

The south west's rainforests

Clean air and a warm, damp climate in coastal and upland parts of the south west mean that some of the oldest woodlands in the region (known as temperate rainforests or Atlantic woodlands) are home to some beautiful, fascinating and sometimes very rare lower plants. These lower plants – the ferns, mosses, liverworts and lichens – are ancient. They pre-date humans, flowering plants, trees and even dinosaurs. They are the hidden gems of woodlands which these Branching Out guides will help you to discover.

You can learn more about Atlantic woodlands, mosses, liverworts, ferns and lichens in the other Branching Out guides:

- Am I in a Rainforest?
- Discover Lichens
- Discover Mosses and Liverworts

Want to get involved or find out more?

Help us to learn more about the condition of the region's Atlantic woodlands by taking part in our **Rapid Woodland Assessment**
<http://tiny.cc/PlantlifeRWA>

Look for **Building Resilience in South West Woodlands** on Facebook to keep up to date with project news and events.

Plantlife

Branching Out

Discover Forest Ferns

Plantlife

HRH The Prince Of Wales is our Patron

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 Plantlife: saving wild plants

 @Love_plants

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We are Plantlife

For over 25 years, Plantlife has had a single ideal – to save and celebrate wild flowers, plants and fungi. They are the life support for all our wildlife and their colour and character light up our landscapes. But without our help, this priceless natural heritage is in danger of being lost.

From the open spaces of our nature reserves to the corridors of government, we work nationally and internationally to raise their profile, celebrate their beauty and to protect their future.



You will have seen ferns on your walks through woods, but have you ever stopped to take a closer look?

Have you noticed that they don't all look the same?



With this guide you will learn more about the south west's woodland ferns, how to identify some of them and about their very... very... very... long history.

Look out for these symbols

-  **Read** this to unlock some information
-  **Touch** or look closely
-  **Explore**





The long history of ferns

Can you believe how long ferns have been on the earth compared with people?

Devonian period – 360 million years ago.

Ferns first appear, following on from smaller mosses. Ferns were among the first plants to develop roots and a vascular system (a lot like our veins) that move water around the plant. This meant they could grow much bigger and survive on drier land.



Cretaceous period – 125 million years ago.

Plants with flowers evolved. Imagine woodlands of huge conifers and ferns with *Tyrannosaurus rex* stomping around in them!

Some of the coal that is used today is ancient fossilised ferns from before the time of the dinosaurs.

200,000 years ago modern humans lived on earth.

Ferns today are very much the same as they were when they first developed 360 million years ago. We know this from looking at fossils.

Jurassic period – 201 million years ago.

Ferns, horsetails and conifer trees dominate the plant world while dinosaurs roam the earth.



The world has changed a lot since the dinosaurs, but the Royal fern (which is found as a fossil from that time) still grows, unchanged in parts of the south west.

7 million years ago early humans lived on earth.

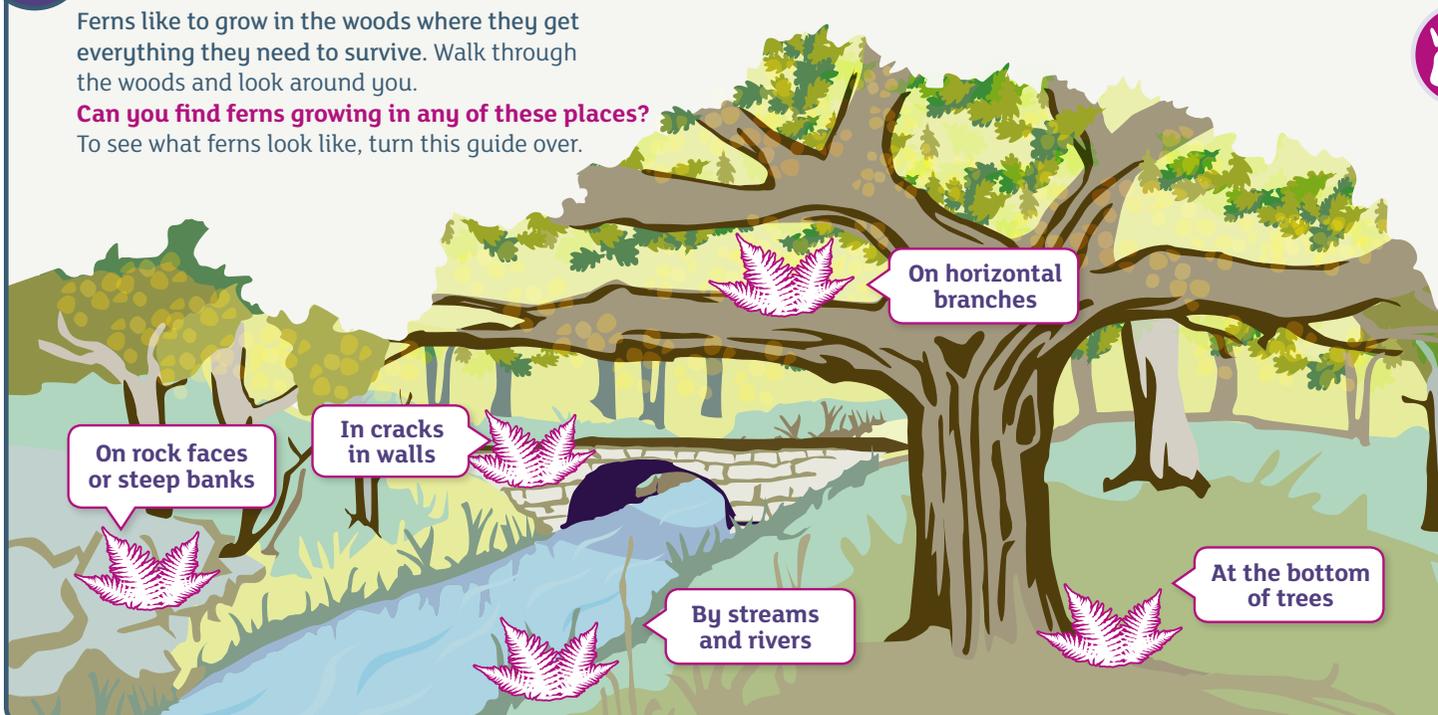


Finding ferns

Ferns like to grow in the woods where they get everything they need to survive. Walk through the woods and look around you.

Can you find ferns growing in any of these places?

To see what ferns look like, turn this guide over.



Go to three of the different places you've found ferns growing.

Pick three words to describe what each place is like.

Dry

Cool

Shady

Bright

Wet

Hot

Exposed

Sheltered

Warm

Moist

Windy

Still

Parched

Damp

Boggy

Are all of the places the same or do different ferns like to grow in different kinds of places?

Choose your own words if none of these fit.



Parts of a fern – can you find them all?

Not all ferns are the same, so take a look at a couple of ferns to see if you can find all of the different parts.

FronD

This is the fern's leaf. It has a stem (called a stipe), which is below the leafy part of the frond.

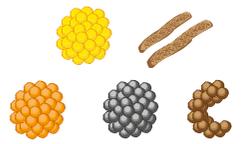
Blade

The leafy part of the frond



Sori

This is where the fern makes spores which it releases to make new ferns. Sori are clusters of spore-producing cases, and they come in lots of different colours and shapes.



Pinnae

Pinnule

Stipe

The bottom part of the fern's stem

Pinnae, pinnules and pinnulets

The smaller leafy parts of a frond have different names depending on the number of times the frond is divided up (see next page). The biggest sections are called pinnae, next are pinnules and the smallest are pinnulets.

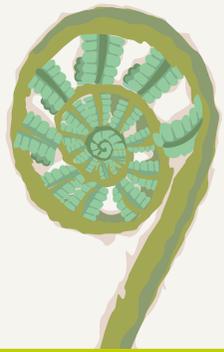
Scales

Some fern stems have raindrop-shaped, papery scales. Carefully take one off. Some scales have brown marks on them that can help you to identify the fern.



Crozier

Young fern fronds curl up tightly, opening up when they mature. They look like a bishop's staff or a shepherd's crook (which are also known as croziers).



Focus on fronds

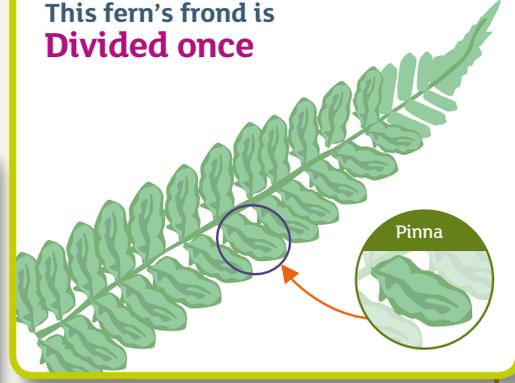
Now that you know where ferns grow and know about their different parts, you can start identifying some.

FronDs are all different. Some are solid and some are broken up into smaller bits that look like mini leaves (pinnae).

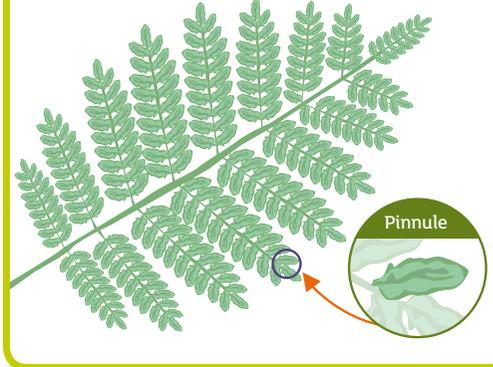
If a fern's frond looks like this, it is **Undivided**



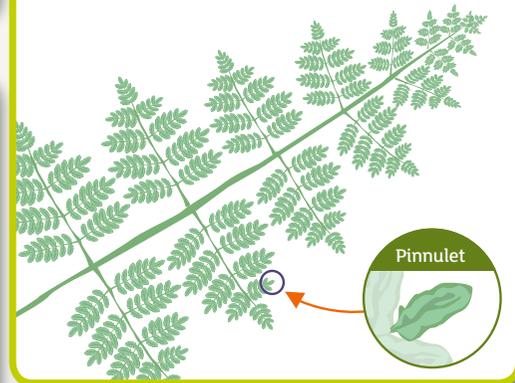
This fern's frond is **Divided once**



This fern's frond is **Divided twice**



A few ferns, like bracken, can be **Divided three times**



Now identify some woodland ferns using this **Identification Checklist**



Divided once

Maidenhair spleenwort *Asplenium trichomanes*

Tricho is from the Latin for 'hair', which describes the thin hair-like stems.

IDENTIFICATION GUIDE

- Tiny and delicate fern
- Grows in rocky places like old walls, bridges and rock faces
- Has rounded leaflets and a thin, wiry black stem. The leaves brush off easily and the bare stem looks a bit like hair



Hard fern *Blechnum spicant*

Spicant means 'spiky'

IDENTIFICATION GUIDE

- Fronds are narrow, rigid and glossy
- On the same plant, fronds can look like:  this  or this
- Grows in a clump with lots of fronds together and is often found growing on the forest floor in shady woods



Polypody

Polypodium species

Poly pody means 'many feet' and describes the rhizome – creeping root – from which many fronds grow

IDENTIFICATION GUIDE

- Small fern
- Grows on tree branches, in walls and at the base of trees
- Fronds will grow individually and spaced widely apart



Divided twice

Lady fern *Athyrium filix-femina*

In Latin, *filix* means 'fern' and *femina* means 'lady'

IDENTIFICATION GUIDE

- A big fern with fronds growing to over 1 metre tall in a 'shuttlecock' shape (fronds growing from one point in the ground and splaying outwards)
- Pinnules have a very delicate and feathery appearance
- Often grows beside streams and in wet places



Male fern *Dryopteris filix-mas*

Pteris comes from 'pteron' in Greek which means 'feather'

IDENTIFICATION GUIDE

- A big fern with fronds growing to over 1 metre tall in a shuttlecock shape
- The frond's pinnules have flattish ends and smooth edges
- May have dense scales. The golden scaly male fern has golden brown scales that run the whole length of the stem



Undivided

Hart's-tongue fern *Asplenium scolopendrium*

Scolopendrium means 'centipede'. Look at the sori on the frond underside. What do they remind you of?

IDENTIFICATION GUIDE

- Might find black sausage-shaped sori on the back of fronds
- Fronds are shiny and smooth
- Often found on walls and earth banks, as well as growing on the ground

