

Balrath Wood

An introduction to Irish woodlands

Notes for Teachers

This teachers' pack has been specially compiled to complement a visit to Balrath Wood by younger school-goers.

Visit **www.meath.ie** for further information.

Supported by Meath County Council and the Tree Council of Ireland

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Balrath Wood

Co. Meath

Notes for Teachers

INTRODUCTION

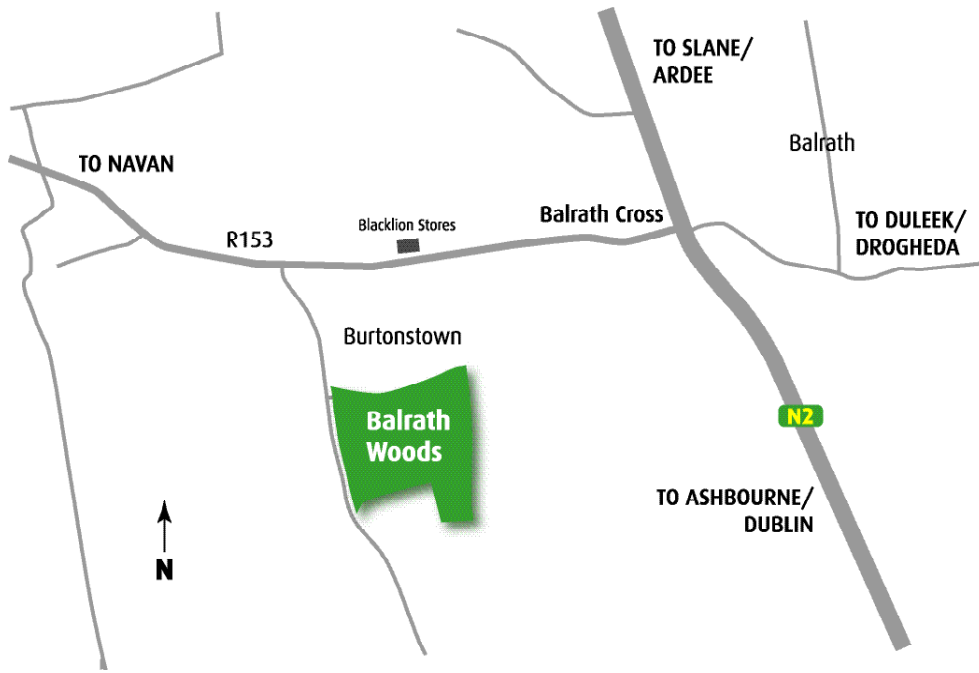
These notes have been compiled to aid a class visit to Balrath Wood in Co. Meath. They are aimed at Primary School classes, notably 3rd, 4th, 5th and 6th classes, although many of the activities can be tailored for younger and older school-goers.

It is suggested that these notes are printed out by the teacher prior to a visit to Balrath. The main focus of the notes is to guide the teacher and the class through the Nature Walk. This walk is clearly sign-posted within the wood, and at intervals, numbered marker posts have been installed to allow the group to pause briefly and answer some set questions. Teachers are encouraged to add their own material, research and activities depending on their group size, age, curriculum requirements, etc.

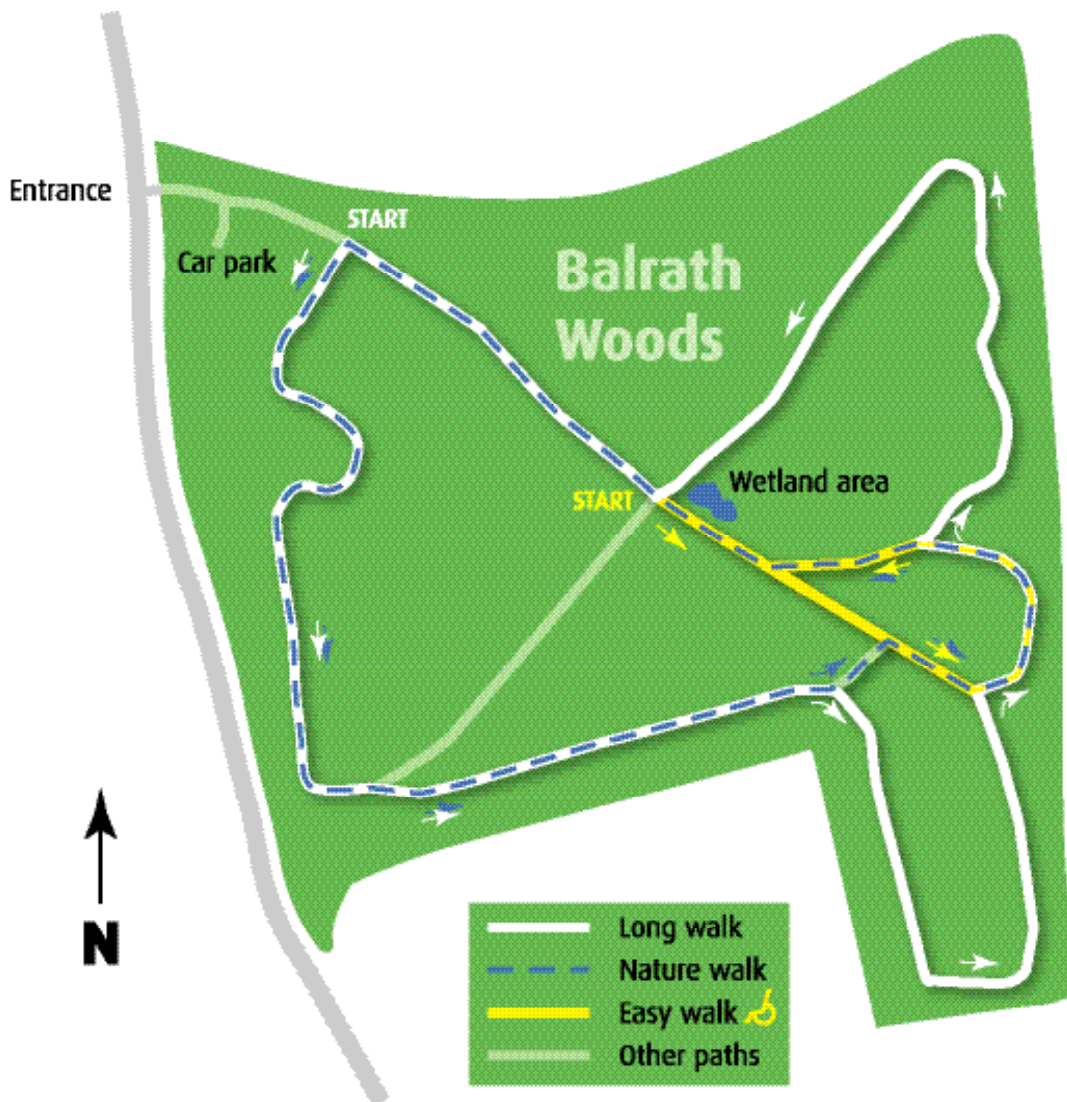
Balrath can be enjoyed throughout the year. However, from a classroom point of view, the ideal time to visit Balrath is in late summer/early autumn when there are plenty of leaves and some fruits/nuts on the trees (to help with identification), some wildflowers still in bloom and also some insect life to be seen. Spring and summer (prior to the summer holidays) are also good times, especially to see woodland wildflowers in their natural habitat. To fully appreciate the cycle of flora and fauna in an Irish woodland, several visits throughout the year are recommended, if possible.

Underlined words (e.g. native) will be explained in a glossary at the end of the notes.

The Tree Council of Ireland has a wide range of excellent source material which will give teachers a number of options in terms of activities and background knowledge. Several areas mentioned in the Balrath Wood Teachers' Notes reference set texts published by the Tree Council. These are freely available from their website (there may be a small postage fee). These notes, together with a visit to Balrath, should give teachers and pupils an exciting introduction into Irish woodlands. Of course, this can only represent a brief glimpse into some aspects of Irish flora and fauna, so further study and field trips are encouraged.



GETTING TO BALRATH WOODS



Woodlands

INTRODUCTION TO WOODLANDS

Woodlands are the natural state of Ireland's landscape. Left alone, trees would eventually cover much of the country as they did thousands of years ago. Native species would have included oak, ash and yew, for example. As trees were cleared for farming and later, industry, our ancient woodlands vanished. Today we have the lowest percentage of wooded area in Europe.

Much of Ireland's landscape and the plants and animals (flora and fauna) that live here only arrived in the last 10,000 years, at the end of the last Ice Age. Because of this, Ireland does not have a huge diversity of species compared to Britain or the rest of Europe.

There are many different types of woodland in Ireland. What we think of as a typical wooded area may be a relatively recent plantation. It may include several species such as beech, chestnut and sycamore that are not considered native trees, even though they have been with us for centuries.

TYPICAL WOODLAND STRUCTURE

A mature broadleaf woodland will typically be made of four layers (see figure 1). The top layer is the canopy which includes all the leaf foliage of the larger trees. This blocks out light in summer and restricts growth of plants underneath. The layer below is the shrub layer or understorey. Here we can find smaller trees such as hazel and holly competing for light and space. Below that is the field layer which generally contains any grasses, flowers and creepers such as ivy, and at the very bottom is the ground layer where we can find mosses and fungi, decomposing leaves, rotten timber and most likely, a healthy insect population at work.

In a mixed woodland, and especially in a young wood such as Balrath which has yet reached maturity, it is not always possible to see these layers. The best place is along the Nature Walk near The Great Beech, and further around this route to the east side of the woods where the trees are a little older.

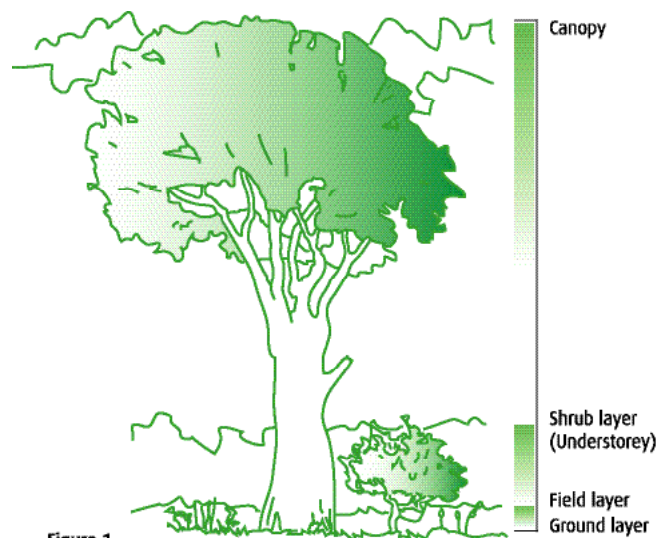


Figure 1

BRIEF HISTORY OF BALRATH

Balrath Wood (also known locally as Knockcomra) was once part of the larger Somerville estate. It was a fine example of mixed broadleaf woodland. Some of the original trees still remain but most of this 50 acre (20 hectare) wood was replanted in 1969 with a number of species including oak, beech, ash and spruce. Currently it can be described as mixed conifer/broadleaf woodland. The Tree Council of Ireland and Meath County Council are now responsible for the woodland management and the upkeep of the wood as a place that everyone can learn from and enjoy.

THE NEIGHBOURWOOD SCHEME

Balrath Woodland receives funding from the Forest Service (Department of Agriculture and Food) under the NeighbourWood Scheme. This scheme is available to encourage the planting and development of local woodlands for public access, recreation and enjoyment. These woods can then operate as 'outdoor classrooms'. People of all ages can appreciate and enjoy the trees and the various habitats created in woodland, and local schools can spend time learning about trees and other woodland species of plants and animals, and the importance of woodland management. The NeighbourWood Scheme is funded under the National Development Plan 2000-2006, with support from the European Union.

COMMON SENSE RULES

Balrath Wood is open to the public all year round. Enjoy your visit.

We ask visitors to respect the facilities, the flora and fauna, to keep dogs under strict control and to co-operate in keeping the woods free from litter, or lighting fires.

Leave only footprints and take only memories.

The Nature Walk

THE NATURE WALK – THE QUESTIONS EXPLAINED

As Balrath has been designed as an Outdoor Classroom, the Nature Walk has been specially chosen to demonstrate some of the aspects of woodlands and woodland management to younger school-goers. At various points along this route, numbered marker posts will show the visitor certain features, and pose certain questions.

The Nature Walk Numbered Markers:

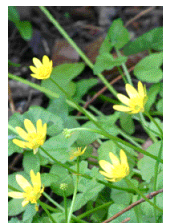
1. At this early stage of the walk, we can already see a good mix of trees. Can you find an ash tree?
You will need a reasonably good poster or book with a leaf key to help you with this. Ash leaves are easy to identify as they are long and thin and are arranged opposite each other on the stalk. The bark is often grey and mottled, and quite smooth on younger trees. The buds are black and are arranged in opposite pairs along the twig.



2. At certain times of the year, this drainage ditch is full of water. Can you name at least two types of pond-life you might find here?
You may see pond-skaters on the water surface. These are four-legged insects that 'skate' on the water tension. There may be whirligig beetles, backswimmers, diving beetles, various larvae (dragonfly, for example) and possibly frog spawn (in late winter/early spring), tadpoles or frogs.

3. Most woodland flowers can be seen in early spring. Why do you think this is? Clue: there are very few leaves on the trees at this time of year.

Woodland flowers make best use of the available light. Once the leaves are out on the trees overhead, light is dramatically reduced, and the flowering season for these plants is over. Typical woodland flowers include lesser celandine (right), wood anemone and primrose.



4. Down in the ditches, you can see mosses and ferns. These are the types of plants that like damp and dark conditions. Can you name one type of fern?

There are several types to be found in Balrath. Common ones are the male fern and the buckler fern. Depending on class age, it may useful to explain how most plants reproduce, and how ferns do this without flowers, pollen and seeds.

5. Can you find at least two other species of tree in this area that we haven't already named?
These could be hazel (right), oak, birch, Norway spruce or sitka spruce.



6. The Great Beech. This is the oldest tree in Balrath Wood. However, it is unlikely that it is much more than 200 years old. Beech can reach up to 40 metres in height. Long ago, thin sheets of beech wood were used for writing on. The name beech comes from an Old Norse word 'buche' and it is suggested this gave us the word for 'book'. Beech are not native trees to Ireland, and have been introduced since the 17th Century.

This point is an ideal opportunity to stop and do one or two of the activities suggested in the Tree Council pack. Suggested activities include bark rubbings and estimating tree height. You may also wish to discuss the concept of 'natives' and 'non-natives' in the tree world.

7. Another interesting non-native tree that was deliberately planted in Balrath can be seen here. Can you spot it? Clue: it has large, oblong leaves with saw-tooth edges, and round, green prickly fruit. Also, the woods are thinner here. Do you notice any difference in the type of plants you can see in and around the trees?

The tree is the Spanish chestnut. This part of the wood is very young and has been thinned deliberately to encourage growth. You may notice some smaller trees, such as hazel, amongst the taller varieties. There may also be some wildflowers amongst these trees, such as rosebay willowherb, depending on the season of your visit.



8. One of the taller tree species in Balrath can be found here – the poplar. Can you see it? It is tall and thin with heart-shaped leaves.

There are at least three poplars here near the gateway. They are taller than any of the trees around them. Poplars (in this case, Lombardy Poplars) are typically tall and thin with their branches sweeping upwards. The leaf is shown here to the right.



9. You are now at the south-western corner of the wood. The path divides here – left will bring you to the central cross area in the middle of the wood. At the gate, you can look out and see Skryne Hill. What famous heritage landmark can be found beyond Skryne?

The Hill of Tara. Teachers may wish to incorporate some short history comments here.

10. Along this path, alder has been planted. Can you see them? This area of the woodland is very young, and the trees are not fully grown. Keep an eye out underfoot. During spring and summer you may find some interesting flowers. What can you see?

Both left and right are heavily planted with alder. The leaves are quite distinctive and the branches are often decked with small, dark 'cones'. Alder bark has a purplish/brown colour and the twigs have a purple hue. Wild orchids have been seen along this path.



11. This part of the wood is older. The trees are taller. Can you find a horse chestnut tree?

Horse chestnut leaves are very easy to spot, and as these trees grow quite quickly they are some of the largest in Balrath. In the autumn, the prickly 'conkers' are also easy to find both on the branches and on the ground.



12. In summer, you should be able to identify the canopy layer. Can you find it?

As Balrath is a young wood, there is not a clearly defined canopy layer, but look for a difference between the taller, older trees and the younger trees beneath.

13. Below the canopy layer is the understorey. Can you name two trees you might find in this layer?
Can you see these trees?

Hazel, holly, alder and possibly birch.



14. Along this part of the path, you may see some more flowers, depending on the time of the year. You may also see some butterflies and other insects. Can you name two of each you might expect to find here?

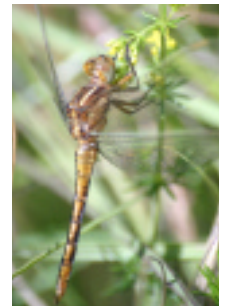
This depends on what time of year you visit Balrath. Spring flowers include lesser celandine, dog violets and primrose. Later in summer you may find lady's bedstraw, germander speedwell (shown here), wood avens, etc. Some orchids have been found along one or two pathways.



Butterflies may include meadow brown, speckled wood, tortoiseshell and red admiral, etc. There may also be damselflies and dragonflies in the air. Amongst the grass you may find beetles, harvestmen and other spiders, and 'daddy longlegs'. Closer inspection at ground level might reveal smaller insects such as earwigs, woodlice, centipedes and millipedes, especially amongst the leaf litter and under rotting timber.

15. Any wetland area is important for wildlife. Can you suggest why?

Wildlife fauna (mammals, birds, insects, etc.) all need water to survive. Larger mammals in Balrath will use the wetland area to drink. Birds may use the reeds and marginal plant growth to make their nests and rear their young. Many insects lay their eggs in the water. Examples of this include dragonflies (shown here) and mayflies. The larvae of these insects spend the early parts of their lives under water before they emerge. In turn, the abundance of insects around the water attracts birds. These examples of food chains and webs can be discussed amongst the students, who should be encouraged to think of simple food chains with three or four species. One example of this would be a leaf being eaten by a caterpillar, which is then eaten by a songbird, which may then be the target of a bird of prey, such as a sparrowhawk.



FURTHER IDEAS

The Nature Walk is designed to use features and species that exist naturally in Balrath. Obviously, the time of year of your visit will play a huge factor in what you may expect to see, and nature may or may not decide to be kind in terms of the weather and what species it puts on display for you. On one visit, you may stumble upon wild orchids whilst buzzards fly overhead, other times you may have to make do with a primrose and a pigeon!

The various stages of the Nature Walk will not cover all aspects of Irish woodland. Teachers are encouraged to plan their visits ahead of time, and to make sure they have with them clear guide books on both animals and plants. Some suggested material is listed later. Wider topics for discussion should also be introduced at certain times. These may include the various types of woodland in Ireland, how woodlands have vanished over the centuries, the industrial uses for timber (e.g. as fuel for iron and glass production in the past) and the craft uses for specific types of timber (e.g. hazel for fencing, willow for baskets, oak for structural work, etc.). You could also touch on woodland management and the importance of managing woodlands.

There are no set rules for what you can discuss on a visit to Balrath; it is hoped that a trip to the woods will spark of an interest in Irish woodlands and all aspects of nature and the environment. Hands-on activities are particularly to be encouraged, especially the harvesting of tree seeds and the subsequent germination and planting of the young seedlings. This is a particularly satisfying project for younger classes to undertake. It encourages on-site visits and tree identification, it introduces younger classes to the concepts of plant reproduction, and it offers a reasonably long-term project that can continue in the classroom.

The end results may well be around longer than the pupils and teachers alike!

Visit www.treecouncil.ie for more details and some excellent resource material, and also www.enfo.ie for a series of information leaflets and posters.

GLOSSARY OF TERMS

This is not intended to be an exhaustive glossary of terms related to woodland and other aspects of Irish natural life.

- ancient woodlands typically, woodlands that have been in existence for hundreds and sometimes thousands of years; possibly tracing their continuous growth back to the first woodlands that appeared after the last Ice Age. Their protection and conservation is vital.
- broadleaf trees that typically lose their leaves in the autumn (also known as deciduous). The opposite of coniferous trees.
- canopy the top layer of a woodland; in a typical mixed broadleaf woodland, the leaf growth in the canopy layer blocks out light to the ground below.
- fauna a scientific name for animals (see flora).
- field layer the general area in a woodland below the shrub layer and above the ground. Typically this layer contains flowers and grasses.
- flora a scientific name for plants (see fauna).
- foliage leaves.
- ground layer the layer in a woodland that contains mostly decaying leaves (also known as 'leaf litter'), twigs, mosses, fungi, insects, etc. Some guide books also include the field layer within this term. In dense woods, very little grows beneath the canopy and understorey, and so a field layer is not identifiable. Instead the ground layer will be covered in leaves and other decaying matter for most of the year. In purely coniferous woods, a bed of needles covers the ground all year round and allows for no other growth to take place.
- habitats the places in which plants and animals live. A woodland can be described as a large habitat.
- mixed broadleaf woodland a woodland that has a variety of broadleaf (deciduous) trees. In Ireland these could be ash, beech, oak, birch, hazel, etc.
- mixed conifer/broadleaf woodland a woodland that has a variety of broadleaf (deciduous) and coniferous trees. In Ireland these could be ash, beech and oak, with pine, spruce, etc.
- native in this context, a tree that grew in Ireland after the last Ice Age and wasn't introduced. As an example, oak is considered native, but beech is not.
- plantation. . . . a woodland that has been planted, not grown naturally.
- shrub layer the layer in a woodland below the canopy, and above the field layer. It contains the smaller trees such as hazel and holly.
- species a specific plant or animal. For example, there are several different species of oak trees in Ireland, one of which is the Sessile Oak. The Sessile Oak is therefore a 'species' of oak tree. Typically, no species will cross-breed with another. This explains why we have dozens of varieties of songbirds in our woods, fields and hedgerows, such as great tits, blue tits and coal tits, but they never mate with each other and so remain as separate species.
- understorey another term for the shrub layer.

USEFUL RESOURCES

There are many excellent resources for information both on the internet and in print. The following are suggestions for where to start. It is recommended that classes bring good quality guidebooks with them on a trip to Balrath. These should have good photographs and/or illustrations to help with the identification of plants and animals.

Lá na gCrann - Tree Day: A Manual on Trees for Primary Schools

published by the Tree Council of Ireland.

An excellent all-round resource for primary schools with work-sheets designed for photocopying. Laid out in a module format within a ring binder, this is the ideal pack for any school. It covers a wide range of topics on woodlands and is linked to the new SESE Syllabus. All the worksheets have explanatory teachers' notes at the back. Visit www.treecouncil.ie for more information and downloads.

Native Trees & Forests of Ireland

published by Gill and MacMillan

Written by David Hickie with photographs by Mike O'Toole. An authoritative guide for the more advanced reader.

Complete Irish Wildlife: Photoguide

published by Collins

All you will ever need to help identify Irish wildlife. Over a thousand images of plants and animals with clear, readable text.

When choosing guide books, try and avoid general ones, or ones that cover all of Europe. Where possible, buy books specifically on Ireland, or Ireland and Great Britain. These books will have less species in them to contend with, and make identification easier. The Collins Press have several excellent titles on Irish wildlife, as have Gill and MacMillan.

Web links

An Taisce. www.antaisce.org
Birdwatch Ireland. www.birdwatchireland.ie
Conservation Volunteers Ireland www.cvi.ie
Coillte www.coillte.ie
Crann www.crann.ie
Department of the Environment. www.environ.ie
ENFO. www.enfo.ie
Environmental Protection Agency. www.epa.ie
Just Forests. www.justforests.org
Native Woodland Trust. www.nativewoodtrust.ie
People's Millennium Forests www.millenniumforests.com
Pro Silva www.prosilvaireland.org
The Heritage Council. www.heritagecouncil.ie
The Irish Wildlife Trust www.iwt.ie
The Tree Council of Ireland www.treecouncil.ie
Woodlands of Ireland. www.woodlandsofireland.com

Visit

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