

RIVER DEBEN ASSOCIATION
Minutes of the first meeting of the RDA Saltmarsh Research Group
Held on Tuesday 26 September 2016 at the offices of Barker Gotelee at 2pm

1. Present: Robin Whittle (Chairman), Robert Simper, James Skellorn, Carol Reid, Richard Steward and James Pullen

Apologies: Rob Hughes

Robin thanked James for hosting the meeting at his office and welcomed everyone to the meeting. After a short discussion Robin agreed to be chairman.

2. Notes on Minutes of a special saltmarsh meeting held on 21 January 2014:

a) Falkenham saltmarsh: Carol noted that she was not aware of any update information from Simon Read. The flow of water in the channel close to and parallel to the river wall had been blocked and she understood that this was reducing the erosion of the saltmarsh. Some of the structures placed did not appear to be very effective. Richard passed round a photograph showing the water passing under a pile of sticks/branches that had been placed to block/deflect the flow of water. James noted that he was not expecting a further report until 2017.

b) Dredging/sediment: Robin noted that he had spoken with Karen Thomas earlier that day. She confirmed that she was preparing a paper for the next DEP Steering Group meeting on 14 October. The information that Robin had gathered concerning a 'wish list' of dredging quantities (dated 14/3/2016) would be included in the paper. The quantity of sediment declared in the 'wish list', expressed as an average per year, was about 13,300m³.

c) Proposal for new project: The proposed project of surveying Loder's Cut Island was started in June 2014. This required agreement of the Kyson Fairway committee and the Trinity House. Robin had obtained this.

3. Review of the state of the River Deben saltmarshes: Robert showed a number of slides showing the following:

- Crumbling of the cliff at the Rocks and the reduction and movement of the sandy shore there 1938 – 1960 - 2016.
- Hemley Point (close to Buoy 2a) has receded many metres. It is still very shallow in this area. On the east side of the river opposite to Hemley Point there has been accretion. These changes imply a change in the position of the channel to the west.
- Robert noted that the channels in the saltmarshes close to and parallel to the river wall on the river side were created after the 1953 floods by drag lift cranes and the mud was used to strengthen the existing wall.
- Half a mile up from Ramsholt Quay the saltmarsh is increasing and has been for several years.
- A slide of Woodbridge in 1910 showed that the silting just up river from the Tide-mill had reduced.
- A photograph taken at Kyson's point showed the island to be larger than it is now. Robert noted that the Cut had become deeper and wider. Robin noted that the main channel in Troublesome Reach was quite shallow in places.
- Slides of the saltmarsh opposite the Rocks showed how the edge of the saltmarsh had collapsed in a period of two years, converting the vertical saltmarsh cliff into a muddy sloping face. The first picture showed many shore crab holes where they had tunnelled. These must have weakened the edge helping to cause the collapse.

- In a recent visit to Cornwall Robert had found no sign of crab holes. Richard confirmed that he not seen evidence of crab burrowed saltmarsh mud lagoons other than in Suffolk, Essex and North Kent estuaries.
- The saltmarsh at Hemley has been eroding several feet per year since 2014. This may be because the river channel is moving continuously.
- Slides of the work carried out on the Sutton Shore opposite the Tide-mill in 2009 had caused little change to the state of the saltmarsh on the south side wooden structure.
- A slide of Kirton Creek showed that the remains of a barge left there many decades earlier were still clearly visible indicating that sediment had not increased there. Robert noted that many of the early attempts to encourage the growth of saltmarsh had been unsuccessful. However it was noted that the sediment from Woodbridge Bass Dock placed on the north end of Loder's Cut Island had started to grow *Spartina* without any planting.
- A photo of the river wall near Ramsholt church taken after the 2013 flood showed how overtopping water had started to destroy the landside face of the wall. In this instance the wall had not breached but the valley had flooded. This example emphasizes that if breaching is to be avoided, even if the wall is over-topped, the land side slope should be built up with a shallow gradient and the whole wall surface wall should be planted with a suitable binding grass.
- The last slide showed an aerial shot of the river entrance. Robert believed that the edge of the cricket pitch in Bawdsey Manor grounds was once the shoreline of the entrance.

4. Loder's Cut Island Survey: Robin described the survey work taking place at Loder's Cut Island. Twelve posts, 2 metres long, had been pushed into the marsh leaving 1 metre showing. The survey started in May 2014. At that time Carol prepared a short report on the existing plant life including a quadrat analysis at each post. Measurements have been taken every six months using a tape measure. These include the height of post above the saltmarsh level and four orthogonal plan measurements to the edge of the saltmarsh. Robin showed a graph of the average change in level of the saltmarsh over the two year period. This showed that the saltmarsh surface is rising at about 3mm per year. Although it is still early days to come to any conclusions, this rise coincides with the relative sea level rise on the east coast, and confirms that saltmarshes can maintain their surface level at the same rate as sea level rise providing that there is enough silt passing over them in the river.

James Pullen explained what could be expected from the use of aerial photography with drones (2 to 3cm accuracy). It was agreed that this would be a much more sensible way of monitoring the plan changes around the posts than the current rather hit and miss system of hand measurement with a tape. He ran a drone business and estimated that the cost of such a survey would be around £200. It was suggested that a set of such information every two years might be appropriate. Robin agreed to raise the matter at the next RDA committee meeting. The aim would be to have the first run in June/July 2017.

ACTION: Robin Whittle

5. RDA Pilot Study at Waldringfield: Robin introduced the subject noting that it was being carried out under the umbrella of the Waldringfield Flood Defence Group and within the MMO Licence (£2000) granted for the defence work . The RDA had provided £500 to support the project and this had been used to help pay for the MMO licence (£2,000). Robin for the RDA, had also applied and obtained an EA Licence (£50). The position of the study area is half a mile upstream from Waldringfield. The purpose of the study is to investigate

the role of shore crabs in the erosion of mature saltmarsh and the effect of rag worm and shore crab bioturbation on sediment loss in tidal mud lagoons. The study will also investigate the effect that a shallow sill may have on these losses. Robin showed a diagrammatic view of the equipment used.

Richard noted that one of the anti-rag worm plates had moved several metres from its original position. He had added anchoring pegs to these plates and reset them so that they could not move in the future. He then showed a table of results of the measurements taken so far. He did not expect any clear indications for at least a year, but was satisfied that it would deliver useful information over a period of time. He handed round a number of photographs which showed crab holes in the face of saltmarsh cliffs. These included locations on the Blackwater at Tollersbury, Hamford Water in Walton Backwaters and the Deben.

Richard then showed two videos taken with an underwater camera. These showed how crabs were constantly moving in and out of the crab hole tunnels. He assumed that the tunnels had been made by the crabs. Carol expressed some uncertainty about this although it is difficult to conceive what else could have caused the holes. The second video was taken in a pond near the monitoring site which was not directly connected to the river but was replenished with water at high tide when the saltmarsh was flooded. This pond was full of slime weed but yet showed the presence of crabs.

There was discussion about increasing the number of sites using similar equipment. Robin agreed to try to persuade Rosa Waller to allow her saltmarsh to the south of Waldringfield to be used as a site. James Pullen agreed to consider finding a possible site in Essex.

ACTION: Robin Whittle, James Pullen

6. Factors affecting saltmarsh erosion: Carol noted that there were many factors affecting erosion of the saltmarshes and that shore crabs may not be very significant. Crabs, however, were very important to the eco system [Subsequent to the meeting the Google link to eol.org/pages/128502/details notes that 'This species is listed number 18 out of the 100 most damaging intruders in the world']. She considered that using river dredged material to replenish the saltmarshes was the best solution to any erosion. Richard noted that the volume of sediment required would be very large and would not be economically feasible. Even the quantities quoted in the 'wish list' would not be nearly sufficient. He hoped that as a result of the research being carried out an alternative solution might be found for the East Coast rivers.

James noted that eel grass was good at absorbing wave energy and wondered what had caused its disappearance. Much of it in the Essex rivers and along the Thames had disappeared in the 1930s. If it could be reintroduced it would provide some resistance to the break-down at the river edge of the saltmarsh.

This concluded the discussion. Robin thanked everyone for their contributions and James for hosting the meeting and for refreshments.

7. Next Meeting: It was agreed to have the next meeting in May 2017. Robin agreed to send round notices for this.

ACTION: Robin Whittle

rtw 28/9/2016