**Ecological character description for Dungeness and Rye Harbour Ramsar Site**

Dungeness and Rye Harbour comprise the largest cuspate foreland (a low-lying triangular foreland) in Britain and form part of a system of barrier beaches that can be traced 40 km from Fairlight to Hythe. The foreland represents some 5,000 years of coastal evolution and environmental change, which are well documented through both geological study and historical records. The important features include the eroding and accreting coastline, exposed shingle ridges, buried shingle ridges, cuspate foreland (ness) development and associated sediments, such as marsh interface deposits and peat. The major phases of development of the foreland are represented in a series of morphological and sedimentological zones each of which provide distinct and critical evidence.

The surface and subsurface shingle ridges are dominated by flint. The ridges can be directly related to the development of the barrier beach system, formation of which probably began to the west, extending and evolving through a series of beach recurves, and the destruction and rebuilding of barrier beaches. The surface ridges evident today provide only one element of the evidence for the foreland development. The subsurface, or buried, ridges are important as they allow mapping of the foreland evolution. Finer grained material (including peat deposits) occurs between the barrier beaches, representing backwater environments. The presence of palaeo-environmental information from these deposits allows for detailed interpretation of the environmental conditions at the time of deposition. Dating of the deposits allows for a chronology of coastal evolution to be developed. Interpretation of the coastal and environmental changes at the site relies heavily on the relationship of the shingle ridges and associated deposits. The lateral and vertical variations in the deposits, and the ability to correlate and date the backwater and shingle ridge sequences is a key factor in furthering our understanding of the foreland development.

The continuing evolution of the foreland is itself of interest. The site is responding to a variety of influences including reduction in sediment supply, coastal defence works, recycling for beach management, training walls at Rye Harbour and sea-level rise, including that caused by climate change. However, despite these influences the site continues to evolve, and understanding the ongoing evolution, including comparison to historical changes and the influence of human activity, is a key element of the interest. In this context the site is one of a suite of five south-west facing beach systems along the coast of the English Channel which all show contrasting characteristics in relation to sediment supply, erosion and orientation to the dominant wave direction.

The geomorphological processes have led to the formation of a coastal landscape supporting habitats such as saltmarsh, sand dunes, vegetated shingle, saline lagoons, standing waters, lowland ditch systems and basin fens.

The extensive systems of ditches and dykes (such as those which drain Walland Marsh and Pett Level) are important examples of lowland, slow-moving and eutrophic (nutrient-rich) waters. There is a brackish influence near the sea and also inland in the large ditches or where peat deposits, which leach salt, lie close to the surface. The majority of the ditches have high plant species richness.

The hydrology of the exposed shingle area on Dungeness Point is dominated by the rain fed drinking water aquifer that lies under the Dungeness shingle peninsula

To the west, the River Rother and its tributaries drain to the mouth of the Rother estuary into Rye Bay.

The extensive areas of open water, grazing marsh, reedbed and intertidal habitat provides safe feeding and roosting sites for waterfowl.