



# Why are sand dunes important?



**Sand dunes provide defence  
from coastal flooding**

Sand dunes are dynamic coastal landforms and provide a barrier between the sea and land. They can help to protect low lying coastal towns, businesses, and agricultural areas from flooding.



**Sand dunes help to reduce the risk of coastal erosion**

Dunes protect low-lying coastal areas from flooding and can act as buffers against erosion, dynamically cycling between periods of accretion and erosion depending on climatic conditions. Sand dunes are a store of sand, supplying sediment to the beach during times of erosion and during times of accretion.



**Sand dune systems have been, and some continue to be used as venues for military training**



Sand dune systems such as Kenfig, played an important role in the Second World War being used for artillery firing and tank practice. Some, such as the Pendine Range in Carmarthenshire, continue to be used by the military for training and testing. The landscape provides realistic desert driving conditions and a challenging environment to navigate through.





## **Sand dune systems provide grazing for livestock**

Well-managed grazing on sand dunes, with the right number of cattle, sheep, or horses, can contribute to sustainable livestock farming and can also suppress undesirable vegetation. If left unchecked plants like brambles, and shrubs such as willow and hawthorn would cover sand dunes in a blanket of scrub.

By eating the fast-growing competitive species and allowing light to reach the surface layer of the dunes, livestock grazing helps create space for less competitive and sensitive plants and flowers to thrive. Sustainable grazing also ensures there are different heights of grass and vegetation which can attract a rich variety of insects and wildlife.



## **Sand dune systems provide ground water storage**

The porous nature of sand dunes allow for the rapid infiltration of rainfall. The water permeates down through the sand to geological layers underlying sand dunes which can provide groundwater storage. Thick clay or peat layers below the sand layers impede infiltration to deeper layers and give rise to perched water table conditions.

In some countries such as The Netherlands, drinking water is filtered through and abstracted from sand dunes. This has been known to have been taking place since the 1850s when a vast stock of fresh dune water became the major source of drinking water for Dutch cities.



**Sand dune systems provide areas for recreation, leisure and learning**

Sand dunes can play host to recreation, leisure and learning activities including walking, cycling, horse riding and golfing (although sand dunes are changed greatly for golfing) and offer a perfect venue for people to get out to connect with nature and improve their health and well-being.



## Sand dune systems support biodiversity

Sand dune habitats are one of the most natural remaining vegetation types in the UK. They support more than 70 nationally rare or red-data book species and are a refuge for many lowland species lost due to agricultural improvement. Sand dunes support a wide range of plants and animals, including many species which have very specialised requirements.

Plants such as bedstraw, fen orchids, petalwort and helleborines can be found growing amongst the dunes. Bird species such as skylark and meadow pipits can be found overhead. Sheltered areas warm up quickly and offer habitat for invertebrates such as the sand lizard and the natterjack toad. Whilst warm open areas can be good for reptiles the dunes are also home to many amazing species of mosses, liverworts, and fungi.