



A SUSTAINABLE VISION FOR HOYLAKE BEACH

UPDATE: AUGUST 2019 (PART TWO)

THE PARKGATE QUESTION

In this update we answer the most commonly heard question about any 'naturalisation' of the beach; "How do you know it won't go like Parkgate, with mosquitoes and rats?" To understand this we need to compare the more sheltered, swampy and brackish (lower salinity water), marsh conditions of the estuary, and the types of vegetation that grow there, with the much more exposed, extensive sandflats, mudflats and narrow strip of *saltmarsh* of the North Wirral foreshore at Hoylake, which directly faces the open sea.

Just as along the banks of many inland rivers, and around the edges of lakes, canals and ponds, the vegetation at Parkgate is dominated by **reeds** and **rushes**, most notably Common Reed (*Phragmites australis*) and Sea Club-rush (*Bolboschoenus maritimus*). Water salinity determines which grasses will thrive in a particular environment. These reeds and rushes could not survive in a coastal environment such as Hoylake, where there is much higher water salinity, as well as being exposed to much higher wind and wave action than Parkgate.

These wetlands of Parkgate are attractive to a wide range of birds because these calmer, lower salinity waters attract fish, rodents such as water voles, and insects such as mosquitoes and mayflies. These insects would also not be able to thrive in the more exposed saltwater environment of Hoylake foreshore (figure 1).



While midges naturally gather on tidelines of seaweed and other vegetation deposited by the highest tides, mosquitoes are attracted by stagnant low saline, anoxic, polluted water from broken drains, cleared groundwater drains that have been blocked by sand, algae and seepage through the promenade wall, such as by the old toilet block.

They are not a consequence of emerging saltmarsh, beach grasses or dune hummocks, which instead attract bees, butterflies and other bugs, such as at Red Rocks and Birkdale.

Hoylake's natural state is a combination of sandbanks, some silty and muddy areas, and an emerging narrow **coastal saltmarsh and dune system**, such as that seen between Red Rocks and West Kirby. Sand and mudflats are good for birds because of the invertebrate food sources that thrive there. Dunes, saltmarsh and slacks are also known for their rich biodiversity, and the North Wirral Foreshore could be providing a habitat for a range of rare or endangered species of fauna and flora. Typical dune insects include beetles, spiders, bees and butterflies.

Initial stages of dune and saltmarsh development can be identified as clumps of Common Saltmarsh Grass (*Puccinellia maritima*) develop into "hummocks", where wind blown sand accretes around the grass (Figure 2). Like other dune grasses, it is much more wind and saline tolerant than reeds and rushes, and a saltmarsh and embryo dune environment is entirely different to the swampy, brackish water environment of Parkgate.



"Hummocks" of sand accrete around Common Saltmarsh Grass (*Puccinellia maritima*) at Hoylake. These are becoming much more common at the beach level rises and tidal cover reduces. The Beach Management Agreement of 2010-2015 between Natural England and WMBC clearly failed to give sufficient weight to the emerging impact of wind blown sand accretion on the ecology of the foreshore, as a result of a focus on management of the very different Common Cord Grass (*Spartina anglica*). The consequences of this are now much more visible and must not be ignored in any future appropriate assessment or beach management agreement.

These hummocks are now becoming more common in the late Spring and early Summer each year, because as the beach level rises with the huge volume of wind blown sand (see our August Update) they are increasingly protected from the sea and have more time to establish between high tides. They often grow in straight lines, as a consequence of seeds being collected by the sea from the nearby saltmarsh and dunes at Red Rocks, and deposited in the strandlines of the highest tides on the Hoylake foreshore. With more and more time before a subsequent high tide, these seeds have time to establish, and they grow very quickly indeed, becoming very efficient at accreting sand on the next high winds, quickly enhancing the profile of the beach. A clearly visible, active embryo dune system can evolve in less than five years, such as the newest one at Birkdale (figure 3).



An emerging one metre high dune system at Birkdale has developed in less than five years following the establishment of initial hummocks in 2016 (inset). This dune is being rapidly colonised by Sand Couch (*Elytrigia juncea*) and Marram Grass (*Ammophila arenaria*); other species will follow. It is worth noting that Common Cord Grass (*Spartina anglica*) does not grow on dunes but can survive in slacks, such as at Red Rocks, where it has not 'taken over'.

Photos courtesy Philip H. Smith & Patricia A. Lockwood

However, the current reactive beach management regime at Hoylake consists of chemically killing these grasses, including spraying any growth on mudflats, in an attempt to combat Common Cord Grass (*Spartina anglica*) and to actively inhibit dune succession. What is left of these embryo dunes and vegetation after treatment is then raked, potentially further spreading the rhizomes of any surviving *Spartina*, which has proven to be resistant to all treatment for decades. It is worth noting that *Spartina* has never 'taken over' at Red Rocks, where there has been no recent chemical spraying or other treatment.

This management regime stops a natural process from taking hold, but chemical treatment may also potentially adversely impact the invertebrates that are a food source for birds, the protection of which is a key rationale for the SSSI status of the foreshore. To our knowledge, no tests have been conducted before or after spraying to establish whether or not this has indeed had an adverse impact on invertebrates.

Additionally, as a consequence of the current beach management regime, the beach level is being encouraged to rise more evenly across the foreshore. Wind blown sand, which could otherwise be feeding newly emerging dune ridges, is carried well beyond the promenade wall onto roads, blocking drains, and on to private gardens and driveways, exacerbating the very problems the management regime sets out to tackle.

As for the problem of rats; a little sobering perspective is needed. A 2018 Freedom of Information request to Wirral Council revealed the top forty locations in Wirral for reports of rats to environmental services. The area from Parkgate to Heswall ranked 30th. Hoylake ranked 22nd. Top of the list? West Kirby. So next time someone says "It will go like Parkgate, with rats and mosquitoes", you know what to say. Sometimes rumours are not all they seem...

CONCLUSION:

- 1. Again, fix the drains, and keep groundwater outlets clear.** This includes a number of broken domestic drains between Kings Gap and Red Rocks. Until this is done, grasses and algae will continue to grow out of seepages in the promenade wall and polluted, stagnant and anoxic water will continue to pool near any leaks for example, at the old toilet block, at the Kings Gap slipway, and in front of private residences between Kings Gap and Red Rocks. Mosquitoes and midges will continue to thrive. Plastic will be blown and washed into the sea. Public health will continue to be at risk.
- 2. From 2020, allow hummocks to develop and grow as part of a five or ten year trial; do not treat them with chemicals, sprays or foams.** This will harm no-one, and will not attract mosquitoes, rats, or insoluble political arguments.
- 3. Gather groups of volunteers to monitor and clean the development of any dune and saltmarsh system:** this is commonly done around the coast and ensures the community are fully engaged and keen to protect an emerging beautiful and natural habitat; providing a great learning opportunity for all ages.