



Duver means.... Dunes!

Welcome to St Helens Duver!

The word 'Duver' (pronounced to rhyme with 'cover') is a local, Isle of Wight, term for an area of sand dunes. During your visit to St Helens Duver, you are going to learn about...



- ✓ The **physical geography** of St Helens Duver – what sand dunes are, how they develop and what they are like
- ✓ The **human geography** of St Helens Duver – the human activities that are taking place here
- ✓ The **interactions** between the human and physical geography of the area.

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Let's start with the physical geography of the Duver...

St Helens Duver is a type of coastal ecosystem called a sand dune. Basically, they are accumulations of sand which have been shaped into a series of ridges by the wind. The three key ingredients for a dune to form in the first place are: wind, sand, and an obstruction.

Onshore winds blow dry sand inland and, if there is an obstruction such as a piece of driftwood or seaweed, the wind is interrupted and deposits some sand so that it accumulates around the obstacle. Marram grass may **colonise** these tiny dunes, as it is tolerant of the high PH, salty, dry and exposed conditions. These tiny new dunes are known as **embryo dunes**.

Marram grass is an excellent **coloniser**. It has long roots which bind the sand, and trap even more sand so the embryo dunes can grow bigger. New shoots grow from the long roots and a 'mat' of marram grass develops (see picture)

As the dune becomes more stable, other plants can survive. The **foredunes** lie just behind the embryo dunes and can also contain plants like sea rocket and saltwort.



As the plants die, they decompose and add nutrients, which allow other species to have a fighting chance of surviving and, gradually, more and more species start to develop. They are not babies anymore – established and stable dunes are called yellow dunes and you may find plants like mosses, lichens, and sea holly.

Further inland still, you find the grey dunes, and these are well established with much better soils, allowing a greater range of plants to grow. You will find small shrubs such as gorse and bramble and, perhaps, dune slacks; 'troughs' in the dune where there may be water during some or even all of the year. Rushes and sedges thrive in the damper conditions here (see picture).

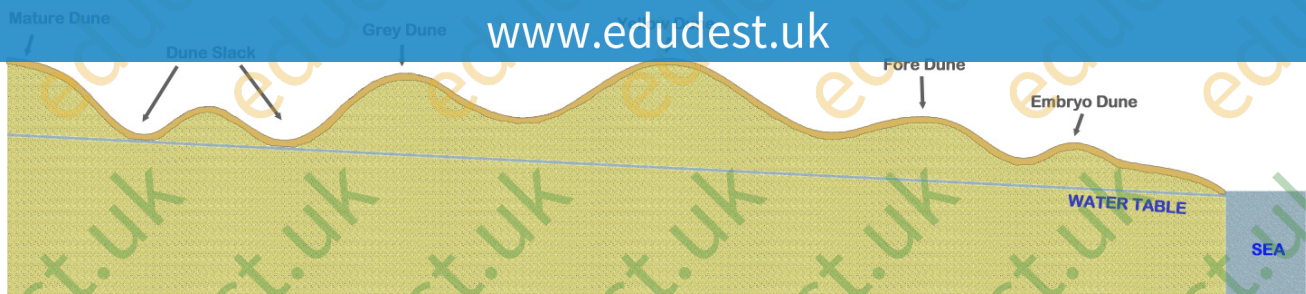
Ash or birch trees may grow in the most mature dunes at the back of the sand dunes, furthest away from the sea.



Walking back through a sand dune is like walking back in time and, as you go, the dunes are older and more established. The diagram shows a simple cross section of a dune:

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Task 1: Annotating physical features

Using the information above, and your own observations as you walk around and explore the dune, you should annotate your map by doing the following...

1. Find and label the (approximate) location of an embryo dune and explain how they form
2. Find and label the (approximate) location of a yellow dune and a grey dune and describe what they are like
3. Explain how conditions change as you go further inland
4. Find and label the (approximate) location of a dune slack, describe what they are and what they are like.

It would also be a good idea to take some photos of the physical features of the dunes – you could add these to your map later.

Adding human activity...

There are a wide range of human features and activities on St Helens Duver. You are going to find as many as you can, and locate them as accurately as you can onto your map (use another colour). The following photos provide some clues as to what you might expect to find...



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Interactions...

How do the human activities interact with the physical environment of the dune?

The natural beauty of this area, and its proximity to Bembridge harbour and the open sea of the Solent have made this an attractive place for people to visit. Large car parks are provided, along with a range of amenities for visitors. Some people live here, and others come to take part in a variety of recreational activities, e.g. at 'Tack-tisle Adventures'.

Work with a partner to discuss what the positive impacts of this human activity might be, and write these ideas around your map in a different colour.

The downside...

Sand dunes are fragile ecosystems and are vulnerable to human disturbance. Trampling of the dunes is a big problem in places and, in some parts, erosion has got so bad that it has led to the development of blow-outs; repeated trampling soon disturbs that fragile vegetation and top layer to expose the sand below to attack by wind and rain.

The sand can be washed and/or blown away to leave a large depression, called a blow-out (pictured).



Write down as many negative impacts of human activities on the physical environment of the Duver as you can around your map.

The human and physical geography of St Helens Duver



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KEY

- Physical features
- Human features
- Interactions



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