

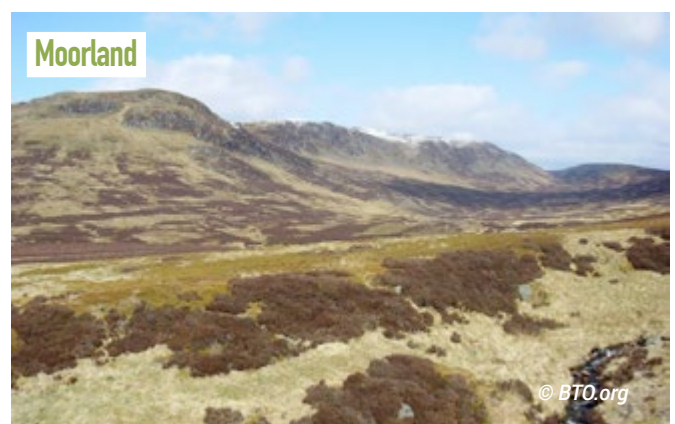
Habitats & Species

Scotland has many varied landscapes and habitats which have been shaped by underlying rocks, soils and landforms, the surrounding seas and the weather. Scotland's uplands contain the wildest places in the UK and some of the countries rarest plants and animals.

Mountains and moorlands cover almost 60% of Scotland, forming Britain's largest remaining area of largely undeveloped wildlife habitat. Scotland's mountain landscapes are world renowned for their dramatic beauty, rare habitats and recreational opportunities.

Types of habitat

The main habitats found in Scotland's uplands:



They are often thought of as one of the last true wilderness areas of the British Isles.

It is important to know the quantity and quality of the habitats in Scotland. The Countryside Survey is a unique study of the natural resources of the UK's countryside. The survey has been carried out regularly since 1978. The countryside is sampled and studied using rigorous scientific methods, which allows the results to be compared directly with those from previous surveys. This means it is possible to detect even the most gradual and subtle changes that occur in the UK's countryside over time.

Mountain Environments

Key species

There are many rare plants and animals in the Scottish uplands. Here are a few that have been identified as a priority for conservation action.



Find out more about biodiversity in Scotland's National Parks with these case studies:



Biodiversity in Loch Lomond & The Trossachs National Park



Biodiversity in The Cairngorms National Park

Designation & Protection

One method of protecting vulnerable habitats and species is through the application of Site Designations. Designations can be classed as Local, National or International to reflect their level of importance. Our National Parks house some of the most important natural heritage sites in the country, some of which also have international significance. That said designations can be found throughout rural and urban areas of Scotland.



Applying a designation to a site alone will not protect it. It's purpose is to guide and at times restrict the activities which are undertaken on the site, with the overall aim of maintaining or improving the quality of the sites special features upon which the designation is based.

Scottish Natural Heritage plays an active role in managing some, advising on others and monitoring the condition of the most significant sites. Their website provides guidance on the different designations which can be applied.

Find out more about protected areas and designation:



[Protected areas in Scotland](#)



[Designations](#)



Questions

Use the SNH website to answer these questions.

Give reasons why it is important to know what habitats and species we have.

Explain why many habitats in Scotland's mountains are protected

Who designates Local Nature Reserves?

Which Act of Parliament allowed the creation of National Parks in Scotland?

Explain what a SSSI is and what features they contain.



Hill vegetation transect

Investigate how the vegetation changes as you go up hill. Carry out a hill transect, a line along which you measure several different characteristics. Before going out to visit the hill, make some predictions about what might be expected.

- ▶ What would you expect to find as you go up the hill relating to the following? Why would you expect to find these changes?

Vegetation Cover:

Vegetation Height:

Vegetation Type:

Number of different species:



The changes in vegetation as you go up hill may be caused by non-living environmental factors, known as abiotic factors. These can include light, temperature, water, wind and soil conditions.

- ▶ What would you expect to happen to the following abiotic factors as you go up the hill? Why would you expect to find these changes?

Air and Soil Temperature:

Wind Speed:

Soil Depth:

Soil Compaction:

Look at a map of the hill you are going to visit. Decide where you will take the transect. Consider the following points:

- ▶ How long will the transect be?
- ▶ How many samples will there be along the transect?
- ▶ The route of the transect – consider access and terrain.



At each of the sample sites complete the following techniques and record the results in the table.

- ▶ Record the altitude of each site from the map.
- ▶ Use a quadrat and record the percentage cover of vegetation (including bare ground), the number of different species in the quadrat and the height of the tallest plant. Use plant identification keys to work out the different species present.
- ▶ Use the soil thermometer in all 4 corners of the quadrat and work out the average temperature.
- ▶ Use a thermometer 1m above the middle of the quadrat.
- ▶ Use an anemometer 1m above the middle of the quadrat facing the direction of the wind. Make sure there is nothing blocking the wind.

Distance along transect (m)							
Altitude (m)							
% Exposed Soil							
% Vegetation							
Number of different species							
Tallest Plant (cm)							
Soil Temperature °C							
Air Temperature °C							
Wind Speed (m/s)							

- ▶ What relationships and patterns are there in the data collected? Plotting graphs with the results will help to make trends more obvious.



Designations

The designations placed upon a site are intended to protect the 'natural features of special interest'. These protected areas can be very small, such as a Local Nature Conservation Site, or they can be vast, such as National parks.

All current designated sites can be found online through the website:



This website provides easy access to data and information on Protected Areas across Scotland, ranging from sites of local natural heritage to designations of national and international importance.

Using the website you can search by site name or by map. Within the map function, first select the designations you would like to see displayed using the layers drop down menu, then use the map to locate your site before clicking on the site to reveal the details.

Use the **MAP** search function to find a site with *Site of Special Scientific Interest designation* close to your school.

Produce a summary (see template on next page) of the site and it's designations which answer the following questions:

- ▶ What is the name of the site?
- ▶ What size is the site?
- ▶ What special features have been designated?
- ▶ What condition are the features in?
- ▶ What feature pressures have been identified?

On the website homepage use the **SEARCH** or **FILTER** function to find '*Cairngorms*' and '*Ben Lui*'

Produce a summary for each site detailing:

- ▶ Site name
- ▶ What designations have been placed on this site?
- ▶ What features are noted for this site?
- ▶ What 'feature pressures' have been recorded as impacting on the sites designation?



Designations site summary

What is the name of the site?

What size is the site?

What designations are there for the site?

What special features have been designated?

What condition are the features in?

What feature pressures have been identified?