



Ekenäs Archipelago National Park

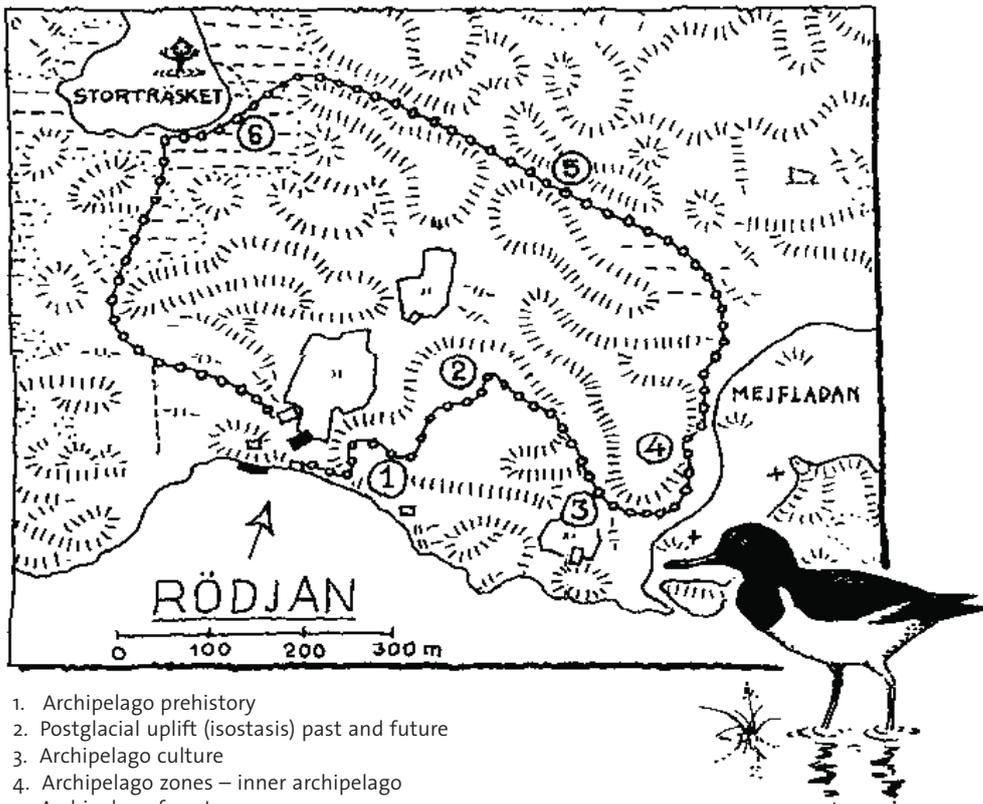
Älgö Nature Trail

English |



Ekenäs National Park extends from close to the open sea to the inner archipelago. You can most conveniently become acquainted with the various aspects of wildlife by using the nature trails. Älgö Nature trail, which starts at the park's main nature information cabin at Rödjan, introduces visitors to the inner archipelago. On the island of Modernagan, some 2 km southeast of Rödjan, there is another nature trail dealing with the outer archipelago. The island of Jussarö will also have a nature trail.

Many of the other protected areas managed by Metsähallitus also boast nature trails. You can enquire about these from Ekenäs Visitor Centre, tel. +358 20564 4613.



1. Archipelago prehistory
2. Postglacial uplift (isostasis) past and future
3. Archipelago culture
4. Archipelago zones – inner archipelago
5. Archipelago forests
6. Storträsket

Welcome to Älgö Nature Trail

The trail winds among diverse parts of the unique inner archipelago ecosystem. Follow the white signs, but do not hurry – stop at the resting places. Study the account of the archipelago's interesting development in this booklet.

Do not forget, however, that the booklet only serves to supplement the most important part of the trail – the wildlife around you. You will progress through a variable natural mosaic comprising both the cultural environment and wild habitats. By walking carefully and quietly you may glimpse one of Älgö's inhabitants, large or small, e.g. elk (*Alces alces*), white-tailed deer (*Odocoileus virginianus*), redfox (*Vulpes vulpes*), badger (*Meles meles*) or osprey (*Pandio haliaetus*).

The path is some two kilometers long. The first section in particular takes time; the initial 250 metres are toughest on the trail.



1. Archipelago prehistory

Look around you - the archipelago that surrounds you is constantly changing. On the geological time scale we can only 'borrow' it for a short time. However, the foundations of the archipelago are solid and safe. Well before people began their wanderings over the Earth the bedrock on which you now stand was the bed of a tropical sea bay. Limestone strata visible in some places form convenient records of development since those times. Today the limestone supports rare plants.

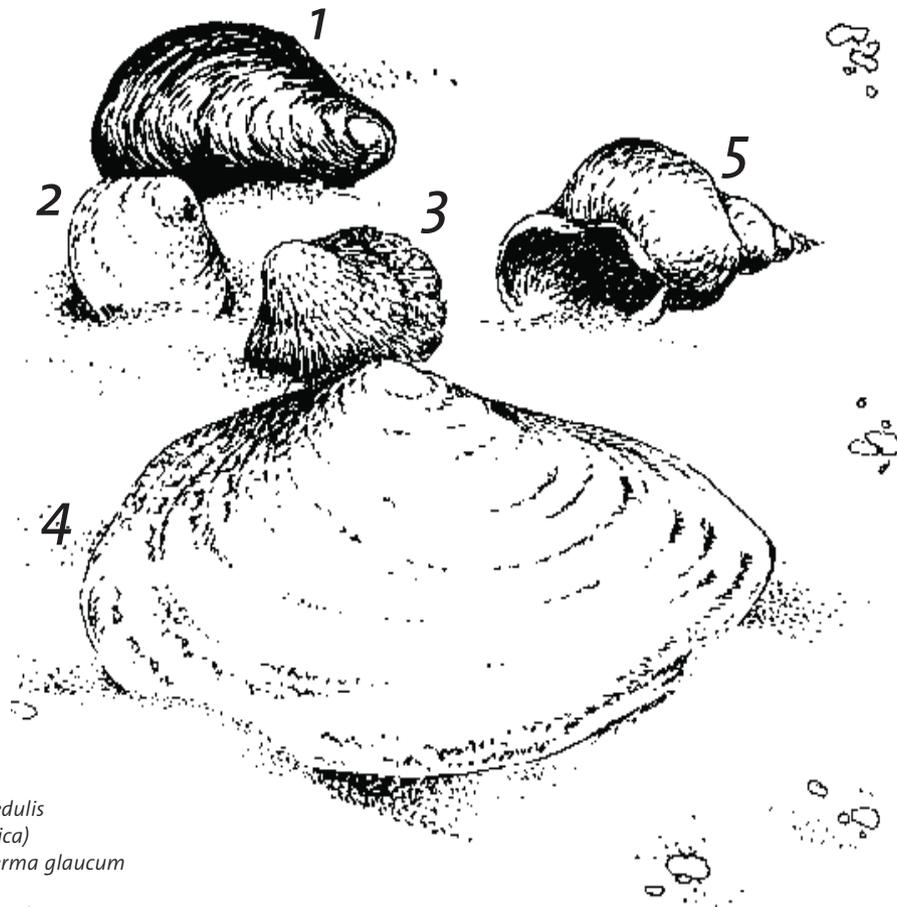
These rocks have been affected by at least four Ice Ages. The most recent of these is still affecting the environment. Huge glaciers depressed the bedrock, moved surface deposits, and abraded

the rock. Features of the bedrock, which can be enjoyed to the full in the national park, are not just there by chance. On the Estonian side of the Gulf of Finland 150 m high strata cover the bedrock, while in the southernmost Baltic the latter is as much as 3 kilometres down inside the Earth's crust.

The massive weight of the continental ice sheet eased as the ice began to melt, here some 11,000 years ago. By contrast, sea and wind still slowly but surely shape the archipelago environment. The melting glacier gave rise to a large lake. This place was then inundated by water to a depth of 150 m. Over the millennia the sea has changed in many ways: the temperature, salinity and sea level have

varied, while the flora and fauna have also altered. The various developmental stages of the Baltic have been given names based on the molluscs found in the bottom sediments. If this custom continues, marine biologists are likely in the future to call the present stage of the Baltic the 'Mya Sea stage' after the sand gaper (soft shelled clam), *Mya arenaria*, since during the last 400 hundred years this bivalve has become very common here.

This part of the sea bed, now called Älgö, has thus risen from the sea. But before we consider when and how this has happened, we need to go to the summit of the bedrock. From there we can trace how Älgö century by century has risen...



1. Common mussel, *Mytilus edulis*
2. Baltic tellin, *Macoma balthica*)
3. Common cockle, *Cerastoderma glaucum*
4. Sand gaper, *Mya arenaria*
5. Lymnaeidae, *Lymnaea stagnalis*

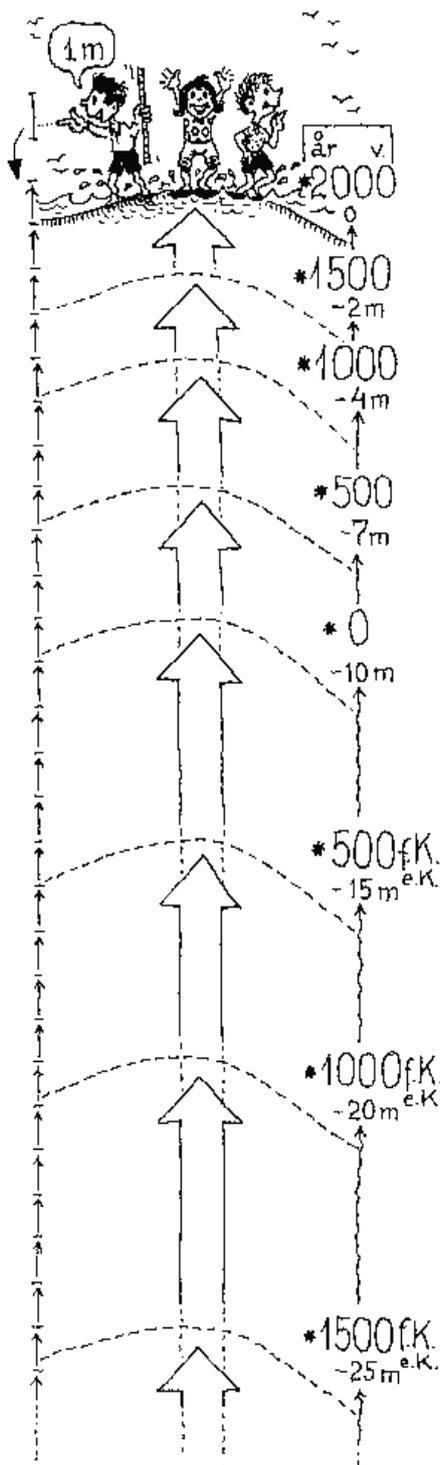
2. Postglacial land uplift – past and future

The spur of land between the meltwater lake and the North Sea was breached 10,000 years ago, when the water level immediately fell by almost 30 metres. As the land was released from the enormous weight of ice, it gradually began to rise.

In the early 1700s people like physicist Anders Celsius and naturalist Carl von Linné noticed that the shoreline moved. Both scientists believed that the phenomenon was due to decreasing water in the Baltic. In the "water reduction controversy" taking place in the late 1700s it was averred, among other theories, that the reason for the phenomenon was the continuing subsidence of the waters from the Flood referred to in the Bible. Gradually this theory lost popularity and by the early 1800s most people agreed that the land was actually rising out of the sea.

3,200 years ago the land uplift had reached the stage at which the bedrock on which you now stand was higher than the level of the Littorina Sea. The summer's were warmer than at present and this rock was then an islet, probably used as a basking place by large numbers of seals. Älgö formed an open archipelago composed of dozens of tiny islets in an outer archipelago in exactly the same way as the outermost islets of the national park today. However, it is uncertain whether land uplift will eventually combine the present outer islets into an island resembling Älgö, for measurements and calculations indicate that the land uplift is continually slowing down. Here it amounts to 4 mm a year, but e.g. melting glaciers raise the sea level nowadays (in the 21st century) by approximately the same amount.

The present combustion of fossil fuels increases the carbon dioxide concentration of the air, assisting the greenhouse effect that increases global warming. The higher temperature encourages the polar ice caps to melt.



Thus, our archipelago 'loan period' appears to be drawing to a close. The sea is gradually calling in its loan.

But instead of dwelling on future events, let's see how the shoreline has moved since this rock was just a tiny islet...

20 m 1000 B.C.

The middle Bronze Age. Continental climate with high mean temperatures but severe winter frosts and a lot of snow caused reformation of already melted glaciers in the fell regions.

15 m 500 B.C.

The Bronze Age draws to a close and the Iron Age dawns. Rapid switch to a more maritime climate. Summer temperatures fall and precipitation increases.

10 m 0

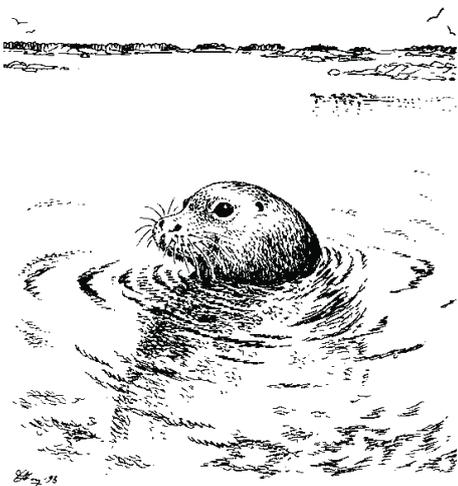
The start of modern times. The maritime climate causes paludification (mire formation) and increased peatlands.

5 m 800 A.D.

The Viking period nears its close and the Middle Ages replace the Iron Age. The archipelago is in the middle of an age of increasing population. Many ancient relics reveal a rich and flourishing archipelago society.

2.5 m 1400 A.D.

Raasepori castle used to be a local Feudal centre and movement within the archipelago vigorous. The Hansa trade alliance among other things increased safety at sea. The names of navigation marks on land indicate the old marine navigation channels and even today it is possible to find points of the compass composed of stones on promontories and islets.



Ringed seal, *Pusa hispida*

3. Archipelago culture

The first people arrived in the archipelago almost 6000 years ago. These Stone Age people came in small canoes to hunt seals. There are no signs from that period on Älgö, however. Älgö's highest rock at the time stood 35 metres below sea level and the outer islets of the time are now 60 m high peaks.

Large seal herds were vital to Stone Age man for establishing independent new settlements in the archipelago. With the primitive weapons of the Stone Age the seal was the easiest animal to catch. It also produced a variety of useful things: hides to make clothes, thread from sinews, needles and harpoon heads from sharp bones, meat and fat for food and oil. An important kind of seal was the harp seal (*Phoca groenlandica*), an arctic species that no longer inhabits the Baltic.

The ancient settlers of the archipelago lived in a harsh, but at the same time rich, environment. Seal and bird hunting and fishing brought good catches and whatever was left over was used in bartering with other communities. Since those times fishing, hunting and trading have been the traditional forms of livelihood in the archipelago. Agriculture and cattle farming were restricted by the dearth of arable and grazing land.

Archipelago inhabitants have not only been obliged to fight against the forces of Nature. Since the Viking forays, conflicts over power and trade routes have occurred along the shipping channels. Christianity arrived in this region in the 1100s and people were converted by the power of both the word and the sword. Christian settlers moved from Sweden east to occupy a large part of the archipelago.

Trade increased and the rich cargoes carried by the Hansa merchantmen induced the islanders to embark on a new field of endeavour. Many referred to this new enterprise as 'piracy'. During the 1400s more or less organised piracy took place here. However, it was not always conducted for the islanders' benefit. Before the development of man o' war vessels, plundering ships was used as a means to gaining political power. During the 1500s the archipelago flourished. Fishing produced good catches and King Gustav Vasa devoted great interest to archipelago problems. Trade was freed

and many islanders began to ship fish and timber to Rääveli (Tallinn). The good times came to an end, however, with the war between Sweden and Russia. Pillaging trips to the islands became commonplace. During the Crimean War in the mid 1800s even English/French fleets sailed in this part of the archipelago. To prevent being wrecked on the rocks, they would kidnap local people to act as pilots. Owing to the wars, the robbers and the poor Baltic herring (*Clupea harengus membras*) catches, at times permanent settlers were absent from a large part of the islands.

The low rate of resettlement broke off due to the great social upheavals caused by industrialisation. Archipelago ways of earning a living provided a poor income and forced many islanders to move away in hopes of a better future. Fields, meadows and barns began to look as they now do if you take a look around you. The archipelago became a forgotten region that was doomed to abandonment.

But let's go on now and explore the ecosystem of the inner archipelago...



Shhh! – you are approaching the archipelago nursery!



Common merganser, *Mergus merganser*

Pond Water-crowfoot, *Ranunculus peltatus* ssp. *peltatus*



4. Archipelago zones: The inner archipelago

The different parts of the archipelago may at first seem very similar. One may well ask how anyone can find their way about among these myriads of islands. If you ask an experienced islander the same question, he may answer you with an indulgent smile, if not raised eyebrows – the question is not a stupid one but it is difficult to answer. The local person has grown up with the different parts of the archipelago. Every place brings back a memory and a particular state of mind. This can be compared to attempting to explain one's personal feelings and there is thus no simple answer to it.

If you visit the islands often you will notice, by design or accident, how certain systems repeatedly appear. You will appreciate the arrangement of the islands, with large ones lying close to the mainland becoming small islets in the outer archipelago. On a boat trip you can also observe how the narrow sounds

and bays open out into large expanses of uninterrupted sea, where you can appreciate the impressive flat line of the horizon. After a careful scrutiny, you can see how the size, forms, and plant and animal species assemblages, as well as the division between land and sea, all change according to a certain rhythm.

Botanist Ernst Häyrén in 1900 published a thesis on the archipelago zones in the Tammisaari Archipelago. His observations were based on ecosystem changes. Starting with the mainland, Häyrén divided the archipelago into four zones: the coastal archipelago, the inner archipelago, the outer archipelago and the marine zone. However, modern textbooks often use other names for the zones.

It is possible to retain Häyrén's terminology today, but the boundaries he established are no longer valid. Land uplift and its general effect, together with sedimentation, cause the boundaries of the zones to move

outwards, making them impossible to define precisely. According to Häyrén's division, the place you stand at today would be part of the boundary between the inner and outer archipelago. Most of the trail goes through the kind of environment typical to the inner archipelago.

As you enter the inner archipelago the feeling of being in an archipelago subsides. Here the land is the completely dominant element. This zone is composed mainly of large, rolling islands. The navigation channels are long, narrow and twisting sounds which may be hidden by lush vegetation. The bedrock is frequently covered by soil and trees grow right up to the shoreline. Where soil has built up, shore meadows have formed and the sound of the sea is absent; on the other hand the hiss of the wind can be heard in the crowns of trees. The sharp tang of spruce (*Picea abies*) and hay have replaced the odour of rotting seaweed.

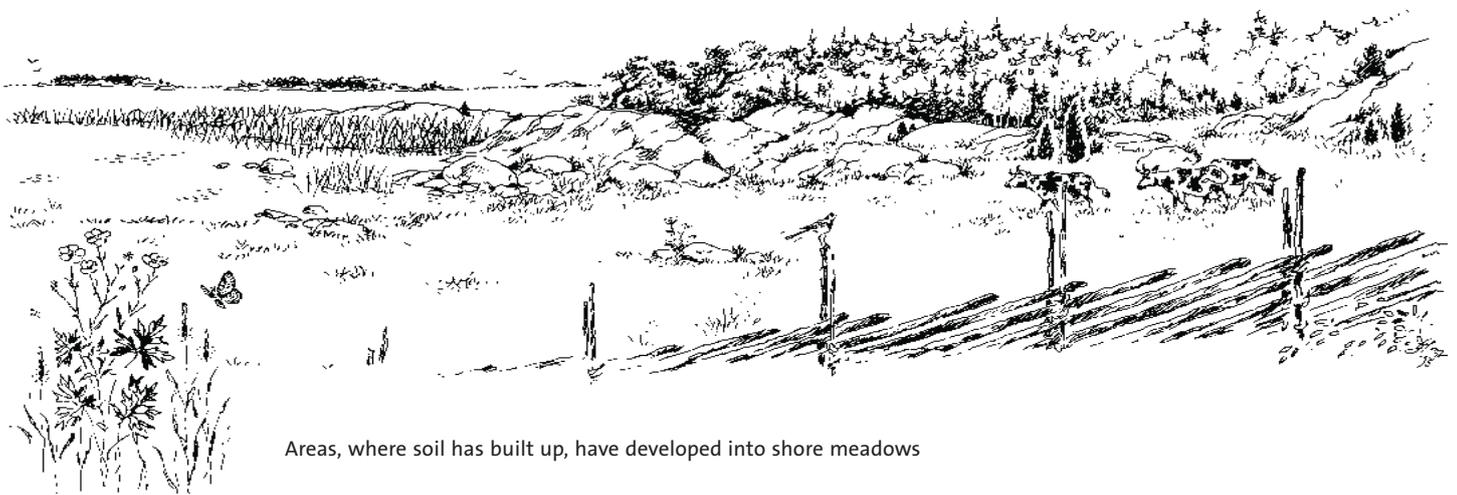


Marine zone

Outer archipelago

Inner archipelago

Coastal archipelago



Areas, where soil has built up, have developed into shore meadows

Land uplift and the sedimentation of both plant and animal remains make the inner archipelago marine bays shallower, so that these often develop into the kind of reed choked bay you see before you. These shallow bays, called 'flads', are in contact with the sea via one or more narrow sounds. Later the connection between the bay and the sea will be almost entirely lost. Only during times of exceptionally high water level does a small amount of seawater flow into the bay. This developmental stage is called a 'glo-lake'.

In the archipelago environment life on land is closely tied to marine food chains. The flads are to all intents and purposes large, sheltered contact surfaces in which life above and below the water maintains a vital contact. In an otherwise barren environment the reed beds form sheltered oases for both spawning fish and nesting birds.

We shall now leave the inhabitants of Mejholm flad to get on with their lives, and go and look at wildlife on this island close to shore.



Valeriana sambucifolia ssp. salina



"Flads" constitute sheltered oases

5. Archipelago forests

As you have already seen, the inner archipelago has a variety of forest types, from dry well-illuminated Scots pine (*Pinus silvestris*) heath forest to gloomy spruce (*Picea abies*) stands. Human activities are visible to a greater or lesser extent in Älgö's forests. Most of the island's stands were owned for a long period by large estates or companies. At one time some of the archipelago crofters paid their rent by producing charcoal. During the wooden ship era, pine was also burned to produce tar. Islanders also exploited the forests for raw materials to make buildings and implements. Where there were no lush shore meadows, cattle were grazed in the forest.

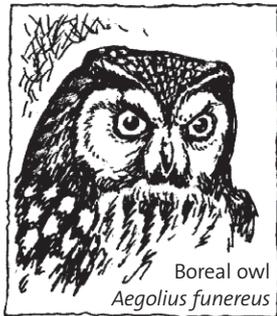
The islanders for long practised haphazard forestry which on its small scale was absorbed by Nature's own activities. On a more grand scale, however, this could have had serious consequences. The building of war ships led to selective cutting of some desirable tree species, like Scots pine (*Pinus silvestris*) and oak (*Quercus robur*). Some of the forests were thinned so much that they acquired an uneven tree species distribution. Älgö's forests were used commercially before the establishment of the park. Fortunately, the forests were managed using gentle methods suited to the islands, so that it is difficult now to find any evidence of commercial use.

If the forests on large islands in the inner archipelago are allowed to develop undisturbed, they will reach a stage at which only some major natural force,

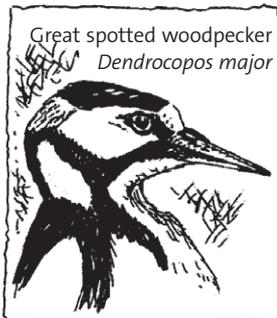
like a storm or gale, will cause obvious changes in them. The forest you are now entering has been left alone for a very long time and is thus in the final stages of succession. This kind of forest provides an important habitat for many species which cannot survive in managed forests. A lot of coniferous forest species live in the large rotting tree trunks that are absent from managed stands. Formations like the gully before you are extremely important habitats for rare species. The shape of the gully reduces the effect of sun and wind, and evens out temperature and humidity fluctuations. The steep lichen covered cliffs are enhanced by the light filtering down through the spruce branches.

In such a habitat one can almost expect to meet the little people of the forests described in children's books.

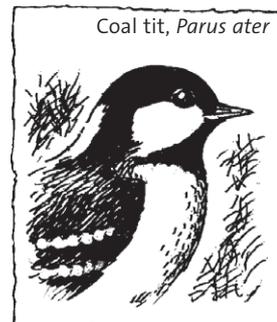




Boreal owl
Aegolius funereus



Great spotted woodpecker
Dendrocopos major



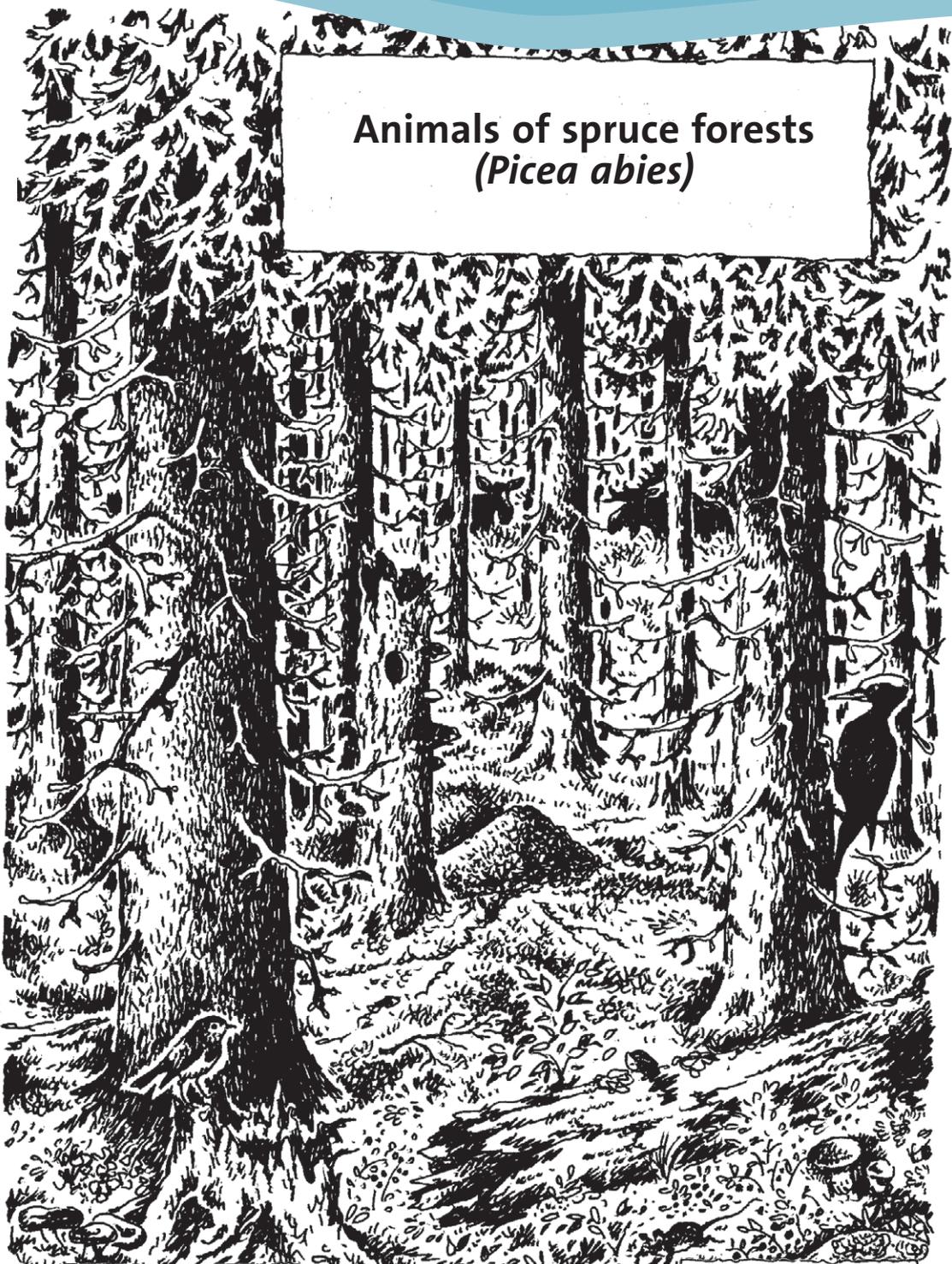
Coal tit, *Parus ater*



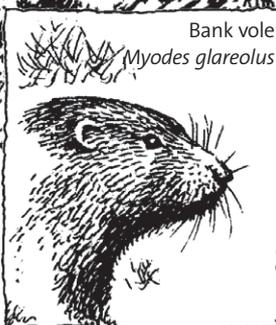
Red fox, *Vulpes vulpes*



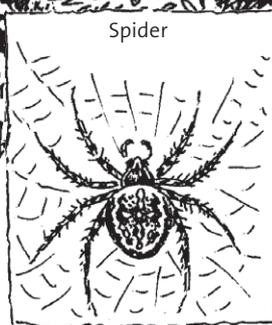
European badger
Meles meles



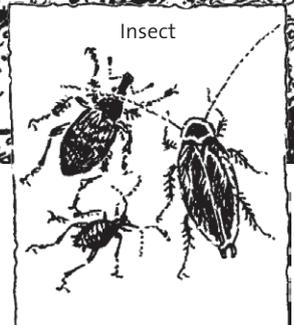
Animals of spruce forests (*Picea abies*)



Bank vole
Myodes glareolus



Spider



Insect

6. Storträsket

You have arrived at the southern tip of the lake, Storträsket, which became annexed from the sea during the 6th century and has since developed into a 30-hectare lake with four small islands. Aside from 'Trollträsket' (*Gnome lake*), the other name for this lake, Älgö still has two small lakes, Näseträsket and Lillträsket.

Storträsket and its surroundings used to be an untouched, peaceful nesting place for the white-tailed sea eagle (*Haliaeetus albicilla*), osprey (*Pandion haliaetus*) and black-throated diver (*Gavia arctica*). Storträsket is only a few metres deep but it has rather good fish stocks,

including pike (*Esox lucius*), perch (*Perca fluviatilis*) and roach (*Rutilus rutilus*). Näseträsk has no fish but is famous for its leeches (*Hirudiea*)! Storträsket drains into the sea through a small, babbling stream at the lake's northwest corner. Years ago the stream's kinetic energy was harnessed by a mill where nearby farms ground their corn. The mill-like structure remains but the water flowing through it no longer turns the mill stone.

You are now at the last stopping place and, if you feel like a refreshing swim, there is a convenient swimming place on the eastern shore of the bay (look at the map near front).

More information about the archipelago

You will find more information about the outer archipelago zone on the island of Modermagan. There is also a nature trail. Modermagan is about 2 km southeast of Rödjan.

It was nice to see you! Please come again, as the archipelago is constantly changing and you can always see something new.



Black-throated diver, *Gavia arctica*

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TAMMISAAREN ARCHIPELAGO NATIONAL PARK
HAS RECEIVED THE EUROPEAN DIPLOMA OF
THE COUNCIL FOR NATURE CONSERVATION

