes material along the ridge and beach to maintain a consistent shape and height of the ridge.
2. Intermittent beach recharge. When material is lost from the ridge and beach, we bring in more material from elsewhere and use this to reinstate the desired shape and height of the ridge and beach. Beach recharges were last undertaken in 1991 and 2005.
3. Regular monitoring of the beach, ridge and foreshore. At least twice a year we take transects of the profile of the ridge. This allows us to assess how the ridge is changing and how much material is available on the beach and Snettisham Scalp. In addition to this we also collect aerial photography and Light Detection and Ranging (LiDAR) data to further aid our analysis. All this information is vital as it allows us to assess which areas of the ridge may require more work during the annual beach recycling and allow us to identify longer term trends that may initiate the need for more significant works. In addition to this, we also undertake environmental monitoring every 5 years to ensure that our recycling project is not having a detrimental impact on the numerous protected plants, animals and habitats within the area.

What is the difference between beach recycling and beach recharge?

Beach recycling is the relocation of beach material that already exists within the area. For Heacham and Snettisham, recycling works are undertaken annually and material is collected from Snettisham Scalp and brought further north to fill in low and narrow spots on the ridge. We also use bulldozers to reprofile the beach and move material to where it is needed.

A beach recharge is where material is brought in from elsewhere to replace that which has been taken out to sea through wave action. Once the material is taken out to sea then it is no longer available for the beach recycling and therefore needs to be replaced for the annual beach recycling to continue. The beach recharge is undertaken very infrequently and only in response to sand and shingle being lost from the beach and ridge.

Will you continue with the beach recycling despite the beach recharge no longer going ahead?

The annual beach recycling will continue to take place for as long as it is feasible and sustainable to do so.

Our latest data shows that beach levels have been stable over recent years and we are confident there is enough beach material already on the beach for the recycling to continue in the near future.

Why is the management approach in the area being reviewed?

The planning phase of the beach recharge project has highlighted financial, technical and environmental challenges which make the project undeliverable.

Data also indicates that the natural ridge is growing landward towards the properties situated behind it. As the shingle ridge has increased in size and moved landwards, some property owners are excavating the side and top of the ridge and this is reducing the integrity of the ridge and the level of flood protection it provides.

The combination of these two things has resulted in the Environment Agency commencing a review of the management approach in the area. Whilst this review is undertaken we will continue to carry out annual beach recycling. We are confident there is enough beach material already on the beach for the recycling to continue in the near future without the need for a recharge. We are also increasing our engagement and enforcement activity within the area to ensure that residents understand the importance of the ridge and do no further damage.

What impact does this have on planning policy between Hunstanton and Snettisham?

The Borough Council is the statutory planning authority for the area. The Environment Agency are required to be consulted on various planning applications but both the Borough Council and the Environment Agency have recently agreed that the Environment Agency will be consulted on all planning applications where the property is located directly behind the ridge.

What is the flood risk of the area?

The sea defences at Heacham have been developed since the existing natural defence failed catastrophically during the storm surge of 1953, with the loss of 65 lives in the immediate area.

A secondary, landward flood embankment was constructed after 1953. Following the construction of this secondary flood defence, the area between the primary and secondary defences fills like a bowl during a tidal flood event and the properties/caravans in this area are therefore considered to be at elevated flood risk. For this reason, the Environment Agency and Borough Council provide an enhanced flood warning service (Precautionary Evacuation Notice) which has been activated five times in the last 25 years.

Breaching of the sea defences occurred again in 1978 and major defence works (construction of hard defences and beach recharge) were undertaken in 1990/91 and again in 2005/6.

The area was affected by the East Coast storm surge on 5th December 2013 including widespread damage to the shingle ridge and dunes including two breaches.

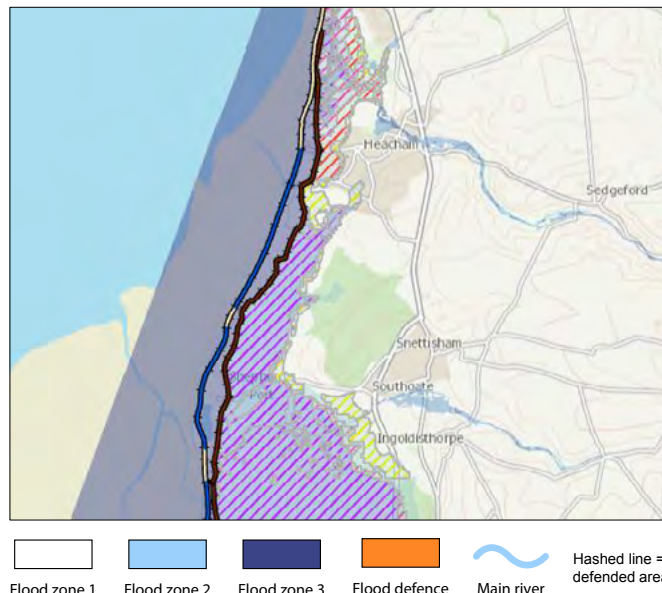
Can we stop the movement of the ridge?

The shingle ridge is a natural feature that changes in response to coastal processes, weather and human intervention. One of the things that can help the ridge stabilise is the plants. These plants cannot establish if the ridge is excavated on a regular basis. This vegetated shingle is also an important habitat for wildlife and one of the things that makes this area of The Wash so special.

The Environment Agency's next immediate steps:

You will see a lot more Environment Agency staff in the area monitoring the ridge and activities happening close to it. If excavations into the ridge continue then the Environment Agency may choose to use our enforcement powers to prevent this.

We are undertaking an initial assessment to establish whether a trigger has been reached for a review of the management approach. Once this assessment report is complete (due in Spring 2024), we will then look to review the Wash East Coastal Management Strategy.



What will the Trigger Level Assessment, due to be published in 2024, tell us?

The Wash East Coastal Management Strategy identified triggers that would initiate a change in management approach. Examples of these triggers include the impact on the environment and the financial investment required to maintain the flood risk management assets.

A beach recharge was due to be undertaken in 2025 but the Environment Agency, despite significant efforts, have struggled to find a delivery method or the significant investment required to undertake these works. This has caused the Environment Agency to question whether one or more triggers have been reached.

Jacobs will be undertaking the assessment of whether these triggers have been reached and whether a change in management approach should be considered. If this trigger level assessment does conclude that a change in management approach should be considered, then a review of the Wash East Coastal Management Strategy will be undertaken.

What impact could the Wash Barrier have?

The Environment Agency is aware of Centre Port's high-level proposal for a barrier across The Wash Estuary. We are one of a number of organisations seeking clarification on a range of significant points regarding Centre Port to fully understand the potential effect the port would have on the environment and flood risk.

At present no evidence has been presented to the Environment Agency to enable us to appraise the proposal effectively. Until a full and conclusive feasibility study is completed and provided to us for review, we can provide no further response to this proposal.



UNIT B: HUNSTANTON TOWN

The Borough Council continue to undertake routine repairs and maintenance to the coastal defences in Hunstanton. So far this financial year, The Borough Council have completed just over £175,000 worth of worth of works, including a series of repairs in June and July to the promenade, seawall and slipways and health and safety works to the groynes.

Another series of 47 repairs to the promenade, seawall, rear-wave wall and slipways was undertaken between the 30th October and 30th November 2023. These works cost just over £91,000. Temporary health and safety repairs have also been undertaken to a number of trip hazards identified on the promenade.

Monitoring of the coastal defences will continue throughout the winter storm season.

UPCOMING WORKS

We are drawing up schedules of further detailed investigations which will include the following:

- Ground Penetrating Radar and Falling Weight Deflectometer survey of the promenade. These surveys can assess the internal structure of the promenade for defects such as voids. This was previously undertaken in 2015.
- Trial pits along the base of the seawall to assess the condition of the seawall foundations (seawall toe) which are typically buried and therefore cannot be visually inspected. This was previously undertaken in 1996 and 2012.

Specifications for these works have been completed and we will be going out to tender in due course. Once a contractor is selected we will need to apply for relevant marine and environmental licences before proceeding with the trial pit investigations which will determine when the works can commence in 2024.

UNIT A: HUNSTANTON CLIFFS

An annual terrestrial LiDAR survey of the cliffs was completed in April 2023. This data is now with the British Geological Survey who will be producing a report of outcomes. It is anticipated that a first draft of this report will be received in the winter.