Position statement on Coastal Change North Devon Biosphere

Purpose
This statement is to clarify the Biosphere Reserve's position regarding coastal change in the estuary area, dated the 12th February 2018. It is not necessarily the position of the statutory agencies that are within the partnership.

Background
The storms of the last two years have shown how much the coastline is vulnerable to change under such forces. The Pebble Ridge at Northam Burrows, Crow Neck on Braunton Burrows, and Horsey Island have each undergone some considerable change for various reasons.

The BR has been intrinsically involved in the development of shoreline policy in partnership with the North Devon and Somerset Coastal Group that is responsible for the Shoreline Management Plan (SMP2) from Hartland Point to Brean Down. In advance of that plan preparation, the BR convened an officer technical group and commissioned work to give good scientific and technical bases for policy development in the SMP2. The key report is by Prof. John Pethick, dated 2008. This report presents conceptual and regime models that indicate how the coast is likely to change and how it might be managed, and was partly invoked by the question of whether it is better to remove the landfill site or defend it indefinitely in all sea level change scenarios.

We are confident in the science behind the policy development, which has been confirmed by other consultants.

This work has been incorporated into the SMP2 that has now been adopted by Defra. The SMP2 is a good evidence-based policy document that seeks to ensure sustainable management of the coast for future generations. Subsequent action programmes and strategic studies have been carried out following on from the SMP2. These include the Pebble Ridge and considerations about Crow Neck.

Horsey Island:
The flooding of Horsey Island occurred prematurely due to lack of maintenance of the culvert and tidal flap, leading to excessive flow through the culvert and its ultimate collapse, leading to a wider breach. This has led to the inner bank (the Great Bank) now being the primary defence for Braunton Marsh. This was foreseen in the SMP2 but not for another 20 years or so. This time period was to ensure that the Great Bank could be assessed and made up to suitable standard. Failure of the Great Bank will not cause flooding in Braunton because the tides will not reach that far (flooding in Braunton is caused by river and surface water only). Due to the natural and social capital embedded in Braunton Marsh, however, we believe that the Great Bank should be invested in to make it fit for purpose as a priority. The BR team will work with the Braunton Marsh Inland Drainage Board, the Braunton Marsh Commissioner, and the Environment Agency to secure rapid upgrading of the Great Bank.

The outer bank is a private defence that serves a land drainage rather than flood defence purpose. No public flood defence finance can be used to repair it. Careful development of inter-tidal habitat across the frontage of the Great Bank in particular will add resilience to the Great Bank. The outer bank can still serve as an energy dissipater which will also add to the resilience of the Great Bank. Further, constraining the tidal breach to its current position but reducing the volume is more likely to encourage sediment on to the site rather than strip off Horsey Island and reduce its dissipative function. To that end The BR team will work with the landowner as far as is reasonable to identify a method and finance to have regulated tidal exchange and create an appropriate blend of habitats that will increase the resilience of the Great Bank for 20 to 30 years.

Northam Burrows Pebble Ridge:
The ridge is a natural feature that in geological terms is ephemeral, however the imposition of a landfill site at its distal end in the late 1940s and early '50s leaves us with a problem. The Pebble ridge has been retreating and rotating to be more directly facing the waves (swash aligned) over the last few hundred years, due to a reduction in the supply of pebbles from the

coastline to the west. The rotation means that the rate of retreat is faster at the Westward Ho! end than the distal (landfill end). Our studies and the SMP2 policy promote the encouragement of the rotation and ultimately holding the line in front of the landfill site, which should be defended until it is technically and financially feasible to extract the rubbish from the site safely.
A combination of the lack of pebble supply from longshore drift, the increased strength in wave climate, the hard point of the rock armouring and the fixed dunes are causing increased erosion close to the landfill site.
We call for the partners in the technical officer group to reconvene and focus on the problem at Northam Burrows, the causes, and the solution. We ask that resources are identified as soon as practicable to ensure that the landfill site line of defence is put in place before it is needed.
The Royal North Devon Golf Course is an important cultural asset to the area and we hope it will remain at Northam Burrows into the future. However, we urge the golf course managers to redesign the course and move inland across the site as soon as possible to allow for the coastline to respond to the inevitable sea level rise in accordance with the best available science.

Crow Neck:
Crow Neck was artificially reinforced by a column of rock armouring following storm surge in the ‘80s. The extraction of sand and gravel from the areas was stopped in 1998, however the erosion of the neck has continued. This area forms part of the Braunton Burrows SAC and SSSI which is designated for its geomorphology as well as its biological qualities. Therefore it is national policy that natural processes prevail.
Our assessments from 2008 showed that it is possible that the feature was artificial having been seeded by a fish weir that was placed in the area. The Croyde beds which form the solid geology that rises under the neck to be exposed on the foreshore provide wave protection and resistance against further downward erosion of the foreshore.
The rock armouring now left exposed is affecting coastal processes, though not significantly. These rocks may also provide some wave attenuation on very high tides, which might impact upon structures on the south bank of the Taw and possibly, though not significantly, on the outer bank at Horsey Island.

To that end we support the natural processes being left to work, with the rock armouring left in place. The function and position of Crow Point Lighthouse is a matter for Trinity House to adjust as it does for changing coasts around the UK.

Generally
We will continue to participate in the shoreline planning process and encourage participation and clear communication of the issues with the public. We seek to ensure that the coastline remains sustainable, beautiful and healthy for this and future generations.