



Protected Natural Objects in  
**HIIUMAA**

## Protected Natural Objects in **HIUMAA**

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Front cover photo:  
Cape of Sääretirp, L. Michelson  
Back cover photo: Fragment of Sarve  
Landscape Protection Area, V. Leenurm

Layout by: Akriibia Ltd  
Translated by: K. Nurm  
Editor of map: Areal Disain  
Printed by: AS Printon Trükikoda

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Publication supported by  
Environmental Investment Centre



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Photo: Tohvri Lighthouse, V. Leenurm





Photo: View of Estonia's most wooded county from Kõpu Lighthouse, V. Leenurm

Hiiumaa is Estonia's second largest island. Together with its 200 islets, Kassari being the largest, the area of Hiiumaa is 1,023 km<sup>2</sup>. This makes it Estonia's smallest county. However, some minor states in Europe, such as Andorra, Monaco, San Marino, Liechtenstein, and Vatican, are smaller than Hiiumaa.

The shape of Hiiumaa resembles a cross, with Tahkuna in the north, Kõpu Peninsula and Ristna in the west, Sõru in the south, and Sarve in the east. The longest distances are 60 km from Ristna to Sarve, and 45 km from Tahkuna to Sõru.

The coastline is quite jagged. There are numerous peninsulas, with Kõpu and Tahkuna being the largest, and smaller capes, such as Riida, Rambli and Ninametsa in the north-west and Sarve, Õunaku and Salinõmme in the south-east. Due to plenty of indentations, the coastline is quite long – approximately 365 km. There are numerous bays between the peninsulas: the largest are Mardihansu Bay in the south-west, the bays of Luidja, Reigi and Meelste in the north-west, Taresta Bay in the north-east, Jausa, Käina, Vaemla, Õunaku, Salinõmme and Soonlepa in the south-east, and Hellamaa Bay in the east.

Among the counties of the Republic of Estonia, Hiiumaa boasts the biggest percentage of forests – 67% of its area is covered with woods.

The highest points are Tornimägi (68 metres above sea level) and Andrusmägi (54 m a.s.l.), both located on an edge agglomerate and high dune ridges, resulted from the retreat of the continental ice sheet, on Kõpu Peninsula. Tornimägi Hill appeared from the waters of the Baltic Ice Lake approximately 11,000 years ago and it is still the highest point in West-Estonia.

Hiiumaa's landscapes are varied, because the surface has risen from the sea at different times and development stages. The relief has been shaped by the sea. The landscapes are characterised by beach ridges, coastal terraces and beach dunes.

The varied topography, surface, soils, and maritime climate have led to the diversified vegetation – approximately 1,000 species of vascular plants grow here.

As to mineral resources, sand, gravel, peat, limestone, mineral water, and medicinal mud are found in Hiiumaa.

In 2012, 16 protected areas, 17 limited conservation areas, and 30 species' protection sites have been established in Hiiu County. Five parks, 21 primeval trees, 26 erratic boulders, three landscape objects and four groups of primeval trees are under protection.

This publication gives a survey of the county's protected natural objects, their locations and values.



Photo: Trunkless pine in Ristna, T. Tänavsuu

## NATURE RESERVES

Tahkuna Nature Reserve  
 Pihla-Kaibaldi Nature Reserve  
 Leigri Nature Reserve  
 Tihu Nature Reserve  
 Kõrgessaare Nature Reserve  
 Paope Nature Reserve  
 Kõpu Nature Reserve

## LANDSCAPE PROTECTION AREAS

Kukka Landscape Protection Area  
 Luidja Landscape Protection Area  
 Sepaste Landscape Protection Area  
 Tilga Landscape Protection Area  
 Taresta Landscape Protection Area  
 Sarve Landscape Protection Area  
 Vahtrepa Landscape Protection Area  
 Käina Bay – Kassari Landscape  
 Protection Area  
 Hiiumaa Islets Landscape  
 Protection Area

## PROTECTED PARKS

Suuremõisa Manor Park  
 Vaemla Manor Park  
 Kärkla Beach Park  
 Kärkla City Park  
 Kõrgessaare Park

## PRIMEVAL TREES

English Oak  
 Heistesoo Birches / Soosaare Birches  
 Jaaksoni Oak  
 Kandle Pine  
 Mihkli Black Alder  
 Northern red oak /  
 Mihkli Northern Oak  
 Hybrid of black and grey alder /  
 Heistesoo Alder  
 Sülluste Black Pine  
 Taresta Black Alders (2)  
 Tärkma Sacrificial Oak  
 Vaemla Silver Maple  
 Vaemla Sycamore Maple  
 Veski Yews (2) / Õngu Yew  
 Ülendi Lime or Sacred Lime /  
 Ülendi Linden

## ERRATIC BOULDERS

Heilu Erratic Boulder  
 Helmerseni Boulder Field /  
 Helmerseni Rocks  
 Hiiesaare Silmakivi Rock (*Eye Rock*)  
 Härjakivi Rock (*Ox' Rock*)  
 Kukka Rock  
 Kukka Field Rock  
 Kuradikivi Rock (*Devil's Rock*)  
 Kõpu Large Rock / Lepistepao Large Rock /  
 Kõrgessaare Large Rock  
 Kärkla Beach Rock;  
 Kärkla Erratic Boulder  
 Murro Erratic Boulder /  
 Viiri Erratic Boulder  
 Mägiää Erratic Boulder /  
 Mägipe Erratic Boulder  
 Nõrgakivi Rock (*Weak Rock*)  
 Palade Erratic Boulder  
 Paluküla three boulders  
 Paluküla Erratic Boulder  
 Põlise Leppe Rocks  
 (*Rocks of Ancient Agreement*) /  
 Põhilise Leppe Rocks  
 (*Rocks of Primal Agreement*)  
 Põrgukivi Rock (*Hell Rock*)  
 Erratic Boulder Antu's Rock  
 Suurikpõllu Large Rock  
 Tahkuna Huge Erratic Boulder  
 Rock of Teomeeste leivalaud  
 (*Serfs' Bread Table*)  
 Tubala Erratic Boulder / Tõll's Rock  
 Tõllukivi Rock (*Tõll's Rock*)  
 Ungrukivi Rock  
 Unikivi Rock  
 Vanapagana Rock  
 (*Old Heathen's Rock*)

## LANDSCAPE OBJECTS

Kurisoo Sinkhole  
 Kurisu Sinkhole  
 Palade Spring of Silmaallikas  
 (*Eye Spring*) / Kukemäe Spring

## GROUPS OF TREES

Habitat of Putkaste Yews / Leluselja Yews  
 Sanglepa (*Black Alder*) Alley (4.7 km)



Photo: Kaleste Beach, D. Leenurm

## LIMITED CONSERVATION AREAS

Hiu Shallows Limited Conservation Area  
 Hirmuste Limited Conservation Area  
 Kuri-Hellamaa Limited Conservation Area  
 Kõpu-Vaessoo Limited Conservation Area  
 Kõrgessaare-Mudaste Limited Conservation Area  
 Luhastu Limited Conservation Area  
 Paope Alvar Limited Conservation Area  
 Pihla-Kurisu Limited Conservation Area  
 Prassi Limited Conservation Area  
 Pühalepa Limited Conservation Area  
 Suureranna Limited Conservation Area  
 Undama Mire Limited Conservation Area  
 Vanajõe Limited Conservation Area  
 Vanamõisa Bay Limited Conservation Area  
 Viilupi Limited Conservation Area  
 Vilivalla Limited Conservation Area  
 Väinamere (*Sea of Straits*) Limited Conservation Area (in Hiiumaa County)





Photo: View from Tahkuna Lighthouse, V. Leenurm

## PROTECTED AREAS

Protected areas are areas maintained in a state unaltered by human activity or areas with partial restriction on economic activities where the natural environment is preserved, protected, restored, researched or introduced.

According to the objective of protection and the strictness of restrictions on economic activities, the protected areas are divided as follows:

- **a national park** is a protected area prescribed for the preservation, protection, restoration, research and introduction of the natural environment, landscapes, cultural heritage and balanced use of the environment of the protected area;
- **a nature reserve** is a protected area prescribed for the preservation, protection, restoration, research and introduction of the natural environment.

The zones possible in a nature reserve are:

- (1) **a strict nature reserve** is a land or water area of a protected area whose natural status is unaffected by direct human activity and where the preservation and development of natural biotic communities is ensured only through natural processes. All types of human activity are forbidden within a strict nature reserve, and persons are prohibited from staying in such reserves;
- (2) **a conservation zone** is a land or water area of a protected area prescribed for the preservation of natural and semi-natural biotic communities established or to be developed therein. Mineral resources present within a conservation zone are not deemed to be resources intended for exploitation;
- (3) **a limited management zone** is a land or water area of a protected area where economic activities are permitted, taking the restrictions provided by the Nature Conservation Act into account.

- **A landscape protection area** is an area prescribed for the preservation, protection, restoration, research, introduction and regulation of use of landscapes of the protected area.

A park, arboretum and forest stand are special types of landscape protection area and the conservation zone and limited management zone are the zones possible in a landscape protection area.

In addition to protected areas, the Nature Conservation Act of Estonia provides the following protected natural objects:

- **a limited conservation area** is an area designated for the conservation of habitats, for the preservation of which the impact of planned activities is estimated and activities liable to damage the favourable conservation status of the habitats are prohibited. A limited conservation area is established with the aim to ensure the favourable conservation status of wild fauna, flora and fungi;
- **an individual protected natural object** is an animate or inanimate natural object of scientific, historic, cultural or esthetical value, such as a tree, spring, erratic, waterfall, rapid, bluff, terrace, outcrop, cave, or karstic form or system;
- **a protected species** is a taxonomical unit of a species of fauna, flora or fungi, whose individuals, habitats or places of finding are protected. Protected fossils and minerals are fossils or minerals of a protected category, specimens or places of finding of which are protected.

According to the extent of danger, protected species are divided as follows:

- species which are in danger of disappearance in Estonia, whose population been reduced as a result of human activity, whose habitats have been damaged and whose extinction in the Estonian wild is likely, are included in **protected category I**;
- species which are in danger due to their small or reducing populations and whose range in Estonia is reducing due to overexploitation, destruction or damaging of habitats are included in **protected category II**;
- species whose population is endangered by the destruction or damaging of habitats and has been reduced to a point where they are believed to move into the endangered category if the causal factors continue operating are included in **protected category III**. They are species which were included in protected category I or II but which, due to application of necessary protective measures, do not experience a danger of destruction.

**A species' protection site** is an area located outside of a protected area or its limited management zone, delimited and used pursuant to special requirements, and which is:

- (1) the reproduction site or place of other periodic concentration of protected animals;
- (2) the natural habitat of a protected plant or fungus;
- (3) the spawning site of salmon or river lamprey;
- (4) the hibernation site of brown bear;
- (5) the natural habitat of crayfish;
- (6) a badger sett with more than ten entrances.

**Natural objects protected at the local government level** are valuable landscapes representing the specific character of the natural and cultural environment, settlement patterns or land use, which has not been placed under protection as an individual protected natural object and is not located within a protected area.



Photo: Sandy region at Kaibaldi, K. Saarna

## NATURE RESERVES

**THE TAHKUNA NATURE RESERVE** is located on Tahkuna Peninsula and covers an area of 1,869 hectares. There are dry boreal forests with no or little impact of human activities (spruce forests with bilberries, pine forests with cowberries), dunes and dune forests, mires and overgrown lakes.

The protected area encompasses Estonia's largest habitat of the yew. Lake Lehtma and the surrounding forests belong to the areas with the strictest restrictions on economic activities – this is a strict nature reserve where no human activity, including staying there, is permitted on 184 ha. This is the only area with such a strict protection regime in Hiiumaa.

**The RMK (State Forest Management Centre) Karjaselja Forestry Study Trail** (1 km), marked with an information board, starts from the Karjaselja Road. This trail introduces different types of habitats, gives a survey of forest cultures and forestry methods, and creates a picture of a forest as a complex of habitats of plants and animals.



Photo: Fly orchid (*Ophrys insectifera*), T. Tänavsuu

**THE PIHLA-KAIBALDI NATURE RESERVE** has the area of 3,780 ha. It aims at protecting the varied landscapes, valued habitats and protected species. There are wooded dunes with humid slacks, raised bogs, transition mires and quaking bogs, deciduous swamp woods, dry sand heaths with *Calluna* and *Genista*. Estonia's largest region with loose sand (12 ha) lies in the protected area.

The Pihla Bog is a bog with the deepest (4 metres!) peat layer in Hiiumaa. The bogs in this region make up a significant water conservation area of the island.

Numerous protected species of plants grow in the protected area, the rarest of which are the green shield-moss, bog orchid (*Hammarbya paludosa*), lady's slipper orchid, coral root, fen orchid, fly orchid, *Dactylorhiza cruenta*, and brown beak sedge.

**THE LEIGRI NATURE RESERVE** with the area of 458.7 ha has been founded to conserve the species of protected category I, the forest ecosystem and diversified biota.

The protected area encompasses a raised bog, a species-rich fen, bog woodland, natural old forests, deciduous swamp woods. Several protected species of plants, such as the sweet gale, fir clubmoss and lesser butterfly orchid, grow in the protected area. The common crane breeds in the bog communities.





Photo: Lake Tihu, D. Leenurm



Photo: Crane (*Grus Grus*), L. Michelson

**THE TIHU NATURE RESERVE** has the area of 1,399.6 ha. The protected area has been founded to protect the natural forests of little human impact, the mires, lakes of Vanajõe and Tihu, the surface forms dating back to the Limnea Sea, as well as the valuable habitats. The reserve encompasses three lakes of Tihu, the Vanajõgi Valley, which is an important spawning site of the sea trout, the Õngu Mire, the wooded dunes at Leemeti, and a habitat of the European yew.

The protected species of plants growing here include the bog orchid, coral-root orchid, lesser twayblade, European yew, and broad-leaved helleborine. Several rare species of insects, such as the large white-faced darter, lilypad whiteface, and scarce heath, live in the Tihu Nature Reserve. The protected area is a habitat for the European mink.



Photo: Vanajõgi River Valley, T. Koit

**The RMK Vanajõgi River Valley Study Trail** has two routes: the longer is 1 km and the shorter is 0.4 km long. The trail runs along the riverside and the valley. The Vanajõgi River (*Old River*) is cold-watered, fast-flowing and crooked. The trail reveals sand outcrops which, in places, tower as high as six-metre-high slopes.

**The RMK Leemeti-Õngu Hiking Trail** has two routes: 2 km and 3 km long. The trail introduces different types of forests. A boardwalk takes you to the central lake of Tihu, which lies on a bog plain.

**THE KÕRGESSAARE NATURE RESERVE** with its area of 69.1 ha encompasses coastal meadows, the Pihla Springs, the Kurisu-Lauka karst area, and natural old forests. The reserve is a habitat of at least 15 species of orchids grow, the rarest of them being the lesser twayblade, lady's slipper orchid, fly orchid, and musk orchid. The protected area is an important stop-over site for migratory birds. Some protected species, such as the common and arctic terns, have also been breeding here.





Photo: Lady's slipper orchid (*Cypripedium calceolus*), T. Tänavsuu

On the **RMK Kõrgessaare Orchid Study Trail** ten species of orchids grow in the natural way. The first to bloom in late May or early June are military orchids, followed by lesser butterfly and early marsh orchids. The last to flower in August are the dark red and marsh helleborines.



Photo: Orchid study trail, Ü. Soonik



Photo: Pond of Veskilais, S. Lahemaa



Photo: Coast at Ristna, T. Tänavsuu

**THE PAOPE NATURE RESERVE** covers 2,215 hectares (incl. 1,601 ha under water). The protected area aims at conservation of the coastal and marine ecosystems, and of the biodiversity of meadow, forest and freshwater communities. An approximately 600-hectare-large ebb area, “sown over” with erratic boulders, lies in the Paope Conservation Zone.

The Armioja Conservation Zone includes some ponds, or “lais”, such as Tammelais and Veskilais, which are important fish spawning sites.

The protected area encompasses some sandbanks covered by sea water, sandflats and mudflats, coastal lagoons, small islands and islets, extensive coastal meadows, *Juniperus communis* formations, brooks, springs, alvars, and natural old forests. The protected species to be met here are the barnacle goose, ringed plover, common tern, and common redshank.

**THE KÕPU NATURE RESERVE** with the area of 3,064 ha is located on Kõpu Peninsula, which is an interesting region in terms of geology. West-Estonia's highest point – **Tornimägi Hill** (over 68 m a.s.l.) – is situated here. The protected area has been established to conserve the natural landscapes and biotic diversity, species and their communities. The main surface forms are coastal scarps, beach ridges, and dunes, which formed as a result of the glacial age. The most splendid views open on the hills of Linnaru and Korbi, and on the coast at Ristna.





Photo: Sea holly (*Eryngium maritimum*), T. Tänavsuu

The reserve is predominantly covered with forests, among which boreal and heath forests prevail. There are also plenty of natural old forests, which alternate with small calcicolous springfens, the largest of which being the fens of Mõirasoo and Heistesoo. The following species of birds breed in the area: the European nightjar, corncrake, black woodpecker, common crane, woodlark, and honey buzzard.

Numerous protected species of plants grow in the area: the sea holly and sand couch-grass on the coast; the green shield-moss, common ivy, and European yew in the forests; the marsh pennywort and black bogrush in the wetlands. The species of orchids growing here are the burnt orchid, narrow-leaved marsh orchid, fly orchid, *Dactylorhiza cruenta*, and lesser twayblade.

**The RMK Palli Hiking Trail** consists of two parts: the first introduces old spruce and pine forests and temporarily flooded swamp woods, while the other shows the sea and coastal habitats.

**The RMK Rebastemäe Study Trail** with the length of 1.5 km introduces different types of forests and other habitats.



Photo: Mägipe Erratic Boulder, T. Tänavsuu

**The RMK Neljateeristi Study Trail** (3.3 km) compares cultivated forest plantations and natural old forests, and shows the knotty pine trees on the coast.

**The RMK Mägipe Study Trail** (2 km) introduces, with open views of the sea, a natural old forest, wooded dunes and different coastal habitats.

**The RMK Kaleste Hiking Trail** (1.8 km) passes through rare dry pine forests with different species of mosses as well as paludifying swamps. The Kaleste Beach gives a survey of coastal communities.

**The RMK Ristna Hiking Trail** (1.5 km) introduces different types of forests, stages of forest management as well as the differences in the communities of forest plantations and natural forests.

**By the RMK Hirmuste Hiking Trail** (1.3 km), old valuable spruce and pine forests grow, which alternate with marsh alder wood. The trail also gives a survey of wooded dunes and coastal habitats.





Photo: Tareste Boardwalk, T. Tänavsuu

## LANDSCAPE PROTECTION AREAS

**THE KUKKA LANDSCAPE PROTECTION AREA** has been founded to protect the springfen and its biodiversity. With its area of 151 ha, it is Estonia's largest spring-fed fen, where in places groundwater appears to the surface in the form of springs.

The area is particularly rich in different species of orchids, such as one-leaved bog orchid, fen orchid, coral root, fly orchid, *Dactylorhiza cruenta*.



Photo: Sarve Landscape Protection Area, T. Tänavsuu



Photo: Coral root (*Dactylorhiza trifida*), H. Luukas

**THE LUIDJA LANDSCAPE PROTECTION AREA** (67.5 ha) aims at protecting the unique black alder wood growing on sand dunes. The area covers sand beaches with permanent vegetation, beach dunes, wooded dunes and brooks. The black alders have been planted to fix the shifting dunes.

The RMK Luidja-Paope Hiking Trail runs along the edge of the black alder wood across the beach dunes as far as Paope.

**THE SEPASTE LANDSCAPE PROTECTION AREA** (36.5 ha) has been established to protect the oak forest, a relatively rare type of forest in Estonia, its semi-natural habitats and species.

**THE TILGA LANDSCAPE PROTECTION AREA** (39.7 ha) protects the pine forest and the protected species of plants in South-Hiiumaa's landscape.

**THE TARESTE LANDSCAPE PROTECTION AREA** covers 452.5 ha, out of which 248.9 ha is under the sea, and it protects the local fauna and flora and their habitats. The types of habitats represented in this area are coastal lagoons, coastal meadows, deciduous swamp woods, and humid dune slacks. Common cranes and corncrakes live in these habitats. As to plants, the hairy bittercress, lesser butterfly orchid, greater butterfly orchid, common twayblade, dark red helleborine, fir clubmoss, can be found.

The RMK Kärkla-Tõrvanina Hiking Trail is 7 km long.



Photo: Musk orchid (*Hermidium monorchis*), T. Tänavsuu



Photo: Red helleborine (*Cephalanthera rubra*), M. Sepp





Photo: Kallaste Cliff, T. Tänavsuu



Photo: Cape of Sääretirp, K. Saarna

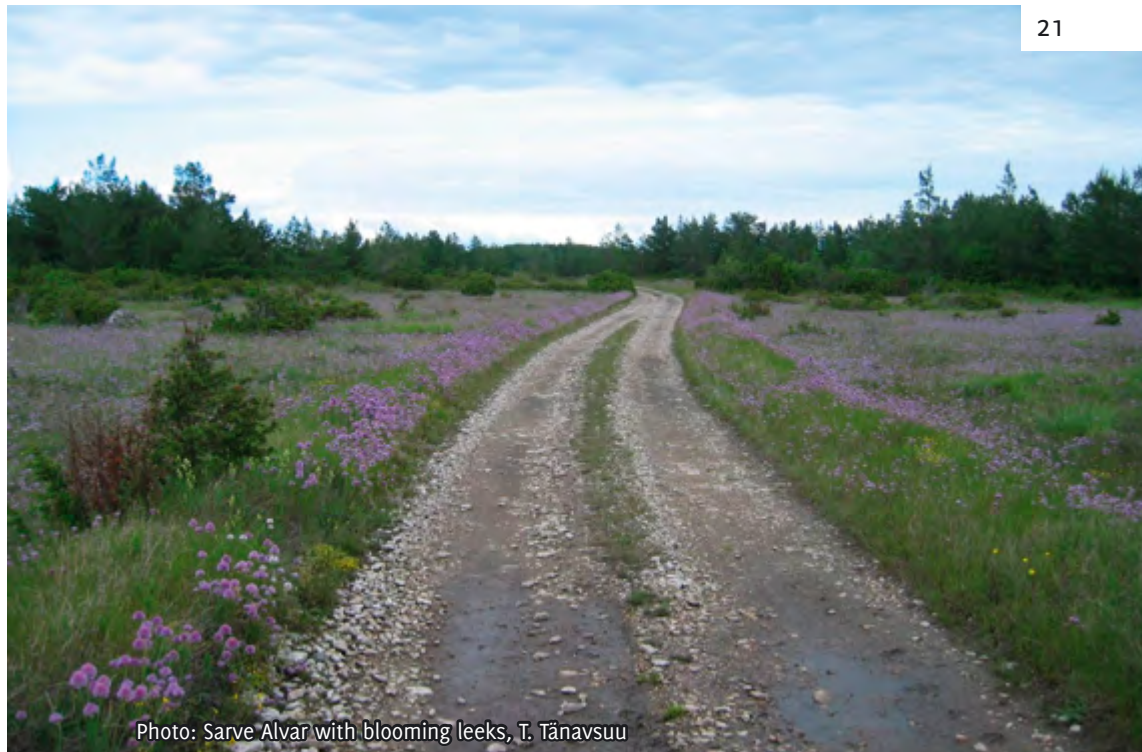


Photo: Sarve Alvar with blooming leeks, T. Tänavsuu

**THE SARVE LANDSCAPE PROTECTION AREA** (679 ha) encompasses Sarve Peninsula, in the western and eastern side of which Silurian limestone is denuded. The area protects unique geological objects of scientific value (drift lines dating back to the Limnea Sea) and the related natural and semi-natural habitats.

Limestone shingle ridges, partially covered with vegetation, attract interest. In the middle of the peninsula, there is an alvar with stunted but species-rich vegetation. The area has an extreme moisture regime, being too damp in spring and too dry and droughty in summer.

Plenty of rare and protected species of plants, such as the wall rue, maidenhair spleenwort, red helleborine, early purple orchid, fly orchid, *Dactylorhiza cruenta*, lady's slipper orchid, musk orchid, grow in the protected area. Some protected species of mosses and lichens can also be found: *Tortella rigens*, *Vulpicida tubulosus*, and *Cladonia convoluta*; and plenty of *Fulgensia bracteata* and *Psora decipiens* on the alvars.

**THE VAHTREPA LANDSCAPE PROTECTION AREA** has the area of 1,388 ha, 452 ha of which is under the sea. The objective of the protected area is to restore and maintain the semi-natural communities, to conserve the Kallaste Cliff, and to protect the forest habitats and species. An Ordovician limestone denudation, forests with little impact by human activities, as well as species-rich alvars, deciduous swamp woods and coastal meadows can be found here. The protected area also covers the islets of Vohilaid and Uuemaarahu with rich avifauna. The sea between the islets encompasses valuable shallows as well as mudflats and sandflats, which offer habitats to different invertebrates, birds and fish.



Photo: Tilga Landscape Protection Area, D. Leenurm









Photo: Coastal meadow at Kassari, T. Tänavsuu



Photo: Transport of sheep to Saarnaki Islet, R. Lillemäe



Photo: Bog forest, T. Tänavsuu

**THE KÄINA BAY – KASSARI LANDSCAPE PROTECTION AREA** covers 5,652 ha, 915 ha of which lies beneath Käina Bay. The values of the area are its juniper stands, old deciduous forests, well-managed wooded meadows, coastal meadows, shingle beach ridges, and the cape of Sääretirp.

Käina Bay, with the average depth of 0.5 m, is well-known for its stock of medicinal mud. There are 15 islets, several reed beds, and Hiiumaa's most important breeding and stop-over sites of waterfowl. 192 species of birds stop or breed on the bay or nearby. The rarest species are the avocet, arctic tern and common tern. The bittern, Baltic dunlin and white-tailed eagle can also be seen. The most common species to nest and breed here are the cormorant, sedge warbler and mute swan. The bay is an important spawning site with suitable conditions for young fish. In 1997, Käina Bay was entered into the Ramsar List of wetlands of international importance.

The **RMK Orjaku Study Trail** covers two routes: the 0.7-kilometre-long Rooring, also known as Roostikuring (*Reed (Bed) Circle*), and the three-kilometre-long Orjaku Circle. The trail introduces the islet of Silmakare in the bay, the reed bed, pasture with junipers, coastal meadow. Splendid views of Käina and Jausa Bays open from the bird-watching tower.



Photo: Saarnaki Islet, K. Sarv



Photo: Salinõmme Bay, V. Leenurm

**THE HIIMUMAA ISLETS LANDSCAPE PROTECTION AREA** (3,193 ha) covers the sea area to the west of Hanikatsi Islet together with some small islands, as well as Soonlepa Bay and the halophytic habitats of Salinõmme. The protected area aims at the protection of the species of plants and animals typical of Hiiumaa's south-east coast, the landscapes, architectural sites, and the stop-over and breeding places of migratory birds.

The islets' **protection area** was initiated from the deciduous forest on Hanikatsi Islet, which was placed under protection in 1961.

The halophytic habitat of Salinõmme is the largest of its kind known in Estonia. The area has been included into the Ramsar List of Wetlands. The protected area has been founded in order to retain the diversity of the heritage communities formed on the islets. More than 600 species of vascular plants, including over 330 on Hanikatsi, have been found on the islets. The isles are essential stop-over and breeding sites for numerous species of birds. Approximately 200 species of birds have been registered in the protected area, out of which 110 breed locally. The neighbourhood of the islets Ahelaid and Kõverlaid offers a habitat for the ringed seal, which is the only protected species of animals here. The protected species of plants growing here are *Dactylorhiza cruenta* and fly orchid.





Photo: Hiiumaa islets Landscape Protection Area, L. Michelson



Photo: Salinõmme Bay, V. Leenurm



Photo: Suuremõisa Maple-Oak Alley, D. Leenurm

### PROTECTED PARKS

The composition of the manor parks in Hiiumaa has followed the style of the English garden, or of the landscape park: farther away from the mansion the parks take the shape of forests. The parks are protected in order to retain their historical environment and biodiversity. The protected parks have modest compositions and few elements.

**Five parks are under protection in Hiiumaa:** Kärkla City Park, Kärkla Beach Park, Kõrgessaare Park, Suuremõisa and Vaemla Manor Parks.

**In addition, some groups of primeval trees have been placed under protection:** the Putkaste (Leluselja) Yews, the Suuremõisa Maple-Oak Alley, and the Sanglepa (*Black Alder*) Alley (partially located in Suuremõisa Manor Park).

**SUUREMÕISA MANOR PARK** is the most impressive park in Hiiumaa. It was founded in 1755 in the strict Baroque-style but was later changed into an English garden. The park with the area of 45 ha encompasses a large lawn, a spring-fed pond system, and a forest park between the Suuremõisa River, which crosses the park, and the Salinõmme Road. More than 50 species of trees and shrubs make the park rich and varied. Estonia's tallest and thickest Sitka spruces and Japanese larches grow in the park. The Sanglepa Alley and the Suuremõisa Maple-Oak Alley, placed under protection, are also located in the park.

**The RMK Suuremõisa Park Study Trail** consists of a three-kilometre-long and a two-kilometre-long route (totally 4.5 km if you walk them both). The trails have established to learn about different species.





Photo: Vaemla Manor Park, T. Tänavsuu

**VAEMLA MANOR PARK** is a 6.8-hectare-large landscape-style park whose road and path network has been destroyed, while two round ponds have survived. Despite the small area, the park includes 43 species of trees and shrubs. Sycamore maples, silver maples, copper beeches, elms, as well as Siberian larches and European silver firs grow there.

**KÄRDLA BEACH PARK**, shaped as an English garden, is located some hundred metres away from the sea. 29 species of trees and scrubs grow in the area of 3.8 hectares – so the area is densely covered with trees and scrubs. The main local species here are the maple, ash, elm and spruce; the introduced species include the larch, fir, and Eastern white pine.

**KÄRDLA CITY PARK** is an English-style park with the area of 4.6 ha in the middle of Kärdla City. The most common species of trees here are the grey poplar and European ash.

### INDIVIDUAL OBJECTS

In Hiiumaa, 21 primeval trees and 26 erratic boulders have been placed under protection as individual protected natural objects, and two sinkholes and one spring as individual landscape objects. They have deserved their status of protection for their measurements, age, historic, cultural or esthetical value.

### TREES

21 primeval trees have been placed under protection in Hiiumaa, though several of them have been destroyed, broken, or dried. The trees, subject to be excluded from the list are: Ülendi Juniper, Karmu Pyramidal Juniper, Leetselja Junipers, Nasva Junipers, Putkaste Pine, and Emmaste Black Alder.



Photo: Hanikatsi Deciduous Forest, K. Sarv



The protected primeval trees, by Tiit Leito, 2007

Name of tree	Rural municipality	Village, town, city	Circumference (m)	Height (m)
Jaaksoni Oak	Emmaste	Mänspe	3.3	23
Kandle Pine	Kõrgessaare	Meelste	3.2	20
Mihkli Black Alder	Kõrgessaare	Lilbi	3.1	19
Mihkli red oak / Mihkli Northern Oak	Kõrgessaare	Lilbi	2.5	15
Sülluste Black Pine	Kõrgessaare	Sülluste	2.6	18
Taresta Black Alders (2)	Pühalepa	Taresta	3.2	25
Tärkma Sacrificial Oak	Emmaste	Tärkma	5.1	11
Veski yews (2; one is destroyed)	Emmaste	Õngu	0.6	8
Ülendi Lime or Sacrificial Lime / Ülendi Linden	Kõrgessaare	Ülendi	6	5

### ERRATIC BOULDERS AND BOULDER FIELDS

In Hiiumaa, 26 erratic boulders have been placed under protection. Each erratic boulder has a legend of its origin, which is mostly connected with Leiger, the giant hero of Hiiumaa, his brother Great Tõll in Saaremaa, or the Old Heathen.

The largest erratic boulders

Name	Place of location	Length (m)	Width (m)	Height (m)	Circumference (m)
Hiiesaare Silmakivi Rock ( <i>Eye Rock</i> )	Hiiesaare Village, Pühalepa Rural Municipality	13	10.5	4.5	32
Kukka Rock	Kukka Village, Pühalepa Rural Municipality	16.4	11	3.7	42
Kõpu / Lepistepao / Kõrgessaare Suurkivi Rock ( <i>Large Rock</i> )	Ülendi Village, Kõrgessaare Rural Municipality	10.3	7.7	5.3	27.5
Mägiää / Mägiää Erratic Boulder	Mägiää Village, Kõrgessaare Rural Municipality	9	4.5	3.5	27
Paluküla Erratic Boulder	Paluküla Village, Pühalepa Rural Municipality	8.9	5.8	3.3	26
Põrgukivi ( <i>Hell Rock</i> )	Ojaküla Village, Kõrgessaare Rural Municipality	10.3	7.4	5.3	27.5
Erratic boulder Antu's Rock	Villemi Village, Käina Rural Municipality	10.3	4.5	2.1	26.1
Tahkuna Huge Erratic Boulder	Lehtma Village, Kõrgessaare Rural Municipality	10.9	9.1	4.6	30.3



Photo: Helmerseni Boulder Field, T. Tänavsuu



Photo: Põlise Leppe Rocks (*Rocks of Ancient Agreement*), L. Michelson





Photo: Marsh helleborine (*Epipactis palustris*), M. Sepp

## INDIVIDUAL LANDSCAPE OBJECTS

**THE KURISOO SINKHOLE** is one of the largest sinkholes in Hiiumaa. It is an oval karst hollow, covered with grass.

**THE KURISU SINKHOLE** is a funnel-shape hole where the Kurisu Brook disappears into the ground. In summer, when the brook is small, the bedrock and a small cave entrance can be seen at the bottom of the sinkhole.

In addition to the sinkholes, the spring of **SILMAALLIKAS** (*Eye Spring*) at Palade is under protection.

## LIMITED CONSERVATION AREAS

Limited conservation areas have been founded to protect definite habitats. In limited conservation areas only such human activities are permitted which do not damage the species and communities protected in that limited conservation area. 17 areas in Hiiumaa belong to the Natura 2000 network, which partially overlap with Hiiumaa's protected areas.

In order to protect species-rich semi-natural habitats (wooded meadows and pastures, alvars, coastal meadows), the following limited conservation areas have been established: **Hirmuste, Kuri-Hellamaa, Kõpu-Vaessoo, Luhastu, Pühalepa, Suureranna, Viilupi, Paope Alvar, Pihla-Kurisu.**

**THE PRASSI LIMITED CONSERVATION AREA** has been founded to protect the transition mire and quaking bog as well as the bog woodland.

**THE UNDAMA MIRE LIMITED CONSERVATION AREA** has been formed for the protection of the species-rich fen as well as the deciduous swamp woods.

**THE VANAJÕE LIMITED CONSERVATION AREA** protects the river of Vanajõgi (*Old River*).

**THE KÕRGESSAARE-MUDASTE AND VANAMÕISA BAY SPECIAL CONSERVATION AREAS** are valued as large shallow bays with mudflats and sandflats. There you can find coastal lagoons, small islands and islets, coastal meadows, sandy beaches with perennial vegetation, perennial vegetation of stony banks, juniper stands, and natural old woods.

**THE HIIU SHALLOWS LIMITED CONSERVATION AREA** has been established to protect the reefs, and the essential habitats of the bladder wrack and red seaweed, as well as of the blue mussel and *Gammarus*.

**THE VÄINAMERE (SEA OF STRAITS) LIMITED CONSERVATION AREA** aims at protecting different types of habitats, such as sandbanks covered with sea water, coastal lagoons, large shallow bays, reefs, drift lines, perennial vegetation of stony banks, halophytic habitats of mudflats and sandflats, etc. The area also encompasses habitats of the ringed seal, grey seal, bullhead, and river lamprey.





Photo: Vanamõisa Bay, D. Leenurm



Photo: Väinameri Sea (*Sea of Straits*), V. Leenurm



Photo: Kurisu Sinkhole, T. Tänavsuu



Photo: Southern coast at Ristna, T. Koit





Photo: Green shield-moss (*Buxbaumia viridis*), R. Miller

## PROTECTED SPECIES

Due to the mild maritime climate and varied soils, Hiiumaa has diversified vegetation: approximately 1,000 species of vascular plants grow here. Due to the human activities or, on the contrary, because of the lack of human interference, the number of some species has critically decreased and needs people's direct help to maintain or restore their population. Proceeding from the needs of specific species, restrictions on human activities have been laid down in order to preserve the endangered species in the protected areas. In Estonia, 570 species of plants, fungi and animals have been placed under protection. **It is prohibited to catch, pick or disturb the protected species.**

## PLANTS

Rare plants grow mostly in the protected areas. In 2012, 137 protected species of plants, fungi and mosses grew in Hiiumaa, out of which six species were under protected category I, 69 under protected category II, and 62 under protected category III.

Hiiumaa's mycoflora is unique both in Estonia and all over Europe. A very rare fungus – *CERIPORIA TARDA* – grows on Kõpu Peninsula in Hiiumaa, which is its only known habitat in Europe. Here, its fruiting bodies can be found on a few lying spruce trunks in the bilberry-pine forest. As all the fungi of the genus *Ceriporia*, this species also causes white mold of wood.



Photo: Allseed (*Radiola linoides* Roth), R. Miller

Hiiumaa's rarest plant is the **ALLSEED** (*Radiola linoides* Roth) of protected category I. There have been only two habitats in Estonia and both of them in Hiiumaa, but only one has survived. The allseed grows on acidophilous and damp sands. Its flowers are small and white. It has preserved thanks to purposefully established habitats.

The rarest species growing in Hiiumaa is probably the **INUNDATED CLUB MOSS** (*Lycopodiella inundata*).

The **GREEN SHIELD-MOSS** (*Buxbaumia viridis*) is a rare species of moss. Its only habitat in Estonia is in Hiiumaa. It grows on fallen thick tree trunks and stumps in old humid mixed forests. The green shield-moss is difficult to be noticed because it is only 2–3 mm high. In spring it has a yellowish-green crest of up to 1 cm in height. The moss has been placed under protected category I.

The **GHOST ORCHID** (*Epipogium aphyllum*) was found in Kõpu. This fungivorous orchid has no green leaves and thus it lacks chlorophyll. It blooms for only a week in July or August and cannot be noticed at any other time. The most typical habitats of the ghost orchid are shady spruce-mixed forests, damp deciduous forests and boggy spruce forests. The species is under protected category I.





Photo: Ghost orchid (*Epipogium aphyllum*), R. Miller



Photo: Medicinal leech (*Hirudo medicinalis*), M. Sepp

### ANIMALS

Besides plenty of rare plants, Hiiumaa is a home for numerous species of animals. 15 species, all of protected category III, are under protection. Among invertebrates, the **MEDICINAL LEECH** (*Hirudo medicinalis*) is under protection. The medicinal leech is one of the biggest leeches in Estonia. It can mostly be found in warm-water shallow lakes, and it occurs on dry land only at the time of breeding. In Estonia, the occurrence of the medicinal leech has been detected only in some single lakes, including the lakes of Tihu. The number of the individuals is gradually decreasing, because the species is endangered by changes in water regime, pollution of water bodies, and mining works. The medicinal leech has been placed under protected category II and listed in Annex V of the EU Habitat Directive.

Another species protected in Hiiumaa under the **EU Habitat Directive**, is the **BURGUNDY SNAIL** (*Helix pomatia*). In Estonia, it is the snail with the largest shell. It lives in parks, gardens, deciduous forests, etc, preferring semi-natural habitats affected by human activities. The Burgundy snail lives for up to 10 years. Its habitats in Estonia are rapidly expanding. It is found abundantly on Hanikatsi Islet and in Kassari. Although it is not under protection in Estonia any more, it has been entered into Annex V of the EU Habitat Directive.





Photo: River lamprey (*Lampetra fluviatilis*), M. Kesküla

As to the protected species of fish, the **SPINED LOACH** and **BULLHEAD** of protected category III occur in Hiiumaa. Several species, such as the river lamprey (*Lampetra fluviatilis*), have been entered into the annexes of the EU Habitat Directive.

The **RIVER LAMPREY**, representing the Linnean class of *Cephalaspidomorphi*, is a fish with a snake-like body with no scales, and with a funnel-like sucking mouth. The adult individuals live in the sea or brackish water, and travel into rivers for breeding. Lampreys have been found in several rivers of Hiiumaa. River lampreys are threatened by blockage of their spawning rivers with dams, dredging operations as well as their intensive catching during the breeding migration. River lampreys have been included into the lists of Annexes II and V of the EU Habitat Directive.

**20 species of vertebrates** are under protection in Hiiumaa; two species are of protected category I, eight of protected category II, and twelve of protected category III. **Furthermore, there are species of birds whose numbers by species at breeding and passage are difficult to determine as official data.**

The rarest vertebrate animal in Hiiumaa is the **EUROPEAN MINK** (*Mustela lutreola*), who is one of the most endangered species of animals in Europe. As an alternative of protection, a natural population was founded in Hiiumaa. The species has been placed under protected category I and has been entered into Annexes II and IV of the Habitat Directive.



Photo: European mink (*Mustela lutreola*), R. Lillemäe

The **GREY WOLF** (*Canis Lupus*) is one of the most adaptive large predators in the world. In our zone, wolves live in packs of up to ten individuals, although solitary animals also occur. It is estimated that currently 140-200 wolves live in Estonia. During the past years, only a few wolves have come to live in Hiiumaa. In 2011, a mated pair raised a family of offspring. Wolves have been included in Annex V of the Habitat Directive.

The rarest species of birds are the **black stork** (*Ciconia nigra*) and **white-tailed eagle** (*Haliaeetus albicilla*).



Photo: Wolf (*Canis Lupus*) in Hiiumaa in 2011, M. Põdra



Photo: Burgundy snails (*Helix pomatia*), T. Tammla





Photo: Baltic dunlin (*Calidris alpina schinzii*), K. Paomees

The first nest of the **BLACK STORK** in Hiiumaa was found in 1975, and the nest is still in use. The species is threatened by the decrease of natural woodlands and disappearance of slow-flowing forest brooks. This species is also very sensitive to disturbances. The black stork is under protected category I.

The **WHITE-TAILED EAGLE** (also known as the sea eagle) is Estonia's largest predatory bird. The nest of a pair of white-tailed eagles is usually at the top of an old pine or aspen tree. The edifice of a nest, mostly in use for decades, may weigh up to a tonne. It is estimated that there are 200–220 nesting pairs in Estonia, including up to 15 in Hiiumaa. In order to protect the white-tailed eagles, it is necessary to preserve the suitable habitats, to ensure undisturbance in the nesting period, and to keep the environment unpolluted. The white-tailed eagle has been placed under protected category I.

All in all, 26 species' protection sites have been established in Hiiumaa.

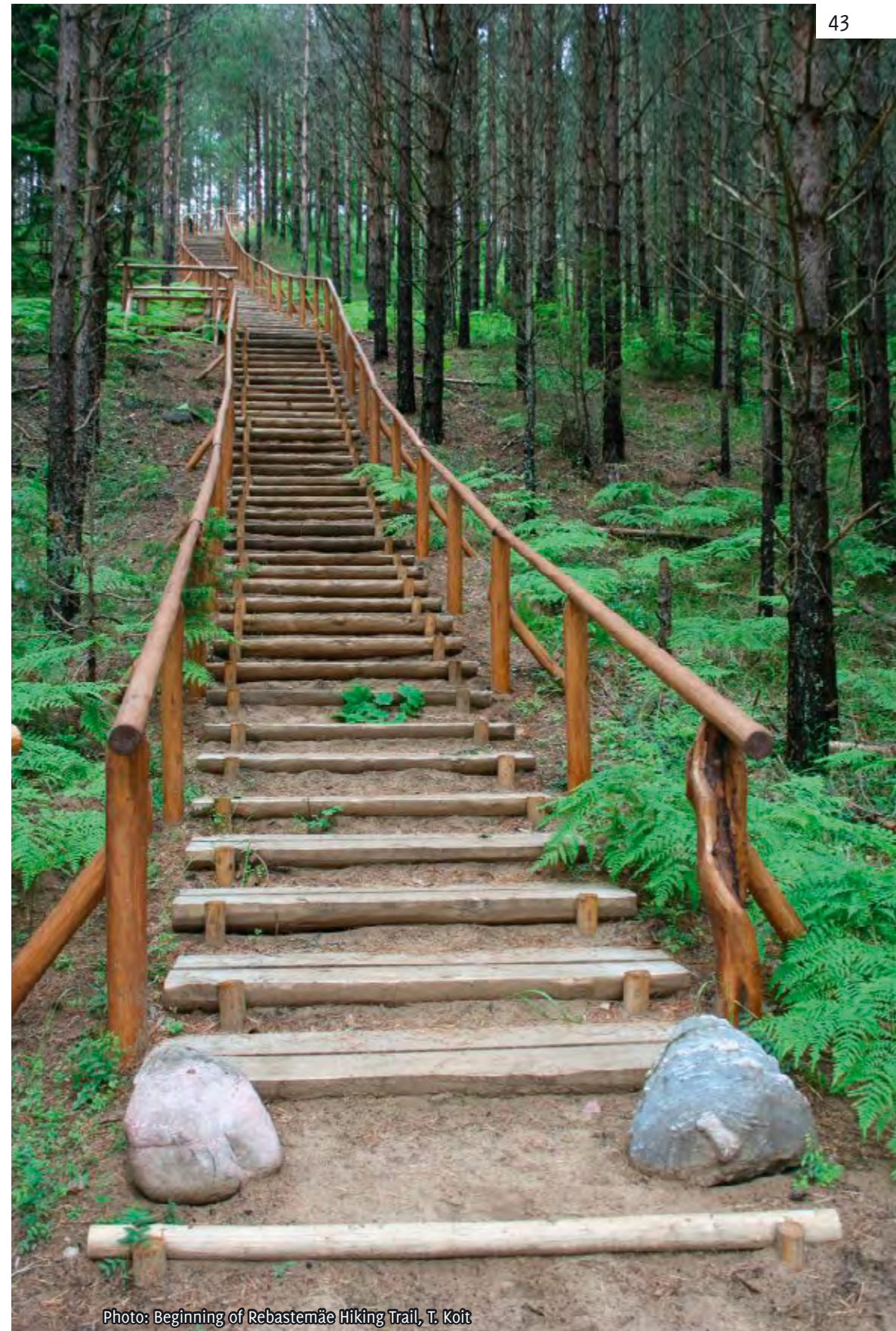


Photo: Beginning of Rebastemäe Hiking Trail, T. Koit





## NOTES

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