

## CHANGING CONDITIONS ACROSS AN AREA OF DUNES

Crossing an area of dunes from its seaward to its landward side, you find that the amount of fresh sand decreases and the amounts of shelter, water, and humus increase. The plant communities also change.

a) Try to fit the following plants into the sections (A) Embryo Dunes, (B) Yellow Dunes, (C) Grey Dunes and (D) Dune Slack, on the transect diagram that you started previously in Worksheet 21:

Prickly Saltwort, Marram, Sea Bindweed, Sea Spurge, Rushes, Sea-buckthorn, Ragwort, Biting Stonecrop.

### HOW DO THE ANIMALS IN THE ECOSYSTEM SURVIVE?

The animals differ in different parts of the dune area, as some are dependent on specific plants as hosts. However, life is not easy in this fragile ecosystem. Try and add these animals to the diagram from Worksheet 21.

#### WHO EATS WHAT IN DUNES

- **Brown-tail Moth.** In its adult form it is mainly white! Its hairy caterpillars feed on Sea-buckthorn. Avoid touching the caterpillars! Their hairs can cause very severe rashes and also asthma.
- **Cinnabar Moth** caterpillars feed on Ragwort and are poisonous to many birds.
- **Sand Dart Moths** are attracted to Marram flowers. Their caterpillars feed on Prickly Saltwort.
- **Spiders** feed on flies.
- **Red Banded Sand Wasps** feed on caterpillars.
- **Red Legged Spider Wasps** feed their young on spiders.
- **Snails** feed on most plants.
- **Frogs** eat flies.
- **Lizards** eat insects.
- **Thrushes** eat snails and Sea-buckthorn berries.
- **Cuckoos** are one of the few birds that eat Brown-tail Moth caterpillars.
- **Meadow Pipits** feed on insects and other small invertebrates.
- **Sanderlings** run up and down the strand-line picking up shrimps and other small invertebrates.
- **Kestrels** and **Sparrowhawks** eat small birds and small mammals, such as rabbits.
- **Rabbits** eat most plants.
- **Foxes** also eat small birds, mammals and rabbits.
- **Badgers**, which are omnivores (i.e. they eat both plants and animals), like blackberries and birds eggs.



Note that the top predators may actually live in nearby habitats and just move into the dune habitat to forage. So all the nearby ecosystems are very dependent on each other.

**CHANGES TO THE BALANCE OF THE ECOSYSTEM**

b) What would happen if all the foxes were cleared from the area?

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c) What would happen if the rabbits caught the disease **MYXOMATOSIS** and died?

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d) What would happen if the Sea-buckthorn was cleared from the dunes?

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Sea-buckthorn (and Marram), Plage-Ste-Cécille, France



**BLOWOUTS**

Dune systems are very fragile and can easily be damaged by wind erosion. **BLOWOUTS** can occur in dunes where the wind erodes out animal or human paths through the dunes, or scours out lower areas in the dune crests. Large volumes of sand may be blown away, and these blowouts are liable to enlarge as each windstorm blows across the dunes.

e) How might the dune ecosystem be affected by a major blowout?

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f) What two coastal problems might be caused by blowouts?

One 

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Two 

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Blowout at Camber Sands



Image courtesy of Rye Countryside Office

