



Introduction



Lichens are hardy organisms, living everywhere from the Bristol Downs to the tropics and Arctic tundra. They are often over-looked but have a fascinating biology. There are over 1,500 species found in Britain – about as many as there are flowering plants.

What are lichens?

Lichens are fungi that behave like plants because they have little green algal cells inside them. Together they form the lichen body (a thallus). The algal cells make sugar and give it to the fungus, and in return, the fungus shelters them from excess sunlight and water loss.




Lichens on trees

All the lichens on this trail grow on tree bark and twigs. This is a hostile environment, lacking soil, water and essential nutrients. Lichens are able to colonise places where other living things are unable to survive.

Lichens and pollution

It's important for our health and the environment that we have good air quality. Lichens are extremely sensitive to pollutants (such as sulphur dioxide and ammonia). Different species vary in their tolerance to pollution, which makes them very good biological indicators.

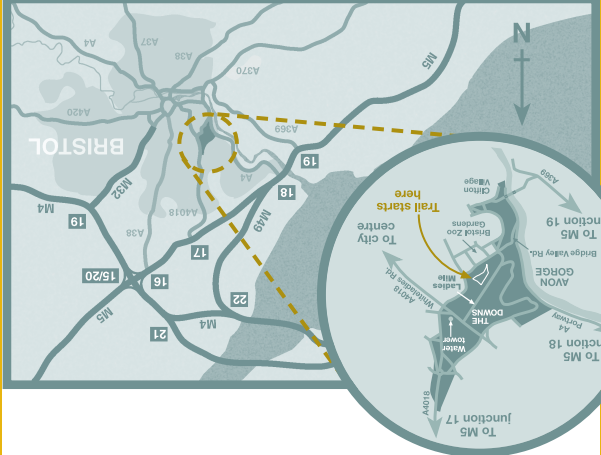
How to get here



By Bus: Services 8, 9, 586 and 587 have stops along the route of the Trail (see map inside for bus stop locations). For further information call Traveline on 0871 2002233.

By Train: The nearest train station is Clifton Down Station, 10 minutes walk from the Downs. For further details call National Rail enquiries on 0845 7484950.

By Road: Follow the map below.





Visitors with wheelchairs and pushchairs

The route has some gentle slopes. There are no steps or stiles but there is a ditch (a diversion is indicated on the map).

The route is on grass rather than hard paths. Some areas on the trail can be muddy, when it has been raining.

The nearest toilets are at the toilet block beside the Water Tower. There are disabled toilets and baby-changing facilities here.



The Downs lichen trail was funded by the British Lichen Society, the Bristol Naturalists' Society and the Avon Gorge and Downs Wildlife Project. The trail was initiated by Sheila Quin and edited by Mandy Leivers. The photographs were taken by Denice Stout. Many thanks to Dr David Hill for his advice.



British Lichen Society



AVON GORGE & DOWNS WILDLIFE PROJECT




BRISTOL NATURALISTS' SOCIETY

THE DOWNS Lichen Trail



Take a walk on the Downs



THE DOWNS Lichen Trail

The British Lichen Society

The Society was formed in 1958 to stimulate and advance interest in all branches of lichenology. The first society in the world entirely devoted to the study of lichens, it has many overseas as well as British members.

www.thebls.org.uk

The Bristol Naturalists' Society

The Bristol Naturalists' Society exists to stimulate a greater awareness of natural history and geology in the Bristol area. It is a thriving and friendly society with something of interest for everybody, young or old, professional or amateur.

Discover Your Natural World.

www.bristolnats.org.uk

Avon Gorge and Downs Wildlife Project

If you would like a copy of our leaflet 'Discover the wildlife of the Avon Gorge & Downs', or copies of our tree, meadow or bird trail leaflets please contact:

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The Avon Gorge & Downs Wildlife Project is a partnership of:

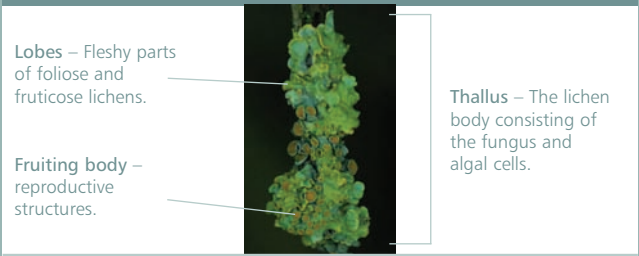


We are also working with the National Trust who manage part of Leigh Woods on the North Somerset side of the Avon Gorge.

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Discover the fascinating world of lichens

Parts of a lichen



Lichen identification

To help with identification, lichens are divided into three main forms characterized by their growth.



Crustose or crusty lichens
They are closely attached, as if part of the bark. They can only be removed with the bark.



Foliose or leafy lichens
The leaf-like lobes are closely or loosely attached to the bark and have a lower surface. There is a gap between the lichen and the bark.



Fruticose or bushy lichens
They are branched and shrub-like, attached to the bark at the base (holdfast).

Where to begin?

The map overleaf shows our suggested route around the Downs. The trail is marked on the map with an arrowed line. The lichens are growing on trees and each tree is marked with a numbered disc corresponding to a number below and on the map.

Please don't remove any of the lichens from the trees but instead, leave them for others to identify. If you use a magnifying glass or hand lens you'll see so much more detail – it really brings the world of lichens to life.

We hope you enjoy your walk!

1 Oak tree

This mature oak tree is in an open setting so it supports a varied lichen 'community'. Take some time to look around the tree. Notice that the lower branches are heavily encrusted with grey, green and yellow lichens. How many different kinds of lichen can you see?



Punctelia subrudecta
This grey foliose lichen has smooth lobes. *Punctelia* means 'dotted' and describes the powdery spots that you can see on the surface of the lichen.

There are several grey lichens here. *Punctelia* is the only grey one with rounded white dots.

With your back to the road and the oak tree, walk up the gentle slope to the hawthorn bushes on your left.

3 Oak tree

The trunk and lower branches of this large oak tree are shaded; some of the branches even touch the ground.

Look on the upper trunk and thicker branches for...



Flavoparmelia caperata
The striking yellow-green colour and wide, spreading nature of this lichen make it easy to recognise.

As it is sensitive to sulphur dioxide it has been under threat, but due to improvements in air quality it is now returning again. It has even been found in central London (e.g. in the grounds of Buckingham Palace).

Come out from under the tree canopy and find another disc on the smaller branches. Search among the many lichens here for...



Physcia aipolia
The smaller thallus of this lichen is pale grey. Notice its characteristic dark grey or black, fruiting bodies with grey margins.

With your back to the oak tree look around for the blackthorn thicket, ahead and to your left.

4 Blackthorn bushes

These fruticose lichens are well camouflaged! So, how good an observer are you?

Watch out! There are bacteria that grow on blackthorn thorns which can cause a nasty infection if you get pricked. It's best not to touch the thorns and please mind your eyes.



Ramalina farinacea
This lichen has pale grey-green, flattened, narrow, hanging branches.

Notice the characteristic oval powdery spots.

This *Ramalina* is the commonest of the British species and most tolerant of air-pollution.



Evernia prunastri
The branches are grey-green above and lighter beneath (distinguishing it from *Ramalina* which are the same colour on both sides).

An extract of *Evernia* is used in perfume manufacture.

With the thicket behind you, walk 85m to a large ash tree which is ahead and to the right. It's at the end of a big clump of trees.

5 Ash tree

Look on the lower branches of this mature ash tree for these crustose lichens...

2 Hawthorn

Look on the smooth bark and contorted twigs of this hawthorn for an abundance of *Xanthoria parietina* and *Physcia tenella*. Both of these lichens are common and widespread.



Xanthoria parietina
This foliose lichen is bright yellow or orange (greenish yellow in the shade).

Orange fruiting bodies are often seen on the thallus.



Physcia tenella
This pale grey lichen has 1 mm wide, raised lobes which have upturned powdery tips.

Look carefully (with a lens) for the tiny black-tipped whiskers on the lobe edges.

Continue up the slope keeping the beech hedge (surrounding the Ranger's pound) on your left. Follow the path on the left to cross the open grassy area and walk 200m towards the line of trees ahead of you. Cross the ditch (the remains of old lead workings). Ahead and to your left you'll see a spreading oak tree. Wheelchair users – you may find the ditch a bit steep. There is a suggested diversion indicated on the map.

Lecidella elaeochroma

The grey thallus is smooth to slightly granular. *Lecidella* means 'little disc', named after its black, raised fruiting bodies.



Lecanora chlorotera

The thallus of this lichen is grey with numerous crowded, brown, disc-shaped fruiting bodies.

Lecanora means 'beautiful small bowl', from the shape of the fruiting bodies. The discs look rather like little jam tarts!



Walk to the left side of the ash tree. Straight ahead, 150m away, are five ash trees planted in a circle. Pass through the circle and head for the hawthorn bush to the right of the exercise bar.

6 Hawthorn

Look at the twigs and branches. How many of the lichens already seen on the trail can you find and name? Also look for a different one....



Ramalina fastigiata

It has a pale grey-green, erect, tufted and branched thallus. The lobes are often swollen with fruiting bodies at the tip.

You can either finish here or walk back to the oak tree at the start. Now you've got your 'eye in', can you discover any other lichens you haven't seen yet?