Conservation

MODULE 5

Come and see it!

TIME
3 hours

MATERIAL *per group*
Clinometer
Compass
Soil test kit
Light meter
Photocopies of sheet C8

SKILLS
Observation
Plant identification
Data recording
Seed collection

KEYWORDS
Seeds
Conservation
Plant population
Habitat
Extinction

CROSS-CURRICULAR ACTIVITY
Geography

Overview

Building on the information gained from the previous module (Conservation Module 4), the class will visit a site where the endangered or threatened species selected is known to grow. During the field trip children will use scientific skills to assess the species distribution and collect information about the population and the seeds produced.

Aims

To search for and identify the chosen species in the field.
To collect information about population distribution and density.
To collect some seeds (of any common plant species).

Teaching sequence

1. Before the field trip children must think about how their actions might cause damage to the plants, e.g. trampling, picking, and prepare a code of conduct aimed at respecting nature and behaving properly in protected areas.
2. On arrival at the plant growing site, divide the children into groups. Children should look for their target species in its natural surroundings. They should be able to identify the species from the plant identity card prepared in the previous module.
3. Children observe and describe where a plant lives in terms of the precise name of the geographical locality, e.g. Forest of Dean and what its immediate surroundings are like (habitat, e.g. along a river, in the shade). This information should be recorded on sheet C8 (2 sheets).
4. Using appropriate equipment (clinometer, soil testing kit, compass and light meter - for descriptions see website http://www.english-nature.org.uk/special/sssi/), each group of children investigates the conditions in which the plant is growing. This information should be recorded on sheet C8.
5. Monitoring and recording data on the plant population: children have to calculate distribution and population density of the species using sheet C8 (density: over the site as a whole, what is the average number of individuals of a plant in a square of 1x1 metre) and also estimate the total population.
6. Children should try to evaluate what ecological risks the plant may face, by observing the surrounding environment, e.g. presence of human activities: industry, motorway, shops, tourist facilities, and filling in the collected information on sheet C8.
7. For the last part of sheet C8 ask children to think of possible ways in which to conserve the species. Encouraged them to think of the life-cycle of the plants and their reproduction.
8. If there is an abundance of any common species nearby with fruit and seeds, children could collect this seed.

Teachers' notes

Measuring the population size and density might be tricky; teachers could help children in the following ways.
To get the population density, firstly survey the whole site and determine the extent of the population, measuring the total area occupied. Then select randomly up to 10 squares of 1x1 metre within the total area and ask the children to count the number of individuals in each of these squares. Eventually a mean number of individuals per square will be calculated (i.e. total number of individuals counted in all the squares /number of squares surveyed). Multiply this by the total area to get an estimation of the total number of individuals in the site. To assess the number of seeds, count (or estimate visually) those in one fruit. Multiply the seed number by the number of fruits on each plant, and then by the number of plants. This will give a rough estimate of the seed number.

Health and Safety

The standard H&S guidelines and regulations should be followed when visiting plant habitats. See Background Information for further information.

Behaviour notes

When visiting sites where threatened species grow, it is extremely important not to impact negatively on the survival of the species. Teachers should take particular care that children do not accidentally trample on or pick any plants.
They may only collect seed of identified common plants, e.g. dandelion, red dead nettle.
Teachers should reinforce the code of conduct developed at the beginning of the module while the fieldwork is taking place.

Field collecting sheet

The scientists in our group are:

School class

Where are you?

Locality (be precise)

The nearest town is County

Where does the plant live? (e.g. along a river, in a valley):

Altitude Aspect (N, S, E, W)

Light/shade conditions

Surrounding vegetation

Steepness (in degrees)

What kind of soil can you see or feel?

- ☐ Sandy
- ☐ Rocky
- ☐ Sticky (clay)
- ☐ Gravelly
- ☐ Crumbly (humus rich)
- ☐ Peaty

Wet one of your fingers with some water and touch the ground. Then press your finger in the box to the right.

What is the colour? .....

Using a soil testing kit, check the soil pH

How many of your selected plants live here?

Name of the plant:

How large is the area where plant occurs? metres X metres

Focus on a square of 1 metre x 1 metre and count how many individual plants grow there:

How many flowers can you find on one plant?

How many fruits can you find on one plant?

How many seeds can you find on one plant?

Look around you ...

What could be a threat to the survival of this plant?

What might threaten the environment in which it lives?

Why do plants disappear? Try to remember what causes the extinction of a species?

As you have seen today different types of plants exist. Which plants run more risk of extinction?

☐ Plants that live all over Europe
☐ Plants that live only in this one area in the UK
☐ Plants that live all over the world

Why do you think this is true?

What do you think we can do to conserve endangered plants?

Today I learned