



A SUSTAINABLE VISION FOR HOYLAKE BEACH

UPDATE: AUGUST 2019

Previous reference:

1. A Sustainable Vision for Hoylake Beach

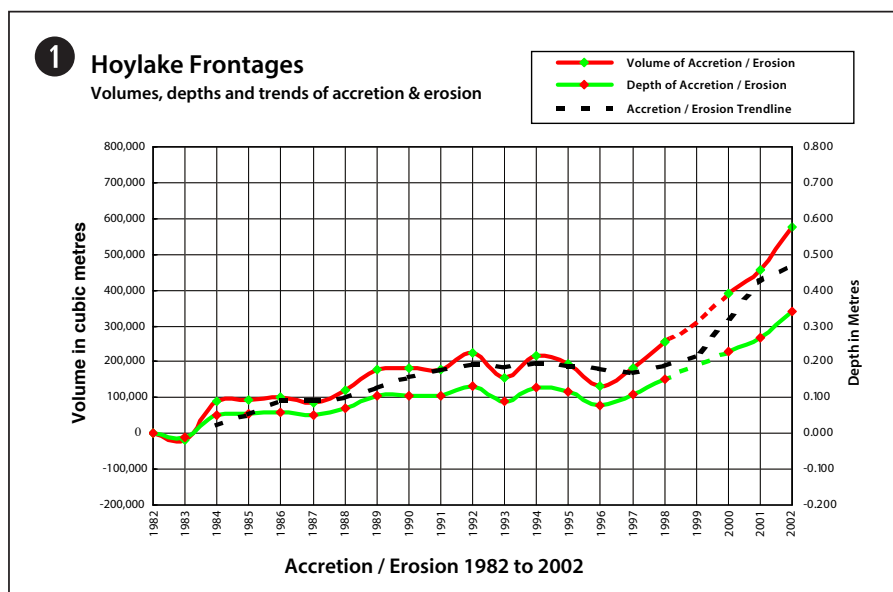
[www.hoylakevillage.org.uk/images/pdfs/Sustainable%20vision_Layer%201_\(2019_UPDATE\)_LOWRES.pdf](http://www.hoylakevillage.org.uk/images/pdfs/Sustainable%20vision_Layer%201_(2019_UPDATE)_LOWRES.pdf)

2. July update

www.hoylakevillage.org.uk/images/pdfs/UPDATE_JULY_2019.pdf

If you have read the above documents you will be aware of the significant changes along the North Wirral Foreshore that are causing a dramatic increase in the amount of vegetation growing there. In our July update we focused on aerial surveys that revealed new embryo dune ridges as well as evidence of growth as a result of broken drains. We also recorded 12 dune species growing on those ridges that were new to Hoylake foreshore. In this August update we present some of the science and data behind the natural processes, in particular the single most important feature; sand accretion or beach level rise, and why this, more than anything else, is the cause of the increase in vegetation. And finally, why this should now be seen as an opportunity, not a threat.

In the following chart (figure 1) we see the level of sand accretion at the Hoylake foreshore between 1982 and 2002. During these years the council conducted an annual 'Beach Volume Analysis'. This showed a steady increase in rise until the late 1980s, after which the rate of sand accretion accelerated significantly. By 2002, the beach was rising at a rate of 300mm per decade.



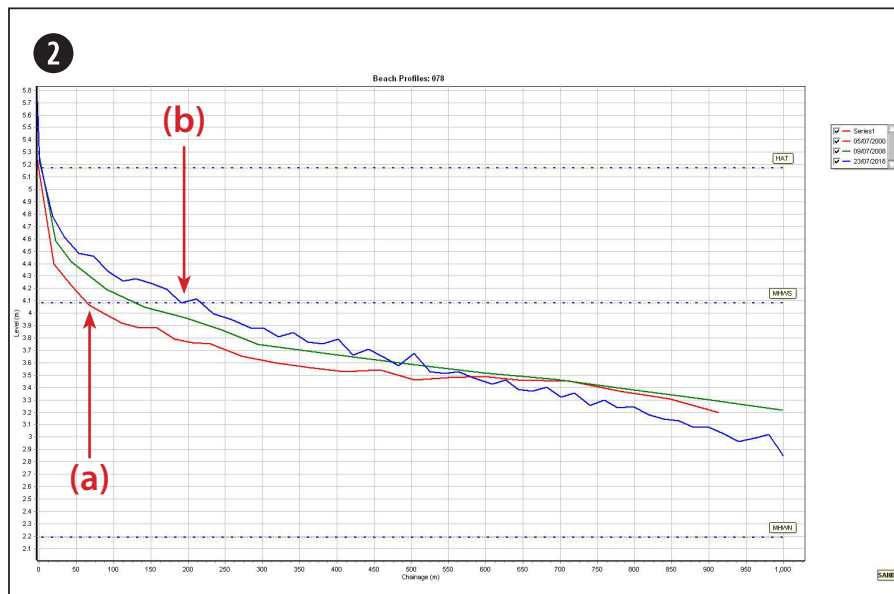
The chart covers the area from Red Rocks to the new Lifeboat Station. This chart discounts what was thought to be an 'exceptional' 70,000 cubic metre sand accretion in 1999. However in 2003, accretion of over 120,000 cubic metres was recorded. Data courtesy WMBC.

In fact, in 1999, over 70,000 cubic metres of sand was added to the beach at Hoylake, but this was discounted at the time as an anomaly. In reality, it was not; in subsequent years much larger amounts of sand have accreted. To put the volume of wind blown sand into perspective, 70,000 cubic metres would require a truck to be loaded with sand every fifteen minutes, seven hours a day, five days a week, 52 weeks a year, just to keep the beach level.

Much of the "golden sand" that people aspire to is blown from the sandbank on days when the tide is low, the bank is dry and the wind is over 20 knots. Evidence of this is the accretion of light golden sand adjacent to the old baths and lifeboat slipway, along with the dune grasses by the old baths area, which has formed over a very short space of time since the construction of the new lifeboat station.

Since 2000, as a result of new satellite and other highly accurate 'LIDAR' scanning technologies, the council have had access to even more detailed measuring techniques, including beach 'profiles'. These are 'cross sections' of the beach running 1,000 metres out from the promenade wall at nine points, each 200 metres apart, from the new lifeboat station to Red Rocks.

In figure 2 we look at profile 78, from the bottom of Trinity Road, showing beach levels between 2000 and 2018. The 'y' (vertical) axis shows chainage (distance) from the promenade wall. We can see that in 2000, at a Mean High Water Spring tide, we would need to walk out 60 metres to get our toes wet (a). By 2018, we would need to walk 190 metres to get our toes wet (b); a high tide tide cover reduction of 130 metres in less than 20 years.



The 'x' axis shows Newlyn Chart Datum; a standard by which all coastal levels around the UK are measured and 4.93 metres below Hilbre. To calculate local tide levels add 4.93 metres to that axis. Data courtesy WMBC.

The Mean High Water Spring tide cover of the beach is therefore receding by 75 metres every decade. Since the beach is getting higher, and tides are covering much less of the beach each year, it is inevitably getting drier. At this rate, by 2050 a High Water Spring tide will be more than 400 metres away from the promenade wall.

HOW DID IT COME TO THIS?

When the Victorians built the promenade wall in 1897, their utopian vision of a clean, profiled amenity beach of 'golden sands', to encourage visitors to come to Hoylake on the new railway, and to provide a healthy environment for residents, was only ever going to be short-lived. For our generations, it is difficult to think of Hoylake beach in any other way. But nature and science are forcing us to be more realistic looking forwards, because as technology has advanced, we can now clearly see that the rate of sand accretion has always been outstripping the impact of the tides, at first slowly after the wall was built, but ever more quickly as the decades have passed. As tide reach reduces, the height of the water lessens, wave energy on each tide weakens, and so the sea is less able to remove vegetation and sand from the beach year on year.

What does this mean for Hoylake? A higher, drier beach each year is inevitable. By keeping the beach flat, and in the absence of natural obstacles, more and more wind blown sand will reach roads and private gardens. Groundwater drains will become blocked more frequently, potentially causing further drain failure; a vicious cycle. Polluted 'anoxic' water and plastics already wash onto the beach when these drains are unblocked. More weeds and meadow grass will grow on the beach as seeds and grass are carried by the wind from gardens.

At the same time, the seeds of dune species are being washed in on the tide from Red Rocks. Spartina is finding it increasingly difficult to take hold on drier sands between Kings Gap and the Lifeboat Station. If this new dune vegetation is allowed to take hold, it will gather the wind blown sand and quickly form dune ridges. These will in turn protect the groundwater drainage systems, and reduce wind blown sand on the roads.

CONCLUSION:

1. **See dune succession as an opportunity, not a threat.** Dunes create areas of clean, profiled amenity beach for residents and visitors, and attract an abundance of wildlife. They are a natural filter for the sea, trapping waste from the land and flotsam from the sea. They reduce wind blown sand, protecting private property and drain systems. They can be engineered and shaped to our needs. They attract visitors.
2. **Create a new vision for the 21st century:** a café and visitor centre on the promenade with information boards, viewing platforms, boardwalks and other facilities. Significant funding can be obtained for such habitat restoration projects; for example, Devon Council recently won over £7 million for a similar scheme from the Coastal Communities Fund; the same funding source of the £3.64 million Hoylake Beacon scheme.
3. **Let go of traditional Victorian notions** of a traditional, linear "golden sands" amenity beach. No amount of digging, spraying, or raking will ever bring that back; in fact by removing obstacles to wind blown sand, we're making it worse. Let's work with nature. We can still have golden sands, but with much more too!