

Sand dune investigation: Key Stage 2

Questions : Which plants are best at surviving near to the sea? Do different plants live in different places on the sand dunes? Does the soil change?

Discuss how to answer question e.g. what data to collect , how to record data , how to identify the main plants.

Children should learn:

- to ask scientific questions
- to plan how to answer questions
- to decide what kind of evidence to collect
- to collect and record data appropriately
- to identify and describe patterns in data
- to look critically at data collected
- to try to explain their results using their scientific knowledge and understanding
- to describe the limitation of their own and others' evidence
- suggest reasons for any differences in the plants using scientific knowledge where possible
- draw conclusions recognising limitations in evidence

Species Identification

Good field keys are available from the Field Studies Council.

<http://www.field-studies-council.org/publications/pubsinfo.aspx?Code=OP43>



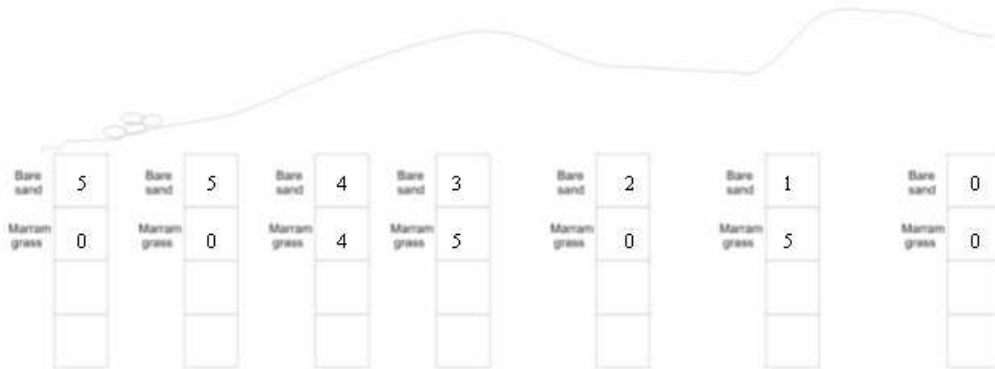
Species present will depend on season, except for Marram Grass which is present throughout the year. Only easily identifiable species should be used e.g. Bird's Foot Trefoil – when in flower it is a distinctive yellow and red and is commonly called 'Bacon and Egg plant'

Investigation

This can be approached using a simple transect from the Pebble Ridge to the golf course using 0.5m x 0.5m quadrats at appropriate intervals and a simple recording scale. Soil smears can be made using glue sticks and small samples of sand from each location.

Do plants change? Does the soil change?

1 2 3 4 5 6 7



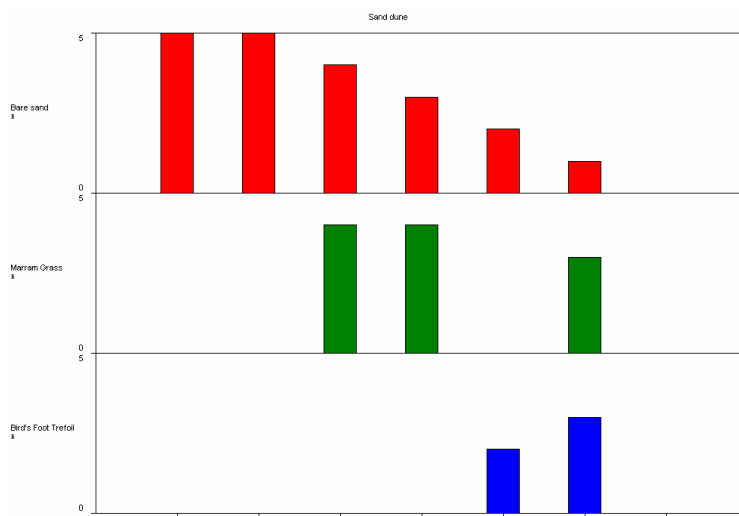
Soil smears



Plant Score 0% 1-5% 6-25% 26-50% 51-75% 76-100%
0 1 2 3 4 5

Explanation of results

Graphed results back in the classroom would show a typical pattern with the amount of bare sand decreasing as you move inland and the soil colour changing from pure sand to a darker soil.



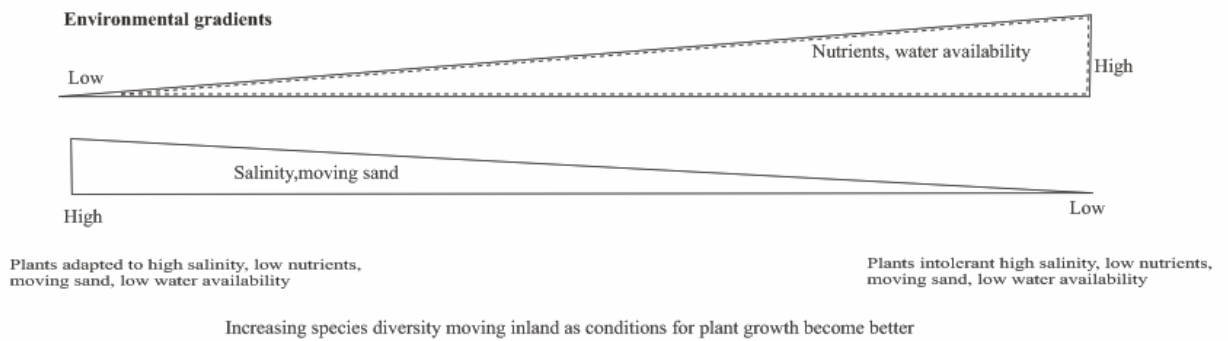
Simple conclusions would be that different plants occur in different places on the dunes.

Key points :

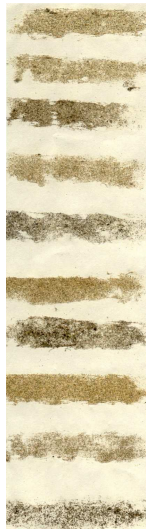
Changes occur in both vegetation and soil as you move inland from the sea, from younger to older dunes.

The soil becomes darker due to increased soil organic matter.

Increased water holding capacity of the soil results in more water being available for plants .



Typical sand smears from Braunton Burrows



Beach

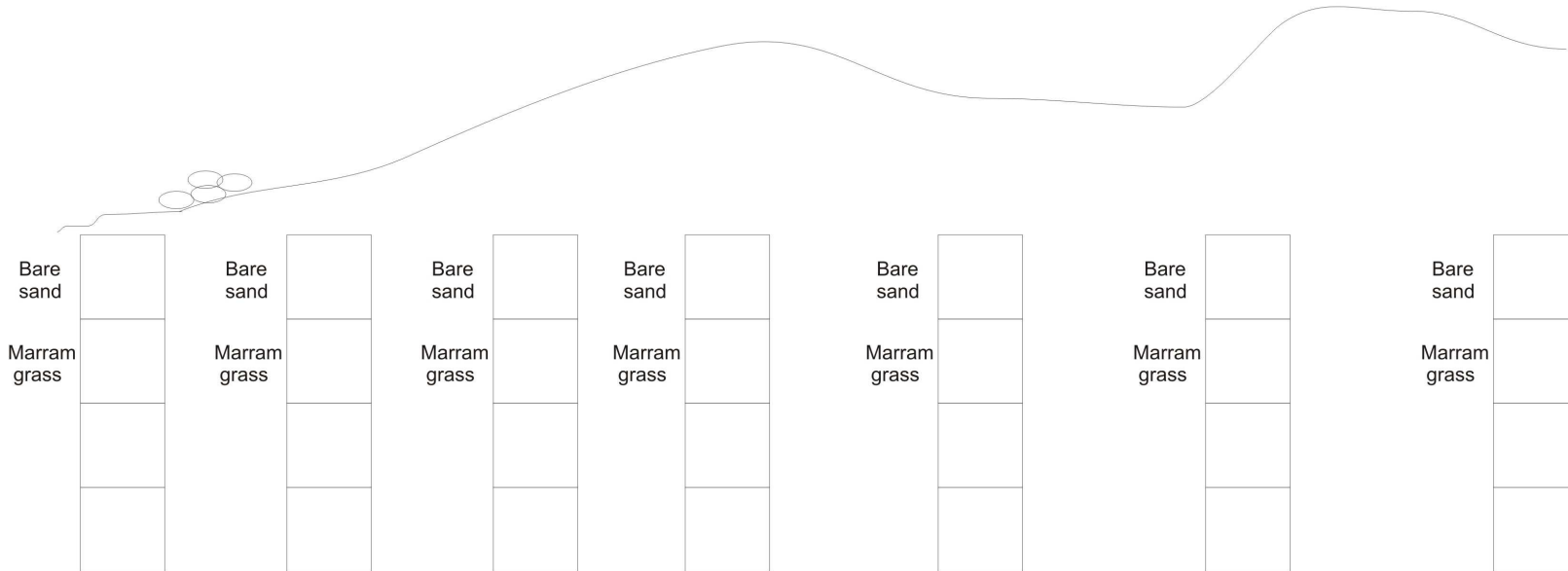
Woodland

Location

This approach has been used at Northam Burrows, but could easily be adapted for other locations. A good area for sampling at Northam Burrows is in an unfenced area of the dunes close to the 7th tee, with permission of the warden (Tel 01237 479708 Email: northam.burrows@torridge.gov.uk) Students and staff should be made aware of golfers and the possibility of flying golf balls, though the choice of a location just behind a tee minimises any hazards. :

Do plants change? Does the soil change?

1 2 3 4 5 6 7



Soil smears



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0% 1-5% 6-25% 26-50% 51-75% 76-100%