

SCENARIO 1: Freshwater Ecology

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

- *Describe the main biological water standards in the UK and how they are monitored*
- *Design and undertake a monitoring exercise on two shallow rivers*
- *Identify key families of invertebrates in the lab*
- *Analyse and present the data in an informative manner*

08.30 – 09.30 *Introductory lecture*

Introduction to the EU Water Framework Directive as the cornerstone for all future FW monitoring in Europe; the current plethora of EU projects looking to standardise methods across Europe. Outline the objectives for the day, the specific nature of the site to be visited and the perceived stress to the system.

10.00 – 13.00 *Field sampling*

At two sites on the Derwent River and its tributaries (reference site and impacted site), kick sampling in a wadeable reach of river, with associated recording of physical and hydro chemical parameters.

14.00 – 18.00 *Sample processing*

This will involve the sorting and identification (to family level) of the macroinvertebrate samples, collation and analysis of all data on a central location (MS Excel spreadsheets). Biotic indices, BMWP score, Ecological Quality Index, RIVPACS. Discussion topics include quality control, picking the best index for a specific stressor type.

19.15 – 20.30 *Preparation and delivery of group presentations*