



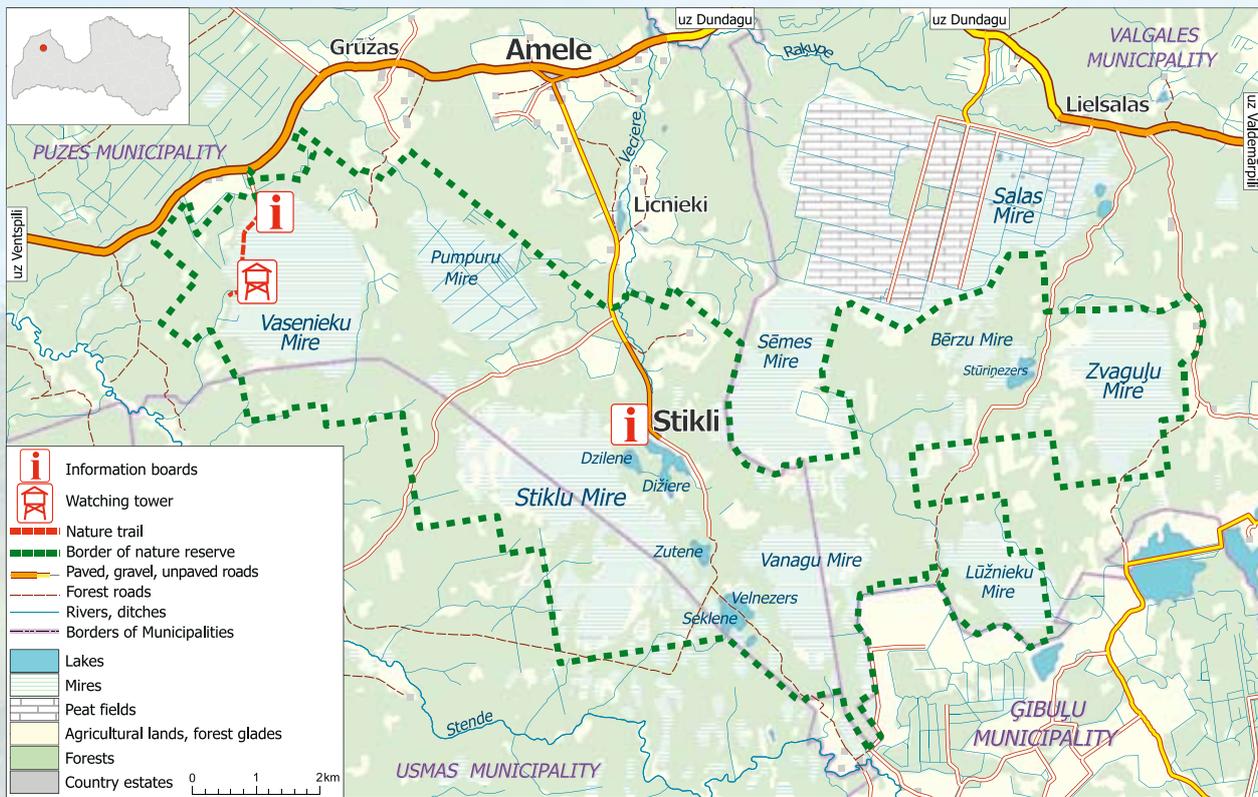
Especially  
protected  
nature  
area

# STIKLI MIRES

NATURE RESERVE



# STIKLI MIRES NATURE RESERVE



Autors: B. Strazdīna

**Location** Puze and Usma Municipalities, Ventspils District, Valdgale, Municipality Talsu District

**Established** 1977

**Total area** 1977 – 1,720 ha; 1999 – 6,636 ha

**Status**



**Especially protected nature area in Latvia – nature reserve.**

*Nature reserve is a natural or changed by human activities area of land that includes especially protected plants, animals and habitats. Stikli Mires is one of 274 nature reserves of Latvia.*



**Included in European network of protected territories Natura 2000.**

*Natura 2000 is the European Union network of especially protected nature areas, where every member state participates with its system of protected nature areas.*

*There are 336 Natura 2000 sites in Latvia; they cover 11.9 % of the territory of Latvia.*



**Internationally Important Bird Area.**

*Important Bird Areas (IBA) are sites with a high number and diversity of bird species. They are crucially essential for the conservation of the bird populations and sometimes for the survival of the species at all.*

*There are 71 Internationally Important Bird Areas in Latvia.*

**Habitats**

- forests (68 %)
- meadows (3 %)
- mires (28 %)
- freshwater (1 %)

**Mires have developed** 5,000-7,000 years ago

**Main nature values**

- the largest raised bog complex in Western Latvia

- 8 especially protected habitats of European importance and 2 in Latvia
- 109 especially protected plant and animal species in Latvia and Europe

**Negative influence**

- previous drainage of mire for peat extraction purposes
- intense forest management before the nature reserve was established
- drainage of forest and road construction
- changes within the hydrology of several lakes due to the activities of beavers

**Management plan** – elaborated by Latvian Fund for Nature for the time period 2006-2018. The main management activity is the prevention of mire desiccation by building of dams on the drainage ditches. It is carried out within the framework of LIFE-Nature project “Implementation of Mire Habitat Management Plan for Latvia”. In collaboration with Joint-Stock Company “Latvia’s State Forests” the management of Capercaillie leks is carried out.

**Individual regulations for protection and use of the nature reserve “Stikli Mires”** were adopted on July 24, 2007 (Cabinet Regulation No. 510).



*Photo: V. Baronija Vasenieki Mire.*

## DEVELOPMENT OF STIKLI MIRES

**Mire** is an area of land surface that is constantly or periodically waterlogged, has characteristic flora and fauna and where active peat formation takes place.

Stikli Mires are located in Ugāle Plain in Kursa Lowland and are the largest mire complex in Western Latvia. It has started to develop about 5,000-7,000 years ago. Six mires formed in the shallow water zone of the former Baltic Ice Lake: Vasenieki Mire, Stikli Dižpurvs Mire, Pumpuru Mire, Zvaguļu Mire, Vanagu Mire, Lūžnieku Mire. The complex includes also Sēme and Trīšautpurvs Mires that are outside the nature reserve, and Sala Mire that is partly is used for peat extraction.

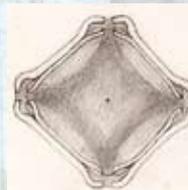
**Mire development.** In the waterlogged peat of the raised bog, remains of plants and animals almost fully decompose. The moss species characteristic for mires – *Sphagnum* – preserves very well; also its spores and pollen of other plant species growing there. Therefore, the plant composition of the peat can be identified as well as origin and mire development determined. Due to the decay of the bottom part of *Sphagnum* species the peat layer in the raised bog slowly but constantly increases – about 1 mm per year.

From all the raised bogs of Stikli Mires Nature Reserve, Vasenieki Mire was most studied. Maximum peat depth reaches 6 m. In order to obtain peat samples, boring was performed several times there. The aim was to study the mire origin and its development. Peat accumulation started there already before the Boreal period. Intense peat formation has been there during the last 3500 years, since the Atlantic time. The process was facilitated by the humid maritime climate. Vasenieki Mire has developed due to the paludification of a wet depression, but the other raised bogs of Stikli Mires Nature



Foto: M. Pakalne

Hare's-tail Cottongrass *Eriophorum vaginatum* and *Sphagnum* are the main peat formers.



Zīmējumu autore: J. Mežs

**baltalkšņa putekšņi**

**āra bērza putekšņi**

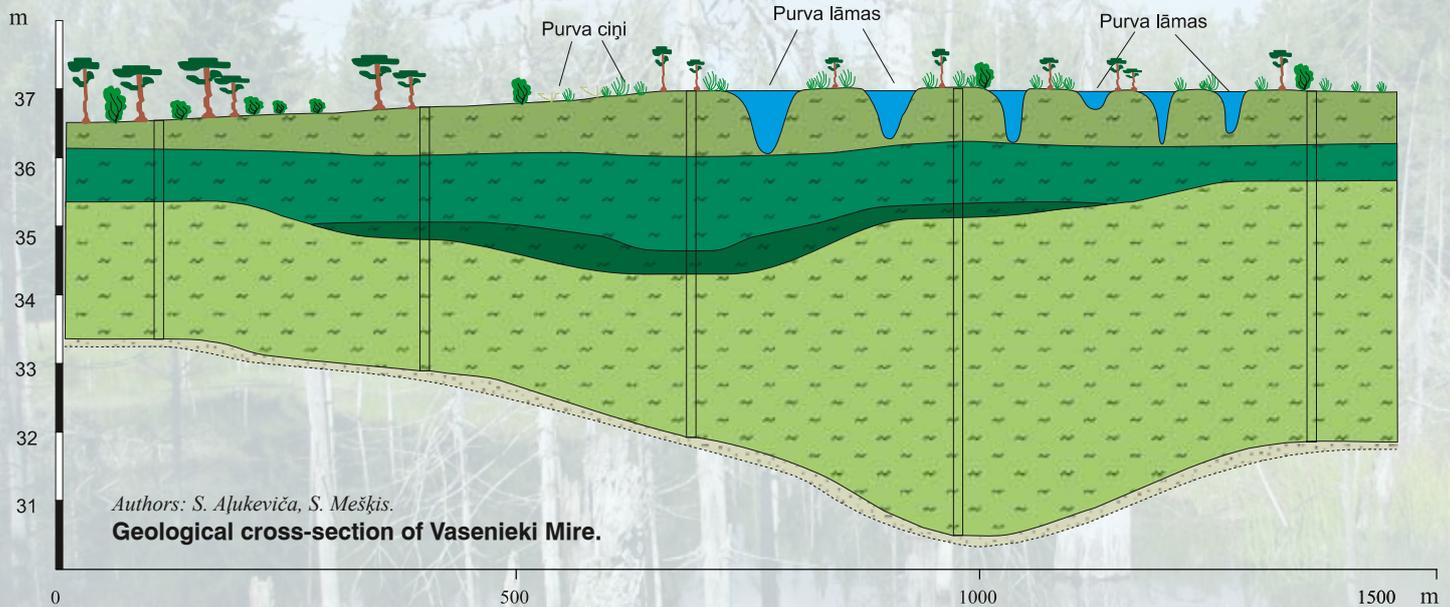
**priedes putekšņi**

Pollen found in the peat reveals the flora in the surroundings of mire thousand years ago. This is the pollen of Grey Alder *Alnus incana*, Silver Birch *Betula pendula* and Scots Pine *Pinus sylvestris*.

Reserve presumably have formed due to the terrestrialisation of shallow waterbodies.

*The growth and accumulation of the peat layer occurred more “rapidly” in the central part of the mire, it was due to the more humid conditions. Thus an elevation in the mire or a dome formed that is several metres higher than the margins of the mire.*

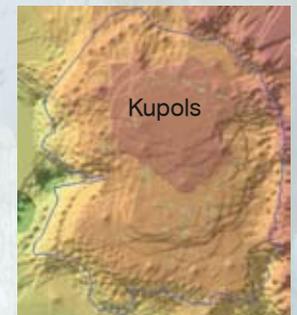
The raised bog dome can be observed in the three-dimensional model of Vasenieki Mire. The central part of the mire is almost 40 m above the sea level; it is 4 m higher than the southern border of the mire and 2.5 m higher than the western margin. The relief of the mire shows that frequently mire can be the highest place in the area.



APZĪMĒJUMI

-  Vidēji sadalījusies brūnā sfagna kūdra
-  Vidēji sadalījusies Magelāna sfagna kūdra
-  Labi sadalījusies spilvju kūdra
-  Labi sadalījusies sfagnu - spilvju kūdra
-  Smilts

-  30.0 - 33.1
-  33.1 - 34.7
-  34.7 - 36.0
-  36.0 - 37.2
-  37.2 - 38.5
-  38.51 - 39.7
-  39.7 - 40.8
-  40.8 - 42.3



Author: J. Matvejs

**Three-dimensional model of Vasenieki Mire.**

## Mires

Mires occupy almost 1/3 of the total area of the nature reserve – about 1870 ha. All types of mire are represented here:

- raised bogs (28 % of the total area)
- transition mires (0.4 %)
- fens (0.8 %)

Stikli Dižpurvs Mire and the central part of Vasenieki Mire have remained as an **intact raised bog** with its characteristic complex of hummocks and hollows. Hummocks up to 0.5 m high and overgrown with dwarf shrubs interchange with smaller or larger raised bog pools; it is especially important for the bird species of the mire. Vasenieki Mire has the highest number of bog pools, but they are not common in Vanagu and Zvaguļu Mires.



Photo: M. Pakalne  
Raised bog pools in Vasenieki Mire.



Photo: V. Baroniņa  
Open raised bog with pools is an excellent habitat for mire bird species.

**Raised bog pools** are cracks in the peat that have filled with water and are like small lakes in the mire. The depth can vary between 1 to 5 metres.

The dominance of typical mire moss – *Sphagnum* – is characteristic for all raised bogs. It is the main former of peat. Hare’s-tail Cottongrass *Eriophorum vaginatum*, cranberries *Oxycoccus palustris*, Bog-rosemary *Andromeda polypholia*, Cloudberry *Rubus chamaemorus* and Marsh Tea *Ledum palustre* are characteristic species for raised bogs as well as for the Stikli Mires Nature Reserve.

**Fens** cover small area of the nature reserve; they mostly form transition zones on the mire margins and on lake shores. Sedges dominate there (Tufted sedge *Carex elata* and Slender Sedge *C. lasiocarpa*).

**Transition mires** mostly occur on the margins of the raised bogs, near the raised bog pools and on lake shores. Other *Sphagnum* species, different from those in raised bogs, occur there and are accompanied by sedges. The largest areas of transition mires have



developed on the shores of Stūrīņezers and Līdaku Lakes. Similar habitats can be found near other lakes in the surroundings of Stikli village.

Photo: I. Rēriha  
Transition mire habitats near Stūrīņezers Lake.



Foto: V. Baroniņa  
As a result of drainage, pine and dwarf shrubs grow fast and the open landscape of the mire disappears.

## Especially protected mire habitats of Europe found in the nature reserve:

- Intact raised bog (code 7110\*)
- Transition mires and quaking bogs (code 7140)
- Degraded raised bogs where natural regeneration is possible or takes place (code 7120)

\*priority protected habitat;  
7110 – code within Appendix I, Habitat Directive, Council of Europe



Photo: M. Pakalne  
Marsh Tea *Ledum palustre* is mostly characteristic of the margins of raised bogs but Cloudberry *Rubus chamaemorus* can be found in the middle of the raised bog on dry hummocks.

**Degraded mires** develop as a result of drainage. The northern part of Vasenieki Mire from Stikli Mires Nature Reserve was drained partly, depth of the ditches reaches even 3 m. Pumpuru Mire was being drained, however the ditch system is shallow.

## Forests

Forests cover 2/3 of the territory of the nature reserve. The largest part is occupied by bog woodland habitats, smallest part – by dry forests, and only 4 % are covered by drained forest types. Forests of this territory previously were intensively managed. Therefore, one third of the forests are comparatively new stands (33 %). Biologically more valuable are the stands that are 100-150 years old (22 %). In total, in the nature reserve 2 % of all forests are older than 150 years. Various elements enhancing the biodiversity of such forests are characteristic – decaying trees, dead-wood, trees with hollows that are suitable for rare invertebrate, bryophyte and lichen species, as well as for nesting birds.



Photo: G. Balodis

Dry pine forests occupy one third of the forests of the nature reserve.



Photo: I. Rēriha

Wet forests between Stūriņezera Lake and Zvaguļu Mire.



Photo: G. Balodis

Forest management in the surroundings of Zvaguļu Mire, the cutting of the forest undergrowth in the area of Capercaillie leks.

### Especially protected forest habitats of Europe and Latvia found in the nature reserve:

- Bog woodland (code 91D0\*)
- Fennoscandian deciduous swamp forests (code 9080\*; No. 1.18.)
- Boreal forests (code 9010\*)

No 1.18. – Regulations No. 421 (05.12.2000.), No. 61 (25.01.2005.) issued by the Cabinet of Ministers of Latvia.

## Freshwaters

Stikli Lakes have originated 9,000 to 10,000 years ago and can be considered as the remains of the ancient Baltic Ice Lake in the time period from the end of the ice age to the beginning of the post-ice age. The lake beds have mostly formed as a result of the melting glacier; therefore, such lakes are called glacial lakes.

Eight lakes are included in the Stikli Mires Nature Reserve: **Dižiere Lake, Maziere Lake, Dzijene Lake, Lidaku Lake, Stūrņezers Lake, Zutene Lake, Seklene Lake, Velnezers Lake**. The largest of the 8 lakes is Dižiere Lake (18 ha), the deepest – Seklene Lake (8 m). Velnezers Lake and Seklene Lake form a waterbody consisting of two parts that are separated by a narrow strip of land between them. Previously, there was a road, but now due to the beaver activities the water level has risen, and both lakes have joined together.



*Photo: U. Suško*  
A narrow path leads to the juncture of both the lakes.



*Photo: I. Rēriha*  
Brightening near the lake.



*Photo: U. Suško*

Seklene Lake with the small island. A legend tells that once the devil carried a heavy bundle to build a dam between Velnezers and Seklene Lakes. All of a sudden a cock sung, and the devil had to flee. The bundle spilled and formed the isle in the lake.

Transition mires and quaking bogs occur near the shores of almost all lakes, and several rare vascular plant and bryophyte species grow there.

**Veciere River** (a tributary stream of Raķupe River) and **Sēme River** (a tributary stream of Stende River) flow through the territory of the nature reserve, as well as several small rivers and brooks. One of the brooks flows out of Vasenieki Mire and after 2 km falls into Stende River.

### Especially protected freshwater habitats of Europe and Latvia found in the nature reserve:

- Dystrophic lakes (code 3160)
- Semi-dystrophic lakes (No. 4.15.)

**About 45 % of the territory of the nature reserve is covered by especially protected habitats of Latvia and Europe.**

Flora of the nature reserve is characterized by the floristic features of the Coastal Lowland Geobotanic District of Latvia. In the course of various investigations 486 vascular plant and 148 bryophyte species were found there (I. Rēriha, Nature Reserve “Stiklu Mires” Nature Protection Plan, 2005). The remarkable number of species occurs thanks to the presence of diverse lake, mire and forest habitats.

Mire flora always is very specific – the raised bogs are poor in nutrients, only a small number of species has adapted to the growth conditions here. The two Sundew species occur in the wet bog hollows, especially near the raised bog pools, – Round-leaved Sundew *Drosera rotundifolia* and Great Sundew *D. anglica*, as

well as the infrequent hybrid of both species – *D. obovata*. In the lawns near the hollows *Rhynchospora alba* grows, and in places *Scheuchzeria palustris* occurs as well. The rose-coloured flowers of *Andromeda polypholia* can be observed in the depressions of the bogs throughout the summer.

The littoral zone and terrestrialising area of the lakes is especially rich in plant species. In total, 70 vascular plant and 27 bryophyte species are distinguished there. *Lobelia-Isoetes* complex, once found in the three of Stikli Lakes, now has disappeared. However, several rare bryophyte species still find a shelter on the lakeshores.



Photo: M. Pakalne  
Round-leaved Sundew *Drosera rotundifolia* is the most common Sundew species in raised bogs.



Photo: M. Pakalne  
*Drosera obovata* – the hybride between *D. rotundifolia* and *D. anglica* infrequently can be found in Stikli Mires, it can be easily distinguished by the form of its leaves.



Photo: M. Pakalne  
Great Sundew *Drosera anglica* is not a rarity. All sundew species are insectivorous plants.

**Especially protected vascular plant species (in total 28)**

- *Trichophorum cespitosum*
- *Cardamine flexuosa*
- *Juncus squarrosus*
- *Juncus bulbosus*
- *Lycopodiella inundata*
- *Orobanche pallidiflora*
- *Gymnadenia conopsea*



Photo: I. Rēriha  
*Lycopodiella inundata* is a rare species in Latvia.



Photo: V. Baroniņa



Photo: I. Rēriha  
*Trichophorum cespitosum* is a characteristic plant species for Western Latvia, including Stikli Mires. The species is similar to *Eriophorum vaginatum* tussocks, but can be well distinguished during the blooming and fruitage, due to its white pappus characteristic only for the cottongrass.



Rannoch-rush *Sceuchzeria palustris*, Cranberries *Oxycoccus palustris*, White Beak-sedge *Rhynchospora alba* are characteristic plant species of raised bog hollows and bog pool margins.

Photo: M. Pakalne

**Especially protected and rare bryophyte species (in total 25)**

- *Sphagnum lindbergii*
- *Pogonatum dentatum*
- *Ephemerum serratum*
- *Scapania paludicola*
- *Scapania irrigua*
- *Barbilophozia attenuata*
- *Frullania tamarisci*



Photo: I. Rēriha  
*Sphagnum lindbergii* has 3 localities in Latvia at present, one of them is in Stikli Dižpurvs Mire.





Photo: A. Petriņš  
Pygmy Owl *Glaucidium passerinum* is the smallest of the owls in Latvia. 8-10 couples are recorded in the forests of Stikli Mires Nature Reserve.



Photo: A. Petriņš  
Osprey *Pandion haliaetus* nests both in the territory of the reserve and in the surrounding area. Sometimes it can be seen flying above the nearest ponds.



Photo: A. Petriņš  
At least 10 couples of Tengmalm's Owl *Aegolius funereus* nest in the nature reserve and its surroundings.



Photo: A. Petriņš  
In the forests of Stikli Mires Nature Reserve Capercaillie *Tetrao urogallus* leks are known.

The diverse habitats of the nature reserve are important habitats for many bird species. In various time periods at least 80 species have been recorded in Stikli Mires, and almost 40 % are especially protected in Latvia and Europe (A. Petriņš, Nature Reserve “Stiklu Mires” Nature Protection Plan, 2005).

Wide and diverse forest areas surround the raised bog complex almost from all sides. Several protected species find the shelter for nesting there, such as, Honey-buzzard *Pernis apivorus*, Hazel Grouse *Bonasa bonasia*, Pygmy Owl *Glaucidium passerinum*, Tengmalm's Owl *Aegolius funereus*, Black Woodpecker *Dryocopus martius*, Three-toed Woodpecker *Picoides tridactylus* and even White-tailed Eagle *Haliaeetus albicilla*. Osprey *Pandion haliaetus* usually nests both in forest and on the tops of the highest trees of the raised bogs. The transition zone between mire and forest is very important for bird species; they nest in the forest and feed themselves in the nearest mire and lakes.

In total, 5 Capercaillie *Tetrao urogallus* leks are located in the territory of the nature reserve. It is important to keep them for the birds and manage them by cutting the undergrowth.



Photo: A. Petriņš

Wood Sandpiper *Tringa glareola* is one of the most characteristic mire bird species – carefully observing the surroundings from a branch of a small pine (about 14 couples in Stikli Mires Nature Reserve).



Photo: A. Avotiņš

It is hard to distinguish European Golden Plover *Pluvialis apricaria* among the colourful raised bog hummocks. Altogether at least 15 couples nest in Stikli Mires.



Photo: A. Petriņš

Mire is a favourite habitat for Black Grouse *Tetrao tetrix*.



Photo: J. Ķuze

Great Grey Shrike *Lanius excubitor* dwells mostly in raised bogs, nests in the branches of small pines (3-5 couples in Stikli Mires Nature Reserve).

Six raised bogs are especially good for the bog bird species, like, European Golden Plover *Pluvialis apricaria* and Great Grey Shrike *Lanius excubitor*. The species are known in almost every mire of the nature reserve. Wood Sandpiper *Tringa glareola* is observed only in mires with bog pools.

The forests of Stikli Mires Nature Reserve is a habitat for Black Grouse *Tetrao tetrix* leks – up to 30 lecking males were recorded there. About 15 couples of Cranes *Grus grus* nest in the mires. In spring Whooper Swan *Cygnus cygnus* rests in Stikli Mires as well.

In the nature reserve there is a high diversity of butterflies – 1/3 of day butterfly species of Latvia are recorded there. Moorland Clauded Yellow *Colias palaeno* and several Blues *Plebeius* species that are characteristic for such habitats, can be often met in Stikli Mires. The number of recorded dragonfly species reaches 18. Several rare insect and snail species occur in the forests on decaying trees and dead-wood, such as, Longhorn Beetle *Necydalis major* and Two-toothed Door Snail *Clausilia bidentata* (V. Spunģis, Nature Reserve “Stiklu Mires” Nature Protection Plan, 2005).



Photo: V. Spunģis

Golden-ringed Dragonfly *Cordulegaster boltoni* is a rare species and dwells near small rivers with cold, clean water. Recorded near the brook flowing out from Vasenieki Mire.

Photo: V. Spunģis  
Silver-studded Blue *Plebeius argus* can be seen both on Heather and Bog-rosemary.



## Especially protected invertebrate species in the Stikli Mires Nature Reserve:

- Woodland Brown *Lopinga achine* – the butterfly occurs in the deciduous forests
- Scarce Heath *Coenonympha hero* – the butterfly can be found in wet meadows and fens
- Golden-ringed Dragonfly *Cordulegaster boltoni* – at present only few localities are known in Latvia.
- Scarce Chaser *Libellula fulva* – occasionally found near Stikli Lakes
- Ground Beetle *Carabus nitens* – rare, but characteristic raised bog species



Photo: V. Spunģis

Bark-gnawing Beetle *Peltis grossa* forms a stable population, mostly in deciduous forests along small rivers.



Photo: V. Spunģis

Large marsh Grasshopper *Mecostethus grossus* is characteristic of wet meadows; in Stikli Mires it occurs in the transition mires and fens.



Author: R. Kazāka

Moorland Clauded Yellow *Colias palaeno* is a characteristic species of raised bogs, its caterpillars feed mostly with Bog Bilberry.

Wolves *Canis lupus* can be observed occasionally in the territory of the nature reserve, their excrements regularly can be found on the edges of mires. *Lynx Lynx lynx* is observed as well. Footprints of four artiodactyla species – Roe Deer *Capreola capreolus*, Wild Boar *Sus scrofa*, Elk *Alces alces*, Red Deer *Cervus elaphus* can be frequently observed. From amphibiotic species, the beaver *Castor fiber* is most significant in Stikli Mires Nature Reserve. There are a lot of suitable habitats for the beaver, especially, the drainage ditch area (V. Pilāts, Nature Reserve “Stiklu Mires” Nature Protection Plan, 2005).

### Beaver habitat

Beaver, making its dwelling, blocks the watercourse, as a result the area becomes flooded. Gradually, the aquatic vegetation grows, food chains develop, and nutritive base settles. The majority of trees does not tolerate the continuous flooding and thus becomes a habitat for various groups of organisms that change until the decomposition of trees in the water has completed. A new habitat –

Photo: A. Klepers  
The beaver.



Photo: V. Baroniņa  
Beaver dam on the brook, running out from the mire.



Photo: J. Nusbaums

Black stork feeds in the flooded areas created by beavers, Mallard Anas platyrhynchos, Cranes *Grus grus*, Osprey *Pandion haliaeetus*, sometimes even Whooper Swan *Cygnus cygnus* rest and nest, and the majority of woodpecker species found in Latvia use the dry trees for pecking the hollows.

beaver habitat – develops. From the point of view of the biological diversity, it is very valuable habitat. Water has accumulated in the area where previously nothing similar has been, it provides a suitable habitat for various organisms related with water. Dry trees and decayed wood-pulp are habitats for diverse invertebrate species, thus the birds find valuable food there. When the nutritive base for the beavers becomes exhausted, they move to another dwelling place, the flooding diminishes or even dries up in the course of time, but the dry trees, decaying trees and the trunks gnawed by the beavers stay as decaying wood-pulp and provide suitable conditions for many species preferring wet habitats. The net of the drainage ditches in forests and mires is an ideal habitat for beavers, thus helping them to live in the places, where they otherwise could not get and dwell.

However, the beavers have a negative influence as well – for instance, in Stikli Mires Nature Reserve, the level of several lakes has risen due to their activities, and rare plant species have become extinct.

## THREATS TO THE MIRES AND MANAGEMENT ACTIVITIES

During thousands of years mires have accumulated an enormous reserve of mineral deposit – the peat. Previously, it was used as fuel and bedding, now a considerable part is exported abroad. Sala Mire, which is located to the north from the nature reserve, is used for peat extraction.

From all six raised bogs Vasenieki Mire has been most influenced by the drainage. During the 1970-ties and 1980-ties its northern and western part was cleared and the ditches were dug in order to establish peat extraction fields. The natural mire habitats in the nearness of the ditches have degraded:

- the hydrological condition of the mire changes and the water-capacity of the mire decreases
- the mire increasingly overgrows with heather, pine and birch; thus the open landscape of the bog that is the best for the bird species, decreases
- Sphagnum species disappear – they are the main peat formers and the main condition for the “growth” of the bog
- the surface of the raised bog lowers for 15-20 %



Photo: G. Balodis

Building of peat dams by the excavator in Vasenieki Mire.



Photo: J. Nusbaums



Photo: V. Baroniņa

The degraded mire near the ditches is dry, *Sphagnum* species have disappeared, heather species dominante. The same place in the bog 3 month after the dams were built on the drainage ditches.

It is not possible to regenerate the degraded mire completely, however, the negative influence of the drainage can be reduced, and the hydrology of the degraded habitats can be restored to a certain extent. It can be achieved by building dams on the drainage ditches. Therefore, in Vasenieki Mire, in total 145 peat dams were built with the help of the excavator. The dams hold water and in a short period of time the difference in the water level on the both sides of the dam reaches several metres; the drained area becomes wet again.

**Monitoring** is a continuous observation, which is performed in order to compare and evaluate the changes in measurements within a longer period of time.

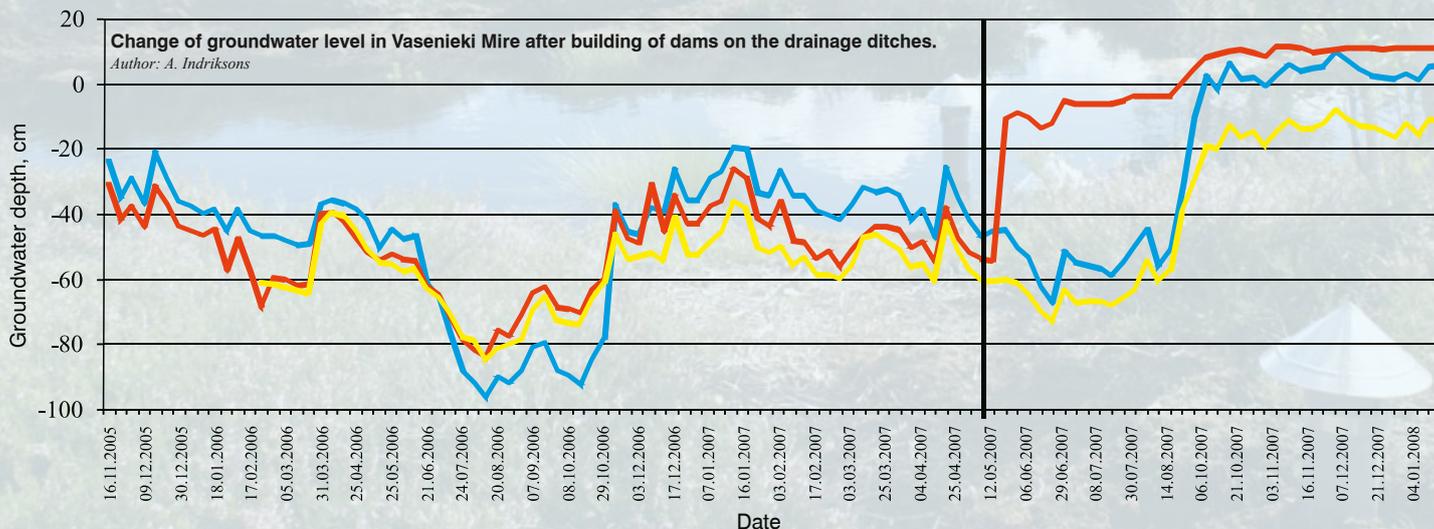
In order to perform the hydrological monitoring, groundwater level observation wells were laid in several places in the mire. Before building of dams in the drained area the groundwater level was about 50 cm from the mire surface. After building of dams in a few months time, the groundwater level raised and changes in the raised bog hydrology were observed, the drainage influence was stopped. Visual changes in vegetation develop gradually, and the objective of the vegetation monitoring is to follow these changes. When the hydrological conditions improve, the vegetation

characteristic of the mire regenerates – heather decreases and Sphagnum species re-appear gradually. In order to compare and evaluate the effectiveness of the management actions, monitoring is performed in the intact part of the mire as well. During a month time, the measurements are taken several times.



Photo: M. Pakalne  
Groundwater level is measured every week, also in winter.

- Nosusinātā teritorija (starp grāvjiem 100 m).
- Nosusināta purva lāmu terit (starp grāvjiem 20 m).
- Nosusinātā teritorija (starp grāvjiem 20 m).
- Aizsprostu būves sākums.



The surroundings of Stikli Mires Nature Reserve are rich not only in mires and forests, but also in such material as sand. The sand was of a high quality, therefore a glass factory was established in 1853. In 1897 a new glass factory in Stikli was opened, thus the place acquired its name (“glass” – “stikls” in Latvian).

The new factory was built by the order of Grotuss, the Baron of Puzenieki. Up to that time there was only a humble saw mill and

a forge in the village. In 1900, the so called “hunters castle” (the building where the manager of the factory lived) was built on the shore of the lake. To produce the glass, not only high quality sand, but also a lot of fire-wood was necessary for the manufacturing process. Therefore, the surrounding forests were heavily cut. The glass products were taken to Rīga, Jelgava and Ventspils.

In 1926 a fire broke out in the Stikli factory and caused great losses. In 1928 the factory was closed and a new factory was built in Rīga. In Stikli a 4-grade school for the children of the factory workers was operating. From 1934 until 1935 an agriculture school was there, but since 1954 – special school of Stikli.



*Photo: A. Āboliņš*

Summerhouse called “hunters castle” is the former house of factory manager and is still present nowadays.



*Photo: I. Rēriha*

Here, on the quiet shore of Dižiere Lake, was the place for Stikli factory.

To become acquainted with the mire and the life of its inhabitants, a **nature trail** was set up in one of the Stikli Mires Nature Reserve – Vasenieki Mire. The visitors can observe both the degraded part of the mire, walking along the drainage ditches, and compare it with the intact mire with various plant and animal species. The length of the nature trail reaches 4 km.

The trail leads to the **watching tower** (6 m high) where bird species can be observed. The best time for bird watching is April and May, as well as before the migration time in October.



*Photo: V. Baroniņa*

From the watching tower the whole mire opens before you.



*Photo: V. Baroniņa*  
Walking on the trail, you can get to know a lot about the inhabitants of the mire.



*Photo: J. Nusbaums*  
The watching tower in Vasenieki Mire.



### Visiting the nature trail, take into consideration:

- The safest place in the mire is the trail! Be careful near the pools and hollows. To step off the trail can be dangerous!
- The more silent you will be in the mire, the more you will see and hear!
- It is prohibited to make fires in the mire! The peat is inflammable – a match or a cigarette can make the peat burn for months in the depth of several metres.
- Hunting of birds is prohibited in Vasenieki Mire.
- The mire is a home for many plants and animals – do not pollute the site and take care, and you'll be always welcome!

### **Territory is managed by:**

- Puze Municipality Council – Blāzma, Puze Municipality, Ventspils District, LV-3613
- Usma Municipality Council – “Auseklīši”, Usma Municipality, Ventspils District, LV-3619
- Valdgale Municipality Council – Pagasta māja, Valdgale, Valdgale Municipality, LV- 3253

### **Forest is managed by:**

- State Joint-Stock Company “Latvia’s State Forests”
- private landowners

### **Nature protection is controlled by:**

- Ventspils Regional Environmental Board – Dārzu Str., Ventspils, LV-3601

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*Photo: J. Nusbaums*  
Vasenieki Mire nature trail.

