

Guidance for Option C – Practical 1

Sampling an area using a transect

Safety

Although great care has been taken in checking the accuracy of the information provided in this guidance, Cambridge University Press shall not be responsible for any errors, omissions or inaccuracies.

Teachers and technicians should always follow their school and departmental safety policies. You must ensure that you consult your employer's model risk assessments and modify them as appropriate to meet local circumstances before starting any practical work. Risk assessments will depend on your own skills and experience, the skills and experience of your students, and the facilities available to you. Everyone has a responsibility for his or her own safety and for the safety of others. The notes below should not be regarded as a risk assessment.

You should carry out the practical yourself before presenting it to students. Make sure you are comfortable with the procedures, and can anticipate any difficulties any of your students may encounter.

Guidance

Sampling an area using a transect line is a basic ecological sampling technique and can be used almost anywhere. This practical can be carried out at a suitable local site such as a meadow or seashore. The basic method can be adapted to include sampling so as to create a belt transect, and measurement of the important abiotic features of the area such as slope, soil type, salinity or exposure to light.

Different student groups may be directed to study percentage cover, species richness and species density so that comparisons can be made.

Back in the laboratory students can present their results in a range of formats, including bar charts, kite diagrams and numerical tables.

Apparatus and materials

Each pair or group will need:

- a 20 m transect line marked at 1 m intervals (a long tape measure can be used)
- 0.25 m² quadrat (the size of the quadrat will depend on the organisms being studied: for a line transect of a meadow or seashore a 0.25 m² quadrat would be appropriate, but a smaller size could be used if time is limited, while a larger size 1 m × 1 m could be used to construct a belt transect)
- clipboard, paper and pen
- additional optional equipment:
 - levelling poles
 - pH probe
 - soil sampling bags
 - data-logger for recording temperature, light levels

Supporting the practical

Students should be supervised in the first stages of the sampling procedure. If samples are taken at intervals along the transect, the sampling point should be consistent – for example, always at the metre point or always between the points. It may help students to note the conditions in each sampled area for analysis later. Students should be warned to make sure that their activities do not cause damage to the local environment or harm to organisms present.