

SCENARIO 2: Sand-dune Ecology and Coastal Management Issues

In your groups could you please discuss and suggest:

- a range of techniques that could be used to assess the stated learning outcomes
- two major advantages and disadvantages of your assessment choices

The outline below provides the learning objectives and field activities for one day of a week-long, summer-term, field visit undertaken by year 2 Environmental Science students. The field week is based in Northumberland and students have access to library and lab facilities as necessary. There are approximately 15 students in the group.

Overall field course aims:

To further expose students to the principles and practice of Environmental Science in semi-natural, disturbed or stressed landscapes and habitats.

Learning outcomes: Students should be able to

- *Design an experiment to investigate changes in flora as distance from the foreshore increases.,*
- *Analyse the results of the experiment and report on the plant community dynamics in relation to sand dune succession*
- *Discuss the role of sand dunes and their flora in the context of coastal management*
- *Describe the impacts of heavy industry on the ecology of the Northumberland coast*

8.30 – 9.30 Introductory lecture

Community succession and ecology of coastal sand-dune habitats, with reference to Druridge Bay

10.00 - 13.00 Sand dune survey and visit to Druridge Pools

Students will carry out a transect survey of the plant communities in the extensive sand-dune system of Druridge Links. Soil samples will be analysed for pH. Concepts of succession, erosion, accretion and management issues of sensitive sand-dune habitats will be discussed. Students will observe a successful ex-coal mine restoration project, currently managed by NWT.

14.00 - 15.00 Reedbeds and coastal management

A talk by the Coastal Warden on the development of the East Chevington Reedbeds, and management of the Country Park and the Druridge Bay Heritage Coast site.

16.00- 17.00 Impact of Minestone Dumping at Lynemouth

Coastal disposal of minewastes has a long history in the Durham and Northumberland coal fields and cessation of mine closure sees initiation of a recovery process. With the temporary closure of Ellington colliery in 1994 the placing of minestone on the foreshore also stopped. It rapidly became apparent that the minestone placement was acting as a form of "beach nourishment" and was providing an important coast protection function. When Ellington re-started operations, minestone has continued to be placed on the foreshore to provide this coastal protection. The visit will provide an overview of the issues surrounding colliery dumping and also touch on local social deprivation issues.

19.30- 21.00 Analysis of data from plant survey and presentations