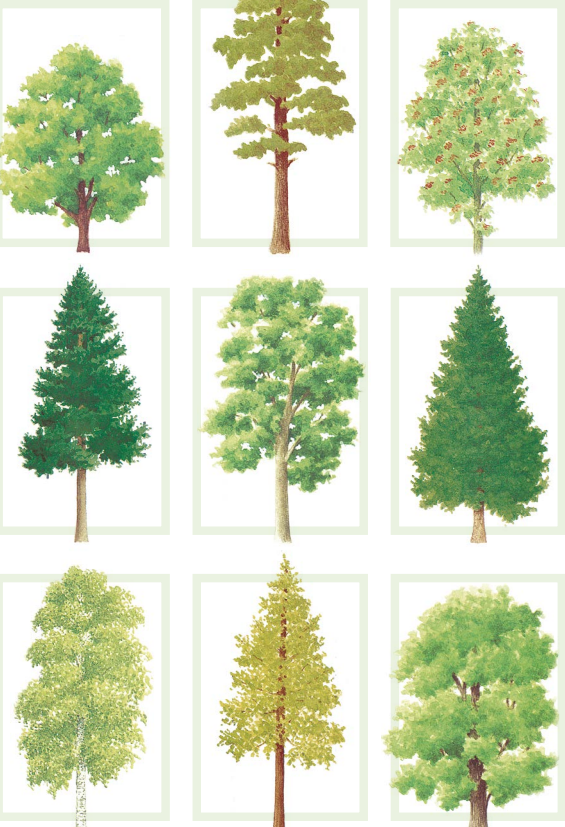


An easy guide to forest trees and their uses



An illustrated guide to the identification of trees commonly found in Britain's forests and woodlands



An easy guide to forest trees and their uses

This guide lets you find out more about the trees found in the forests and woodlands of the British Isles. It helps you identify some of the most common species and shows how important they are in our day-to-day lives.

If you need further information about the forests and woodlands near you, go to:

- forestryengland.uk
- forestryandland.gov.scot
- naturalresourceswales.gov.uk



Why do we need trees?

Britain's forests and woodlands are a valuable natural and renewable resource providing wood and timber for use in our daily lives.

Wood is a wonderful natural material. It is completely renewable and all parts of the tree can be used.

The roots, bark, and branches of the tree have many uses ranging from fuelwood to the manufacture of medicines, and from chips for playground surfaces to mulch for flowerbeds.

Although we use forests for our timber needs they provide so much more. The complex forest ecosystem is a home and a source of food for a wide variety of plants and animals. This in turn gives us a valuable educational resource as well as a wonderful place for recreation. All these link together and help to define the landscape of our countryside.

Trees also help keep the world healthy by trapping carbon dioxide and producing oxygen. This is why forests are often called the lungs of the earth.

Imagine a world without trees

It's not just timber that we get from trees, as this list shows:

- Boards
- Boats
- Books
- Bowls
- Brooms
- Brushes
- Buildings
- Cartons
- Chippings
- Clogs
- Clothes
- Coffee
- Coffins
- Cork
- Decoration
- Fences
- Firewood
- Fruit
- Furniture
- Labels
- Medicine
- Mulch
- Musical instruments
- Nuts
- Paper
- Pegs
- Photographs
- Posts
- Roofing 'felt'
- Rubber
- Spoons
- Sports equipment
- Stamps
- Tea
- Toilet seats
- Tools
- Toys
- Wrapping paper

What do you use? Can you add any more things to the list?

Ash

Fraxinus excelsior

Supposed to have mystical and medicinal properties, the ash is a widespread native tree whose wood is a natural shock absorber.

It takes a very heavy blow to shatter a piece of ash, making it ideal for tool handles such as axes and spades, and for oars, flooring, hockey sticks, and rackets.

For some of these uses it has now been replaced by hickory from America, which is an even better shock absorber.

Ash has been used for skis, coaches, carts, and farm implements. It was once thought to have healing powers and its excellent firewood was burnt to drive out evil spirits. In Norse mythology the mighty ash was the tree of life.

The single winged seeds, called 'keys', grow in bunches

Compound leaves are arranged in pairs

These tall, domed trees can reach up to 40 m

Natural range: Europe, Asia Minor, and North Africa

Beech

Fagus sylvatica

A tree characteristic of chalk downlands but growing well on light soils elsewhere.

Sometimes called 'The Lady of the Woods', this beautiful tree, which is seen at its best in the beech woods of southern England, arrived in this country during the Bronze Age.

In autumn the leaves turn first to yellow then to bronze

The husks split to release two triangular seeds or 'nuts'

The mature tree has a dense canopy made up of many branches and can grow up to 40 m

Its dense shade usually keeps the forest floor clear of undergrowth.

Its easily turned, fine-grained and knot-free wood is ideal for furniture making, especially for chairs. In the past the wood was used for rifle butts, brush backs, and for making shoe heels and lasts.

Natural range: Europe, not Scandinavia

Silver birch

Betula pendula

Despite its graceful appearance, it is one of Britain's hardest trees.

A natural pioneer species, which seeds itself freely and is able to colonise open land. It is found throughout Britain on light, dry soils and is a valuable conservation species.

Catkins break into scales and small winged seeds in autumn

Usually about 15 m high with drooping branches

Its pale, smooth timber is a hardwood whose uses include plywood production, brush backs, toys, and reels. On a lesser scale, the twigs are cut to make besom brooms and horse jumps. In the past its sacred properties made the birch useful for expelling evil spirits from delinquents!

Triangular leaves which turn yellow before falling

Natural range: Northern Europe

Wild cherry

Prunus avium

A fast-growing deciduous native found in mixed and beech woodlands throughout Britain.

Also known as 'gean' it is used as a rootstock for more productive fruit bearing varieties. Its pinkish brown wood is used to make fine furniture, musical instruments, veneers, and smoking pipes and is prized for turned items such as bowls.

Scented white flowers are followed by small green cherries which turn red then purple when ripe

The flowers, which can appear before the leaves, produce an almond-like scent. Birds quickly strip the fruit off the trees and spread the seeds by dropping or swallowing them.

The tree grows up to 24 m tall with spreading lower branches and the rest pointing up

Natural range: Europe, North Africa and West Asia

Sweet chestnut

Castanea sativa

The Romans introduced this tree into Britain to produce the nuts which were ground up and made into 'polenta' a staple food of the legionnaires.

Roasted sweet chestnuts are tasty and nutritious, but most are imported, as the British climate is too cold for them to ripen properly.

Some catkins have male and female flowers on the same stalk. The remains of the male catkin stay attached to the husk until it falls

The yellowish brown timber is strong and good for joinery and cabinet making, coffin boards, and fencing. It used to be used for pit props. In south-east England it was widely planted for hop poles, and is often coppiced for fencing.

The husk splits to release up to three nuts in the autumn

Broadening with age, the tree can reach up to 40 m

Natural range: Mediterranean and Asia Minor

Hazel

Corylus avellana

Hazel is the ideal coppice tree, in that every few years it can be cut back to a 'stool' at ground level so that it produces a cluster of straight flexible stems that can be harvested.

In October ripe nuts are enclosed in leafy bracts

Hazel leaves, which are placed alternately along the twigs, open in late April after the catkins have dispersed their pollen through leafless woods

In late winter male flowers form 'lambtails' catkins

In the past, when a countryman wanted a piece of wood this was usually provided by his hazel copse. One seventh of the wood was cut each year to give a constant supply of poles for firewood, 'wattle and daub' building, thatching spars, fences, and garden plant supports. A small hazel coppice industry thrives today.

Rarely allowed to develop as a tree, it thrives as a shrub, but it can reach 7 m if left uncut

Natural range: Europe to 68°N, but not Shetland; Asia Minor

Small-leaved lime

Tilia cordata

Since ancient times the lime tree, which has no relation to the citrus fruit, has been used for shade and lowland shelterbelts. It was also planted along village streets as a holy tree to protect against evil spirits.

Its pale cream coloured wood is fine textured and resistant to splitting, making it ideal for turning and carving as can be seen in the works of Grinling Gibbons.

The sweet smelling flowers attract bees, other insects, and birds including woodpeckers

The tree has downward arching branches and grows to 35 m

Unlike other limes, the fruits are neither ribbed nor hairy.

As it does not warp, lime wood is used for the keys and sounding boards of pianos.

Natural range: Northern Spain to Caucasus and Siberia

Oak

Quercus robur

Held sacred by the Druids, pedunculate or English oak has always been important.

From early days, its strong and durable timber was found to be ideal for shipbuilding and for making timber frames of buildings.

The female flowers are on stalks, a feature characteristic of the English oak that distinguishes it from the closely related sessile oak (*Quercus petraea*).

Acorns are carried on long stalks or 'peduncles'

The tannin in its bark was used for tanning leather. Even the sawdust was, and still is, used for smoking food. Oak is now used for furniture and barrels and is also planted for its conservation value. In western areas sessile oak is the more common species.

The bark becomes fissured with age

Most oaks do not produce acorns until they are over 50 years old

A broad spreading tree reaching up to 30 m in Britain

Natural range: Europe and Asia Minor

Rowan

Sorbus aucuparia

Often called the 'mountain ash', although no relation to the ash, rowan is found higher up mountains than any other native tree.

It was often planted outside houses and in churchyards to ward off witches. Its strong flexible wood was used for making tool handles and sometimes for longbows. The red berries have a high vitamin C content and were made into a drink to combat scurvy. They are still used today to make a jelly to accompany meats.

The compound pinnate leaf usually has 11-15 toothed leaflets which turn red in autumn

Flat heads of cream coloured heavily scented flowers

The berries ripen to red and provide good autumn feeding for many birds

A graceful narrow tree up to 10 m

Natural range: Northern Europe

Sycamore

Acer pseudoplatanus

Brought from France in the Middle Ages, the sycamore seeds profusely. It was often planted to shelter and shade farm houses and can withstand salty winds.

The pale cream timber is usually without a marked grain.

As it does not stain or taint food and stays smooth after scrubbing, it was popular for kitchen surfaces and utensils. Its ability not to stain cloth meant it was ideal for textile rollers. Sycamore timber is still in demand with finely grained pieces highly valued for making violins and for veneers.

The smooth grey bark develops rough, flat surface plates that fall away to reveal orange-brown bark below

The leaves often have 'tar spots' caused by the fungus Rhytisma acerinum

A broad tree with dense foliage reaching 25 m

Natural range: Central and southern Europe, north to Paris

From seed to timber

Plant, grow, fell; plant, grow, fell: this is the forest cycle that enables well-managed forests to go on forever, providing wood for timber, a haven for wildlife and a place for people to enjoy.

The forest is home to thousands of species of plants, birds, mammals, reptiles, and insects. As some areas of the forest are cut down, others are being planted, creating a patchwork of forest with trees at different stages of development. Which plants and animals are present at any one time or place depends on the stage of the 'forest cycle'

Preparation

In some places, the ground needs to be prepared before trees can be planted. This is like digging the garden, but a plough might be used instead of a spade.

Newly planted areas

Open ground and newly planted areas give shelter to insects, reptiles, and ground nesting birds. In turn, these provide food for larger birds and animals such as short-eared owls, kestrels, and foxes.

Felling

Trees are cut down when fully grown. This can be between 40 and 150 years depending on the type of tree. Once the trees have been cut down they are taken to the forest roadside. A timber wagon then transports them to the mill where they are converted to timber products.

Planting

Planting is nearly always done by hand. Lots of factors, such as soil, climate, and site, affect which trees can be planted and how this is done. Trees are planted close together to give them protection from the wind and to encourage them to grow tall.

Thinning

More trees are planted than needed. Over time the poorer trees are removed to give room for the rest to grow.

The sheltering thicket

Dense bushy trees trap warm air, which gives protection from the cold and rain. These quiet areas attract small birds and animals, such as wrens, warblers, and shrews. Deer also enjoy the shelter and seclusion that the trees give.

The mature forest

As trees mature, new homes are continually created in cracks, holes, and branches. Old trees and dead wood are often left for large birds and animals to find food and shelter.

Thinned plantations

A mix of light and shade encourages grasses, mosses, fungi, and wildflowers, which in turn attract butterflies and moths.

Fungus

Squirrel

Short-eared owl

Roe deer

Forest cycle

FELLING
PREPARATION
PLANTING
THINNING

From tree to timber to products

Fast-growing conifers are required to meet most of our timber requirements in this country, but broadleaved trees are still used for some high-quality products, including furniture. In recent years there has been a return to traditional methods of managing broadleaved trees including the production of charcoal and basket-making.

Thinnings tops of trees and small trees

Paper and cardboard

are made by breaking the wood down into individual fibres to produce 'pulp'. The pulp is then mixed with water and spread in a layer before being rolled and dried under pressure.

Chipboard

is made from small particles of wood bonded together with resins and rolled under pressure to form a sheet. It is used for flooring, roofing, partitions, or covered in veneers or laminates for furniture.

Medium Density Fibreboard (MDF)

can be made from most parts of a felled tree. The wood is broken down into individual fibres which are bonded under pressure with resins. It makes an easy material to work and shape

Oriented Strandboard (OSB)

is a sheet material formed by compressing large flakes of wood which are held together by resin glues. This moisture-resistant board is used for flooring and is a cheaper substitute for imported plywood.

Trunks or sawlogs

Large-dimension beams

for specialist construction work such as post and beam houses, offices, and other buildings.

Planks and boards

sawn straight from the tree are the simplest products made directly from timber.

Bark and other parts of the tree

Bark chippings, rustic poles, small logs, and coppice wood

Playgrounds, garden mulches, firewood, charcoal, baskets

Recyclable

Newspapers, books, packaging, stamps and labels, stationery, sweet wrappers, toilet and kitchen rolls, wallpaper

Recyclable

Boards, construction, flooring, furniture, insulation, worktops

Recyclable

Construction, fencing, flooring, furniture, packing cases, pallets

Corsican pine

Pinus nigra ssp. *laricio*

This variety of black pine is fast growing and has a remarkably straight trunk which is lightly branched.

Native only to the island of Corsica, it is only satisfactory as a timber crop in the south and eastern side of Britain where there is low summer rainfall and higher levels of sunshine.

Corsican pine was introduced in 1759 and its timber was used for railway sleepers and pit props. Though not naturally durable, and considered inferior to Scots pine, it takes preservatives well and is used for general building work, telegraph poles, and it can be made into plywood.

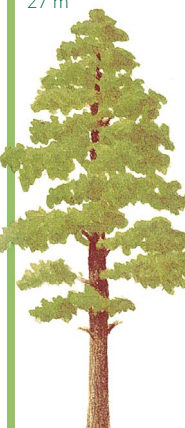
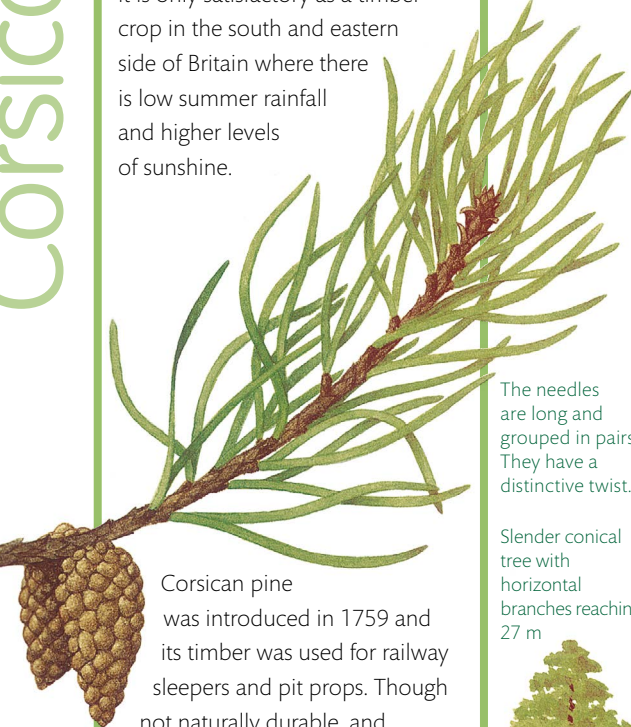
The fissured dark greyish-brown bark breaks off

The needles are long and grouped in pairs. They have a distinctive twist.

Slender conical tree with horizontal branches reaching 27 m

Large shining cones always one-sided or oblique

Natural range: Corsica



Scots pine

Pinus sylvestris

A native of the once extensive Caledonian pine forests, it is our only native timber-producing conifer.

It is a pioneer species due to its ability to regenerate and thrive in poor soils. It is found in its native state in Scotland, although planted extensively elsewhere. Its timber, known as 'red deal' is strong and easy to work. It is not naturally durable, but it takes preservatives well.

In the past it was used for ships' masts, as a source of turpentine, resin and tar, and for charcoal. Today it's used for building, pit-props, furniture, chipboard, boxes, fences, telegraph poles, and paper pulp.

Upper bark orange-red; lower bark deeply fissured

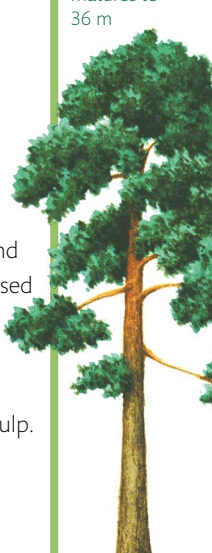
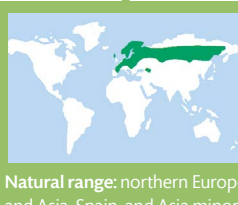
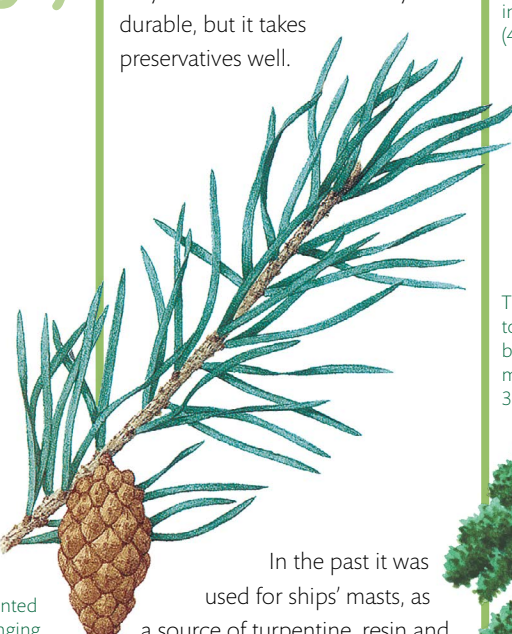
Twisted blue-green needles found in pairs (4-7 cm long)

The tree tends to lose its lower branches as it matures to 36 m

Brown egg-shaped cones, in clusters of two to four that point backwards along the stem, with a small sharp prickle on each scale

Pointed hanging cones with woody scales

Natural range: northern Europe and Asia, Spain, and Asia minor



Lodgepole pine

Pinus contorta var. *latifolia*

An inland variety of the American shore pine, its straight stem was used by Indigenous Americans for the central supporting pole of their lodges or wigwams.

Introduced into Britain in 1855, its remarkable tolerance to poor soil makes it particularly useful as a timber crop in the north of Britain. Its timber is used for roofing, flooring, and other joinery, and also in the production of chipboard and paper pulp.

Bark variable but typically red-brown with fine curled flakes

Twisted yellowish-green needles found in pairs (5-8 cm long)

The tree loses its lower branches as it matures to 24 m

Long cylindrical brown cones which hang down

Natural range: western north America: Alaska-Washington



Norway spruce

Picea abies

The traditional Christmas tree found in many of our homes during December.

A European, but not British, native species. It was widely planted earlier this century, but later replaced by the higher yielding Sitka spruce. The tough and elastic timber, known as 'white deal', is used for internal building work, boxes, and paper.

Its sound transmitting properties make it ideal for certain parts of violins, hence it's name 'violin wood'. In the past its resin was used as a source of turpentine and pitch, and its twigs for making spruce beer.

Greyish-brown smooth bark with a rusty tint

Pointed mid-green needles standing on tiny pegs

A conically shaped tree reaching up to 40 m

Long cylindrical brown cones which hang down

Natural range: northern and central Europe



Sitka spruce

Picea sitchensis

Named after Sitka in southern Alaska, this species is the mainstay of the forest industry in Britain.

Its ability to adapt to a wide variety of site conditions and its high yield, especially in the wetter western regions, makes it our most successful upland plantation species. A versatile timber, with smaller trees being of particular value for paper making because of their fibre length and white colour. It is also used in the manufacture of different types of board.

Sawlog material is used for pallets and packing cases with the better grades used for building.

Bark greyish brown which when mature flakes off in round scales

Flattened solitary needles on pegs have a slatey-blue tint and sharp points

Grows up to 55 m developing drooping branches

Light brown cones have thin papery scales with crinkled edges

Natural range: west coast of N. America: Alaska-California



Hybrid larch

Larix x eurolepis Henry

The result of the chance cross-pollination of Japanese and European larch on the Duke of Atholl's estate at the turn of the 20th century.

Nowadays most of the seeds are produced in seed orchards with trees of each parent planted in alternate rows. The offspring show remarkable 'hybrid vigour' growing faster than the parent and surviving under poorer conditions.

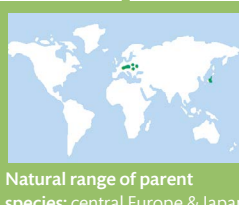
Its changing crown colour in spring, autumn and winter contrasts with other coniferous species making it widely used in designing forest landscapes. Its strong durable timber is used for fencing, rails and, gates.

Deciduous needles grow in rosettes on the short shoots

Cylindrical cones with rounded scales, many of which turn outwards

Trees can reach up to 30 m

Natural range of parent species: central Europe & Japan



Douglas fir

Pseudotsuga menziesii

Named after David Douglas, who in 1827 sent the first seed back to Britain. Its botanical name commemorates Archibald Menzies who discovered the tree in 1791.

A major timber species in its native North America. Imported timber is sold here as 'Oregon Pine' and is used for construction work and for high quality plywood and veneers as well as for furniture and panelling.

Originally grown in this country for ornamental purposes, it is now a valuable timber tree used for sawmill timber and paper pulp.

Bark becomes reddish-brown fissured and corky

Soft needles with two grey bands underneath (but no peg)

Very tall, growing to 60 m in Britain

Oval shaped cones hang downwards with a 3-point bract on every scale

Natural range: Western North America: British Columbia to California



Noble fir

Abies procera

Introduced into Britain in 1830, noble fir is a native of the forests of Washington and Oregon where it grows to a great height.

Regarded as a decorative species, on account of its striking blue-grey foliage and regular growth habit, it is often used in Europe for wreaths.

For the Danes it is also the preferred Christmas tree. In Britain it has been planted on a very limited scale in the wetter western districts. Its timber is hard and close-grained and used for interior joinery.

Pale grey to purplish smooth bark

Large upright cones with downturned feathery bracts

Tall, handsome conifer reaching 45 m

Natural range: Western North America



Western hemlock

Tsuga heterophylla

A graceful tree reaching up to 500 years of age on its native American west coast.

Introduced into Scotland during the 19th century for ornamental purposes, it has been used commercially on a limited scale. Its tolerance to light shade allowed it to be planted under old broadleaved woodlands but its susceptibility to butt rot has much reduced this practice.

The wood has the ability to hold nails well and is used for building, box making, and paper pulp. In the past, Indigenous Americans used the inner bark for bread making.

Bark becomes deeply furrowed into scaly ridges

Random needles of varying lengths: green above and white below

Characteristic drooping appearance with downturned leading shoots

Numerous small egg-shaped cones

Natural range: western north America: Alaska-California



Yew

Taxus baccata

One of the oldest living trees in northern Europe, yew is one of the three conifers native to Britain (the others are Scots pine and juniper). They bear succulent red fruits instead of cones.

When a bird eats one of the fruits, it digests the fleshy jacket (or aril) and passes the poisonous seed intact.

Although a 'softwood' it grows slowly, giving the wood great strength. Thin, springy branches were once used for making longbows. Nowadays the wood is made into veneers and is used for furniture making. Yew is popular in gardens as it can withstand unlimited clipping and shaping. Huge and ancient trees are common in churchyards; some are thought to be thousands of years old.

The seed, like every other part of the tree except the fleshy seed cap, is poisonous to humans and cattle but not to deer or rabbits

Male and female flowers are borne on separate trees which is a primitive feature in conifers

Usually a round densely branched tree up to 15 m tall

The light brown bark is thin and scaly, becoming deeply furrowed and breaking away in long flakes

Natural range: Europe, Atlas Mountains, Asia Minor to Persia

