



# The Adventure Trail



# The Adventure Trail - a track through unique broadleaved forest

The Adventure Trail is the first of a series of nature trails to be laid out in the great natural forest areas around Bjørnevåg Tourist Centre. The Adventure Trail is 1 km long and 1 m wide, and is easily accessible for visitors with and without prams and wheelchairs. We are constantly adding new trails and viewpoints to enrich your walk.

*Our guests and all others who wish to experience our bewitching nature are welcome to make use of our nature trails.*



*At the end of the tour, the Adventure Trail passes Abraham Larsen's house, which has been renovated both inside and out to be just as it originally was in the 19th century.*

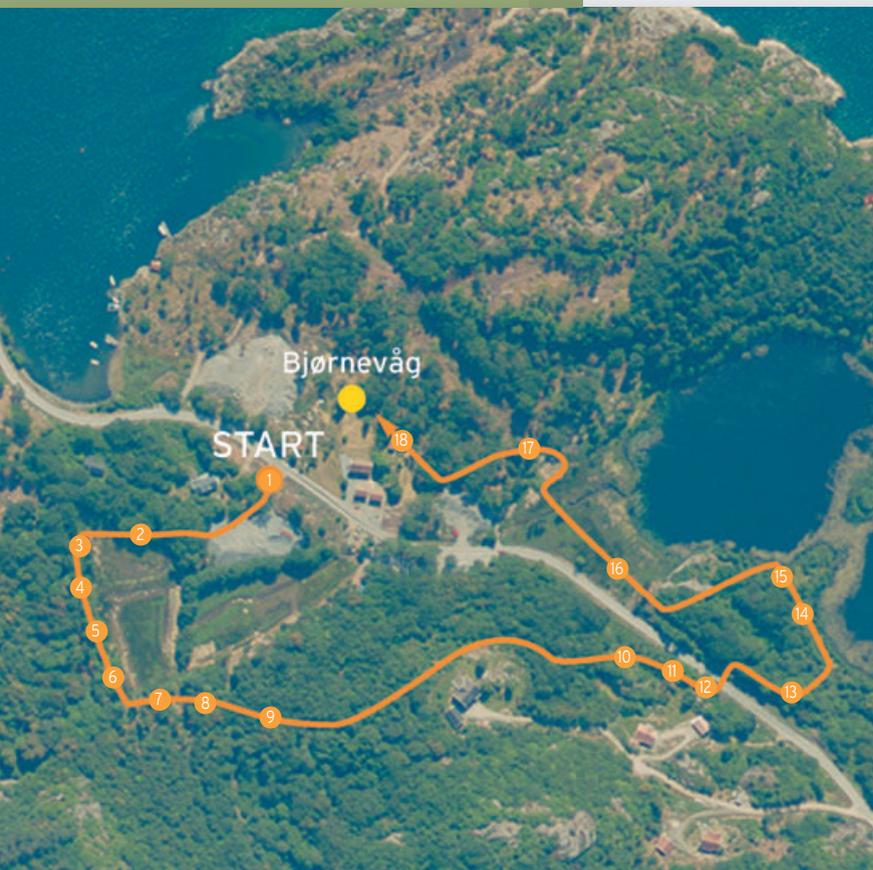


*In the forest around Bjørnevåg, research for sustainable forest management is carried out. Some research sites can be seen along the Adventure Trail.*



*Odd Aarnes has shaped the Adventure Trail by hand, using lever, pickaxe and spade. No machines were used in order to minimize damage to the environment.*

# Adventure Trail



- Notice boards:
1. Start
  2. Research site
  3. Warmth-loving trees
  4. Topping trees
  5. Ivy
  6. Tawny owl
  7. Oak
  8. Curly birch
  9. Green woodpecker
  10. Tarn
  11. The King of Bjørnevåg
  12. Aspen
  13. Badger
  14. Grey heron
  15. Beaver
  16. Mire
  17. The broadleaved forest zone
  18. Bakery

## Follow the markers and look for the notice boards along the trail

The trail goes through a forest consisting mostly of oak trees, but also with some trees of other species. Follow the blue markers with yellow suns that are fixed to the trees and study the notice boards with information about the nature surrounding you. In addition to information about trees and nature in general, there is also information about animal life. There is limited space on the notice boards, so we tell you more about each topic in this brochure. Enjoy your visit!

## Research on new operational methods for Norwegian broadleaf forestry

The forest in Spind will be developed into one of the country's biggest and best-run broadleaved forests. The work is already in progress. Spind Broadleaved Forest Park already consists of a range of research and demonstration plots.

The first plots were established in Spind Forest Park in 2002. Large areas have later been worked up and planted with a range of different species and clones\*. The types of trees chosen will eventually produce timber with valuable characteristics. The following species have up to now been planted in Spind Forest Park.

**Silver birch** (*Betula pendula*) *see page 10*

**Black alder** (*Alnus glutinosa*)

**Wild cherry** (*Prunus avium*)

**Ash** (*Fraxinus excelsior*)

**Norway maple** (*Acer platanoides*)

**Wych elm** (*Ulmus glabra*)

Birch is especially interesting because it has different varieties that produce very valuable timber. Examples are flamy birch, curly birch (*Betula pendula* var. *Carelica*) and bird's eye birch.

Through testing of different clones and their forms, we can find out which clones grow best and have the best properties. Experimental activities, which have previously consisted of two main projects, are managed by Senior Researcher Inger



Notice board 2

S. Fløistad of the Norwegian Institute for Agricultural and Environmental Research ([www.bioforsk.no](http://www.bioforsk.no)) and have the following objectives:

- To develop production methods that increase the quality of broadleaved plants and make them more robust for planting. This project lasted from 2002 to 2005, and is thus now finished.
- To develop cost-effective methods for the establishment of valuable broadleaved forest with the least possible damage. This project started in 2006 and will continue until the end of 2009.

In addition there are planted areas outside the research plots, and parts of the indigenous oak forest are cultivated. Demonstration plots have been set out in the younger oak forest. Some of these are fertilised to find out what effects different sorts of fertiliser have on the trees.

*\*The word 'clone' is Greek, and means twig or cutting. Our clones are produced from twigs from different trees from large parts of southern Norway. The bird's eye clones come originally from Denmark (vegetative propagation).*

## Norwegian broadleaves have many different properties and requirements

The requirement that is most important for a species' geographical distribution is the requirement for warmth. This is given using the term 'tetratherm', which means the lowest average temperature in the four warmest months of the year that the species must have to survive and produce mature seeds.

Through isotherms one can get an impression of how the average temperature falls northwards in Norway and with increasing altitude in the mountains.

These isotherms do not, however, tell the whole story. Local climate is important for tree distribution, and all broadleaved species develop best on deep, nutrient-rich, humus-rich and preferably lime-rich soil with adequate moisture.

In the table below, we have prepared an



Notice board 3

overview of Norwegian warmth-loving tree species. As you will see, many of these species have their most northerly outposts here. This is due to the Gulf-stream, which flows northwards along the coast and gives Norway a climatic advantage.

Norwegian broadleaved species that are not included in the Table have low requirements regarding warmth and are found in forests in the whole country. These include downy birch, grey alder, bird cherry, aspen, rowan and goat willow.

Species	Scientific name	Need for warmth	Grows north as far as	Comment
Wych elm	Ulmus glabra	Medium	Beimn in Nordland	Furthest north in the world
Ash	Fraxinus excelsior	Large	Leksvik in Nord-Trøndelag	Furthest north in the world
Beech	Fagus silvatica	Medium	Seim in Nordhordland	Furthest north in the world
Common oak	Quercus robur	Large	Edøy in Nordmøre	Furthest north in the world
Sessile oak	Quercus petraea	Large, esp. in winter	Nordfjord in Sogn & Fjordane	Manages best in coastal areas
Silver birch	Betula pendula	Medium	Pasvik in Finmark	Furthest north in Norway
Hazel	Corylus avellana	Medium	Steigen in Nordland	Furthest north in the world
Wild sherry	Prunus avium	Large	Trøndelag	Prob. descended from garden fruit trees
Holly	Ilex aquifolium	Large, esp. in winter	Smøla in Møre & Romsdal	Furthest north in the world
Lime	Tilia cordata	Large	Brønnøy in Nordland	Furthest north in the world
Norway maple	Acer platanoides	Large	Alvdal in Hedmark	Furthest north in Norway
Black alder	Alnus glutinosa	Medium	Snåsa in Nord-Trøndelag	Furthest north in Norway Manages best in coastal areas

## In earlier times, topping of trees was a method of feeding animals in the winter

Topped trees have a couple of metres of thick trunk furthest down, with a bunch of branches above this.

The reason for this unnatural appearance is that the annual shoot growth has been removed over a number of years in order to use the foliage as fodder, so that the tree has been unable to develop a canopy. When topping stops, many side shoots are able to develop further, and we see large, broad canopies.



Notice board 4

Elm, ash, lime, oak, aspen and birch were especially suitable for topping, and the nutritional value could be as good as with grass. The farms often didn't have enough land and enough hay to feed the livestock through the winter, and it was thus necessary to add leafy branches from the broadleaved forest. This method of feeding animals through the winter was in use in many places until the 1950s.

Topped trees can, when allowed to grow freely for some years (photo to the left), appear like fairy-tale characters, and many well-known artists have painted famous pictures of such trees.

In our time, trees are generally topped in parks. One can shape the tree canopy as one desires, or people will keep the trees low for sunlight or to preserve a view.

## An evergreen climbing bush that was earlier believed to have medicinal properties

Ivy is an exotic component of our flora. It grows naturally along the coast from the Oslo Fjord to Hardanger. It's an evergreen climbing bush, growing up to 30 m high on trees.

The flowers are yellow-green and inconspicuous, while the berries are blue-black with a bitter taste. Ivy has previously been much used as a medicinal plant, to help against eye problems, deafness and epilepsy. Also, in medical textbooks from the 15th and 16th centuries, it is named as a cure for bladder stone and non-occurrence of menstruation.

The ancient Greeks dedicated the plant to the wine god Dionysos and the Romans to the wine god Bacchus, whose head was adorned with a wreath of ivy. Maybe it is not strange that the plant was supposed to help against headaches, as this could be helpful after participating in the wine god's parties! In early Christian symbolism, ivy represented eternal life, and at funerals the corpse was often laid on ivy. Today there is no medicinal use of ivy in Norway



Notice board 5



## Ghostly hunter of the twilight

The tawny owl breeds in hollow trees and is characteristic of the cultivated landscape, where it hunts nightly for mice.

Few birds could live as close to humans without being seen as the tawny owl, however, it can be heard. It is easy to hear the nightly concerts of the tawny owl couple towards the spring, when the spouses call to each other with piercing cries. The nocturnal lifestyle of the tawny owl and its ghostly appearance, as it comes flitting silently in the twilight, easily triggers the imagination. The sharp cry "ku-vitt" at night could easily be interpreted as "kle hvitt" ("dress white"). Popular imagination, together with superstition of earlier ages, often interpreted this call as a warning that someone would



Marks in the snow where a tawny owl has caught a mouse.



Notice board 6

soon die and be laid in the coffin. The cultivated landscape here in Spind is a suitable area for this species, with broadleaved forest and forest edges with large, old trees. It can also be found in gardens with old, hollow trees where it places its nest. The tawny owl is among the birds that start breeding earliest in the spring. It can lay its 2-7 eggs as early as the middle of March, depending on the availability of food.

The tawny owl is often active at dusk and at night, when it hunts the mice, rats and other small animals that make up the bulk of its prey. Thus, the tawny owl can be considered a useful bird as it limits the number of small rodents that might otherwise cause damage in houses, gardens and plantations.

During the day, the tawny owl often perches sleepily near the stem in a shaded canopy. If you are lucky enough to discover it, you will see that the owl's neck is so flexible that it can turn its head backwards as it sits calmly and watches the observer - often close up. The owl is often considered a symbol of wisdom.

## Oak trees can be 1000 years old and develop vast canopies

75% of all oak forest in Norway is found in Sørlandet in the south. The rest is scattered in Østlandet (eastern Norway) and along the coast as far as Nord-Møre, where the world's most northerly oak forest is found.



Oak requires summer warmth and the growing season should not be too short. It grows best on deep, nutrient-rich, well-drained and humus-rich soil. Waterlogged soil and peat are not suitable. Oak can become very old, sometimes up to 1000 years, and if it stands alone it can develop a vast leafy canopy. It can be over 30 m high, but the circumference can be even more impressive. In Hardanger there is an oak, Brureeika, with a circumference of



Notice board 7

nearly 11 m. Felling in oak forests is much lower than growth, so the forests grow continually. The exhibited oak forest is used a lot for wood, but if it is cared for properly and thinned during growth, it could in 120-130 years' time be used to make beautiful panelling, facades and outer doors. Oak wood is durable and is therefore widely used for parquet floors and stairs. It tolerates moisture well and has therefore been used over a long period for various aquatic constructions, such as poles for jetties. The wood is very durable under water.

Oak has always been in demand for boat building, and great maritime nations such as the Netherlands and Great Britain bought large amounts of oak wood along the whole coast of Sørlandet for building both trading ships and warships. Oak is still used for frames in modern wooden boats, and the oldest wooden boat in the country (a hollowed-out trunk) is over 2000 years old. Oak has strongly grey-brown heartwood and well-developed growth rings, which give fine patterns to processed wood. It is very suitable for processing both manually and by machine.

## An exotic tree variety with decorative and useful properties

Two-thirds of all broadleaved forest in Norway is birch and is found all over the country. We have many sorts of birch: downy birch, silver birch etc. The curly birch that we work with at Bjørnevåg and Berghøydne is a variety of silver birch.

Curly birch is special because the wood cells do not grow straight, so that the wood gets a wavy, flamed appearance, at the same time as the bark cells grow into the wood and create black patterns. This gives a wood structure that is full of variation and that gives a highly decorative impression. Curly birch, also called mazer birch or masur birch, is caused by genetic factors.

The distinctive appearance can be used commercially, and curly birch is in demand



*In curly birch timber, bark cells form black patterns.*



Notice board 8

today for knife shafts, decorations and veneer on furniture. Much of this can be produced by small trees.

We don't need to wait for the trees to grow. Some trees can be harvested for production of various objects already after 12 - 14 years. By replacing ordinary birch with curly birch, we will greatly increase the value of the forest.

The birch can have many other unusual forms in the structure of its wood, such as pure flamy wood, false heartwood, and burls. Spalted wood is wood that has been attacked by fungi.

In Norway, we do not make sufficient use of the birch. Annual growth is about three million m<sup>3</sup>, while sawmills take only 10,000 m<sup>3</sup>. With proper care of birch stands during growth, we could obtain large amounts of sawntimber. This will give fine, light-coloured panelling and veneers. Birch is in addition very suitable for laminated wood constructions, and the wood is both hard and tough.

## A beautiful and useful bird, all year round

The green woodpecker is most common in old broadleaved forest hillsides, often in association with cultivated land. Its main food in the winter is ants.

With its yellow-green body and red cap, the green woodpecker is probably the most beautiful of our woodpeckers. However, the black mask around the eyes gives it a rather fierce appearance. The green woodpecker thrives in old broadleaf forests, particularly on steep hillsides with aspen, lime and elm. In Spind it is often called 'Lihest' ('horse of the hillside'). The bird is not always easy to see among the green leaves, but its powerful, piercing voice can be heard from early spring until far into the autumn.

Like the other woodpeckers, the green woodpecker is adapted to a life in which chiselling and hacking wood is the main occupation. All other birds that carried on like this would suffer concussion. Woodpeckers, however, have a porous, shock-absorbing slab between the bill and the skull, which enables them to live this way. The nest hole is most often hacked out in large-stemmed aspens. The five to eight eggs are as a rule laid in the middle of May. The chicks are fed with regurgitated ants and ant pupae, although other insects and larvae are also eaten. The green woodpecker finds its food literally between the bark and the wood. It climbs



Notice board 9

on old stumps and trunks in a continuous search for wood-boring insects, bark beetles and larvae.

Woodpeckers are very useful the whole year round, as they remove insect pests from trees. It's not so popular that the bird now and then also attacks old out-house walls or the energy companies' masts when searching for food.



*In the winter, the green woodpecker's main food is ants. It digs deep holes all the way to the centre of the anthills. If it can't reach with its bill, it uses its 10 cm long, sticky tongue, which it sticks far in through the passages and pulls out ants and ant eggs with.*

## It has been said that "The tarn is nature's eye"

Just as our eyes draw other people's attention, so too does the forest tarn. Within the Romantic Movement, the tarn always had an important place, either as a dark, impenetrable deep or as the mirror of the sky.

Water is essential for life, and tarns play a decisive role for many creatures, either as a home or as a larder. Liantjønna just west of Bjørnevåg is a good example of this. Here we find fish species such as char and eel, together with many smaller organisms that are eaten by the fish. Many ducks, cormorants and grey herons are at home



*The forest tarn is essential for everything living.*



Notice board 10

here, not least because the tarn is surrounded by rushes and marshes.

A beaver family has also found the tarn an attractive place and has built its lodge on the north side. There were beavers in the lodge in 2007, but we don't know how many individuals there are now. The beaver's way of life makes it completely dependent on fresh water.

If one is lucky, one can also see roe deer and European elks come to the water on calm evenings to drink or eat aquatic plants.

In some periods, many tarns and lakes in this region have been unsuitable for fish and wading birds because of acid precipitation from industrial activity further south in Europe. This led to water acidification and fish death. The situation has improved greatly during recent years, and fish are now set out in many places so that the waters can return to their original condition.

# The King of Bjørnevåg

## Bjørnevåg's largest oak is known as the "King Oak"

This is the largest tree at Bjørnevåg. The diameter is 111 cm at a height of 1.3 m above ground level. The tree is about 25 m high and the lowest straight trunk has a volume of about 6 m<sup>3</sup> (= 6000 litres). The tree is very old.

The oak has the scientific name *Quercus robur*, which means that the tree has hard and strong timber. The tree's characteristics demonstrate strength and endurance, both of which nourish Norse and worldwide mythology. Our Nordic ancestors considered the oak to be a holy tree. It was "the thunder tree", holy to the god Thor, who protected those who sought refuge under it. In Roman



Oak trees are characteristic for Bjørnevåg's natural environment.



Notice board 11

mythology, the oak was sacred to the god Jupiter, and stood for bravery and patriotism. In Greece, the oak was the god Zeus' tree.

The oak is still symbolically important, and there are many stories about it. There are also many traditions concerning oak trees. Diseases could be transferred from humans to trees at certain ceremonies. Some chronic diseases, for example rickets, could be 'cured' in this way, with the enduring, holy oak as an active recipient. Even if this cure didn't work, one could still make use of the oak, even in the grave. An oak stick could be placed in the coffin to prevent the dead person from being taken by 'Gamle-Erik' (a folk name for the Devil).

Because of its hardness, oak wood is often used where wear and tear are large, for example in floors and stairs. The wood doesn't rot easily when in contact with soil, as shown for example by the Viking-age Oseberg ship. When the ship was excavated in 1904/05, it had been buried for more than 1000 years. The ship was built shortly before 800 AD, and was buried together with a royal lady about 50 years later. It is 22 m long and built of oak.

## Aspen gives new houses their beautiful patina

Aspen is found over the whole country, with the largest stocks in Sørlandet and Østlandet (south and east Norway). It does not normally live for more than 100 years.

Aspen is a light-requiring tree, and is happiest in humus-rich, well-drained moraine soils. On waterlogged and nutrient-poor soils it will grow slowly and rot quickly. Aspen has been shown to grow to nearly 35 m in Norway.



A row of aspen trees.



Notice board 12

**Use:** No other wood is as light as aspen. Newly planed aspen panelling used indoors retains its light-coloured appearance without fading, but if used outdoors it soon gets a beautiful grey patina and a soft surface. The panelling is very durable and does not crack. Aspen is often used if new houses are intended to give an impression of age.

Because the wood does not contain resin and is not good at conducting heat, it is especially suitable for use in panelling and benches in saunas. Aspen was earlier much used for wrapping foodstuffs, as it doesn't change the taste of food. Aspen is also used for horse stalls, matchsticks and veneer.

**Properties:** Aspen wood is relatively light and homogeneous. There is little difference between sapwood and heartwood, and growth rings are not particularly clear. Aspen is easy to work with, both manually and using machines. The wood can be cut, peeled, turned on a lathe and polished without great difficulty, and it can easily be glued, laquered, painted and stained.

## An odd, harmless animal that has been forced to live close to humans in order to survive

The badger is the second largest animal in the marten family. It is omnivorous, with berries, worms and all sorts of insects important in its diet. The hunt for food often brings it close to humans.

All those who have had a badger sett under the outhouse or the veranda know that it's not easy to get rid of. A badger rummaging around in the garden searching for fallen fruit and knocking over rubbish bins, is not a welcome guest. To scare it away, you could try a strongly smelling substance (ammonium chloride) or unusual noises such as those made by tin foil fluttering in the wind.

It is harmless to humans and will quickly run away. The old myth that badgers will attack and "bite until the bone splinters" has no basis in reality.

In the forest, the sett can be found under large stones or roots. Badgers generally have family setts that are used for many generations, and also some less important setts nearby. Badgers hibernate, sleeping lightly through the winter. The cubs, generally one to four, are born in February or March and suckle the mother before she has a chance to find food for herself. This is a vulnerable period, and the cubs can die of malnutrition.



Notice board 13

The badger population in many European countries has declined, but in Norway and Sweden it has increased recently. This odd animal is an important part of our fauna, and we should help it to survive.



*The badger often lives dangerously!*

## An unusually graceful and exotic bird for our part of the world

In Norway, the grey heron is typically a bird of the coast, but it also occurs in shallow inland waters and small tarns, where it wades around hunting for fish.

The grey heron is perhaps not the most beautiful of our birds, but it is without doubt among the most graceful. There is a certain dignity about the bird as it wades slowly and purposefully along the shore while hunting for its prey. It can stand motionless for hours near the water's edge while it waits for a fish to pass. When it sees a suitable quarry, it bends slowly forward and stiffens with the long S-shaped neck in attack position. Then, as quick as a flash, it takes its prey with a thrust of its powerful, dagger-shaped beak. The bird's fishing method is so effec-



Notice board 14

tive that a few anglers rub heron fat on their bait because they believe that this will attract the fish. However, the heron's secret is not any mystical attraction but rather a limitless patience.

When fishing, the grey heron is generally alone, but they are otherwise very social birds and breed together in colonies. When the male arrives at the colony early in the spring, he occupies the old nest and starts to flirt with the female. He does this with complex, graceful movements while they sit and balance on the branches of the nest tree.

The large nests are built of twigs and most often placed high up in tall, slender trees in steep forests or on coastal hillslopes. There are generally several nests in the same tree. After some years, the trees can be badly damaged by the herons' white, corrosive excrement. The four to five chicks are fed mostly with fish, although frogs, mice and other small animals are also popular. The chicks are ready to fly after about 50 days in the nest. Most grey herons migrate in the winter to the British Isles, but many spend the winter along the south-west coast of Norway, in Spind among other places.

## A dam-building engineer

The beaver is the largest rodent in the Northern Hemisphere. It can weigh up to 40 kg and has thick, waterproof fur. The hind legs are powerful, with webbing between the toes. The forelegs resemble our hands, and the beaver uses them with ability and precision.

The beaver is an engineer because of its way of life in tarns, where it builds its lodge at the water's edge. It makes sure that the entrance is always under water in order to avoid unexpected visits from predators. The beaver ensures control of the water level in the tarn by building dams, and it is here that it shows its engineering skills. These dams can be impressive constructions - the beaver has clearly been to a good school! A beaver lodge can be up to 7 m in diameter and contain 2-3 families. The beaver feeds its young inside the lodge in May.

It uses broadleaves, especially aspen, as building material for its lodge and dams. Most trees are felled in the autumn. Leaves and twigs are used as food, while stems and trunks become building material. Even large trees fall when the beaver gets going. It HAS to gnaw, otherwise its front teeth, which grow continually, will grow too large to gnaw with. Then the beaver is in trouble!

The beaver unknowingly helps many other animals in the forest. Felling of trees provides plenty of food for elks, roe deer and



Notice board 15

hares that eat the bark on the branches. The dam gives better conditions for many bird species, and in the dammed-up water we often find mink and otter.

Place names with "bjør" or "bjør" refer to the beaver (e.g. Bjordal, Bjørvika).

*Well-built beaver dam.*



## Nature's own 'storage boxes'

Mire consists of dead plant material. When dead plants are not decomposed to form soil but just pile up, we get peat, and when the peat layer is over 30 cm thick, we call it a mire.

Why do we get peat instead of soil? To get soil from dead plants, bacteria, fungi and small animals must decompose the plant material. If, because of the nature of the terrain, the water does not drain away but stays where it is, we will get oxygen-poor water, and in this water the microflora responsible for decomposition cannot live. If we dig ditches, so that the water can drain away, we will gradually get a bacterial flora that will convert the peat to organic soil.

Mires have specialised plant communities that only grow there, and it is therefore important to preserve examples of different types of mire. There are nutrient-poor mires (bogs) and more nutrient-rich ones (fens): both are found in Norway. More than 6% of the country's surface area is mire. Many mires are protected as nature reserves or in protected landscape areas.



Notice board 16

Humans have long made use of mires. Peat has been used for insulation when building houses, and dried peat has been used for fuel. Domestic animals also take advantage of the more nutrient-rich mires as a source of winter fodder. Peat is still used as matting in barns and stables as well.

Because water-saturated peat lacks the microflora that causes decomposition to soil, mires act as 'storage boxes' for seeds,



'Tollund Man' was found in a bog in Denmark and is probably the best-preserved ancient human in the world (photo: Silkeborg Museum, Denmark)

pollen and human artifacts. Old boats and hollowed-out tree trunks that are many thousands of years old, have been found in thick layers of peat. The famous 'Bog Man' in Denmark was buried in a bog more than 2000 years ago.

# The broadleaved forest zone

With just a small rise in temperature the broadleaved forest in southern Norway will increase greatly

Bjørnevåg lies in the nemoral vegetation zone that is dominated by broadleaves. At present, this zone makes up about 1% of the total forest area and consists of the coastal districts from Fevik in Aust-Agder county to the border between Vest-Agder and Rogaland counties. The climate is humid with warm summers and mild winters. Oak forest is the dominant forest type, and all our broadleaves are found in this zone, with the exception of grey alder. Scots pine, juniper and yew occur naturally, but Norway spruce does not occur naturally in this region.

The transitional region before reaching the pure coniferous forest of the boreal zone is called the boreonemoral zone, which today makes up about 10% of the forest area. It reaches from the Swedish border in the east in a continuous belt along the coast to Ålesund, with scattered occurrences as far north as the Trondheim fjord. The zone is characterised by both agricultural land and forest, and contains more or less all Norwegian tree species.

## The global temperature rises

In the last century, the average global temperature has increased by about 0.6°C. The most recent decades have been the warmest since measurements began, and it appears that the globe's average temperature is rising continually. In order to limit the global temperature rise to a maximum of 2°C, the IPCC (the United Nations' climate panel) states that emissions of greenhouse gases must be reduced by 2015 at the latest.



Notice board 17

## The area of Norwegian broadleaved forest is increasing

Increased average temperatures gives broadleaved forest the possibility to conquer new land. One analysis shows that the nemoral and boreonemoral zones will double in size if the winter temperature increases with 4°C and the summer temperature with 2°C. Of course, it's not desirable that human pollution raises the Earth's temperature, but if things continue in the direction that they are going, the broadleaved forest will be a winner.

## Broadleaved Forest Park gives knowledge

Farsund lies in the nemoral zone with a continental climate. Research and demonstration projects at Spind Broadleaved Forest Park will therefore give useful information on choice of tree species and management strategies for broadleaved forest in a warmer climate.



We may more often experience beech forest in Norway



*The Adventure Trail ends at Abraham Larsen's house. Here you will also find the Bakery (18), which is from the 19th century and restored to its original condition.*



# Thank you!

We hope you have had a pleasant stay, and that your visit was interesting and informative.

*Welcome back!*

**Bjørnevåg Forest**, where the Adventure Trail lies, is only a small part of the 93 km<sup>2</sup> forest in Farsund municipality. The area of outlying land in the municipality is 174 km<sup>2</sup>. Forest growth is 38,000 m<sup>3</sup>/year, but only 8,000-12,000 m<sup>3</sup>/year are felled. More could be felled to make good use of the economic capital represented by the forest. The best trees are today sold to sawmills that produce good quality timber, and some are used for pulp, but most of the timber is used as wood fuel. A much larger proportion of this valuable timber could be refined, and through its forest management strategies and its research projects Ekely wants to change the current trend.

