

VEGETATED SHINGLE AT RISK!

ASSIGNMENT

a) Divide into groups of 3 or 4 to write an article for a natural history magazine, or a feature for a newspaper about:

- i) The unique nature of shingle beaches,
- ii) The threats that face them (if working in a group of 4 divide these into 2),
- iii) Remedies to help conserve and enhance shingle ecosystems.

RESEARCH

Use the websites at the end of the worksheet, visits to nature reserves etc. to gather ideas and information.

- (i) Has partly been covered already in the worksheets but much more is available from the website and reference list.
- (ii) Some of the information can be found below, but search the websites and references for updates and extra information.
- (iii) There are some ideas listed, but you need to search the websites for other possibilities, and above all think of some really innovative ways to both solve the problems and enhance the habitats.

PRESENTATION

Using your IT or editing skills, make an attractive, well planned and illustrated article that will grab the reader's attention! Give the article a really arresting title and layout, and supply interesting captions for the illustrations.

A major problem about shingle is that few people are aware of the biological importance of the habitat, and that they themselves may be helping to destroy it.

ii) MAJOR THREATS

Beach Recession

Erosion of beaches due to sea level rise is a great threat.

It is estimated that current sea level rise is already greater than 1 to 2 mm a year along this stretch of coast, and we are asked to plan for 6 mm.

This last figure is likely to increase in the future.

Beach Narrowing or Coastal Squeeze

The landward side of the beach is often fixed by sea walls, housing, etc.

This means that, as the beaches are eroded back by the sea, they are being narrowed.

This reduces the area for specialised shingle ecosystems.

Climate Change

Increased storminess is predicted.



Warmer summers are predicted.

Winters may possibly become colder.

Much depends on how shingle communities are able to tolerate and adapt to change.

Coastal Protection Work

Fragile shingle ecosystems are easily damaged when sea defences are built or maintained.

In addition, many defences obstruct the longshore movement of shingle, reducing the natural replenishment of beaches further along the coast, often causing them to erode.

Sea defence schemes can seriously interfere with shingle wildlife.



Tourism and Recreational Pressures

Off road vehicles and motorbikes can severely damage shingle vegetation.

Walking and trampling on the shingle crushes plants and invertebrates, and birds' nests.

Shingle areas such as Rye Harbour, are the breeding sites for ground-nesting birds such as Oystercatchers, Common Terns, Little Terns and Ringed Plovers.

The camouflaged eggs, laid direct on the shingle, are easily destroyed by foxes, dogs and people, or the birds may be frightened off their nests by the disturbance.



Pressure for building on shingle

With the pressure for more housing in the South East, shingle habitats are disappearing. Eastbourne Marina, (Sovereign Harbour) and an associated residential development, has destroyed a large area of interesting shingle vegetation at the Crumbles.

The houses along the edges of the coast roads at Pevensey and other sites are very close to the beach and sometimes extend their gardens onto the beach.

Dungeness Nuclear Power Stations and associated access routes are built on large areas of shingle.

In order to protect the site from erosion, the beach to the south-east of the power stations has to be recharged regularly, which disturbs the shingle community.

Lydd Ranges at Dungeness, occupying nearly 3000 acres of shingle, are used for intensive military training.

Water and gravel extraction

Shingle is in demand as constructional material, and there are many gravel pits at Rye Harbour and Dungeness. (Attempts are now being made to reduce the amounts removed here.)

Large amounts of shingle are extracted at Hâble d'Ault in France.

At Dungeness the water table has been lowered by extraction of fresh water, deep below the shingle, for local water supply.

This makes the shingle even drier, further endangering the vegetation.

Alien Plants

Red Valerian is becoming very invasive. This garden plant has escaped from gardens next to the shingle, or from rubbish dumped onto the beach.

It may be outcompeting native species because it seems more able to survive droughts and extreme weather.

Pollution

Oil pollution is a particular problem on shingle.

Litter problems (See worksheet 28 on litter and wildlife)

Dog Fouling.

Vegetated shingle communities are easy to destroy, but difficult to recreate.





Seaside bungalows have encroached on to beach shingle at Dungeness, Pevensey and other places. Escaping garden plants, such as Red Valerian, are invading the natural shingle communities.

iii) HOW TO CONSERVE SHINGLE ECOSYSTEMS

Some ideas that have been tried locally are:

- Innovative methods of sea defence (At Pevensey in East Sussex, old tyres have been buried in beaches to try to strengthen them and the reduce the amount of new shingle needed).
- Fencing in the shingle to exclude foxes and dogs, especially during the nesting period for terns.
- Prevention of access for off-road vehicles.
- Education of the public by notice boards, leaflets etc.
- Promotion of Nature Reserves.

Try to think of other solutions to reduce the threats listed above. Make the best of opportunities to enhance the shingle environment.

WEB SITES

BAR at <http://www.geog.sussex.ac.uk/BAR/Biodiversity/shingleplants.html>
(English and French versions)

ESCC at <http://www.eastsussex.gov.uk/environment/>

RYE HARBOUR NATURE RESERVE at <http://www.wildRye.info/reserve/>

RX WILDLIFE at <http://www.rxwildlife.org.uk/> This is a wildlife website concerned with the coast and inshore waters of the RX fishing boat registration area, Dungeness, Rye and Hastings.

TWO BAYS at <http://home.clara.net/yates/2bays.html> This compares the coast at Rye Harbour with that at Baie de Somme, Picardie, France.

