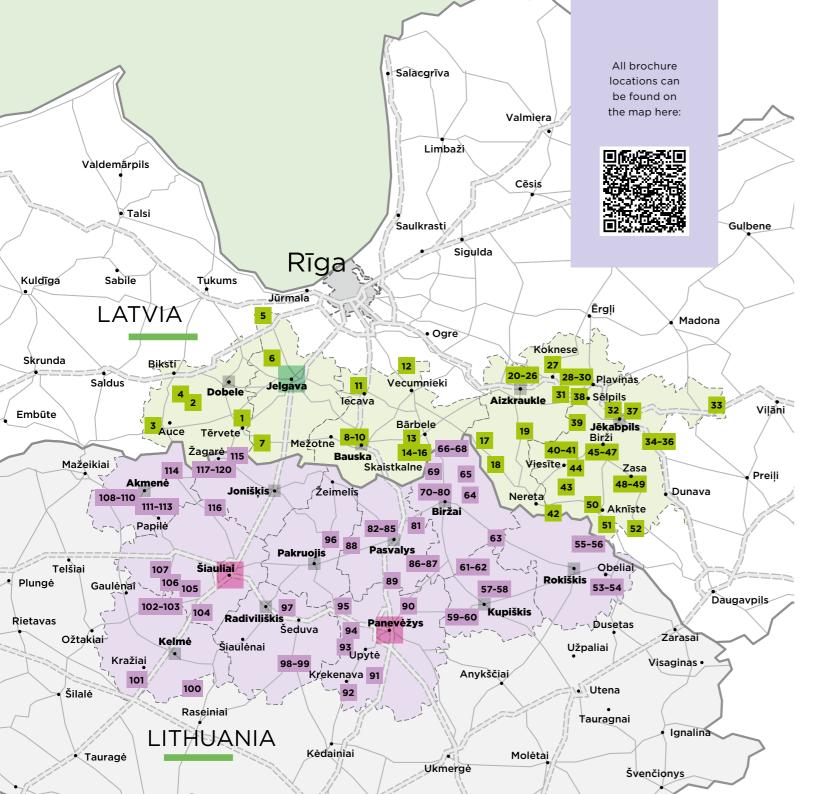


DISCOVER GEO DESTINATIONS

IN ZEMGALE AND NORTHERN LITHUANIA!





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From the spectacular Skaistkalne karst sinkholes in Bauska Municipality and the mythical Staburags rock in Aizkraukle Municipality up to Žagarė esker and the many caves and karst sinkholes near Birži - this side of nature has it all! There are also cliffs, outcrops, springs, secular stones, boulders and even industrial objects that have successfully blended into their surroundings. Peace lovers will find silence, slow walks and lesserknown sights, while thrill-seekers will enjoy the challenges and natural wonders that are harder to reach.

But why go outdoors at all? It seems that no one needs any proof of the health benefits from active exercise and slow walking. Nowadays being outdoors - in the middle of undamaged and unpolluted nature - is an exclusive value that really needs to be noticed and appreciated, as well as cared for and preserved. Furthermore, nature can be so diverse! It is possible to enjoy simply beautiful landscapes as well as recreation and picnic opportunities in well-maintained and specially equipped places. Enjoy nature in a more active way, cycling or boating along various specially marked routes.

Nature is also a place where one can learn by exploring the world around and gradually gaining a better understanding of its patterns. The main thing to keep in mind is that nature is something to live with, and it has its own rules. So, no matter what scenario you have in mind for your holiday, it is advisable to not only choose the attractions and routes, but also to acquaint yourself with the conditions, dangers, rules of behaviour and warnings of the place before you set off.

Have a beautiful, safe and pleasant time enjoying nature! Cherish and appreciate nature's generosity and receptiveness to you by giving back the same!

LEGENDS









Protected natural monument

Protected nature heritage object

Reachable by boat

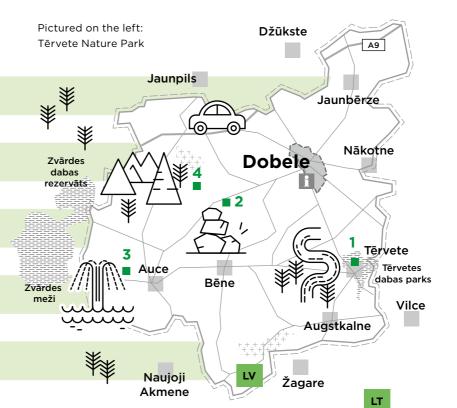
Paid entrance

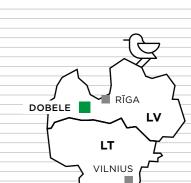
Languages available



LATVIA **ZEMGALE REGION**

DOBELEAND SURROUNDINGS







WHERE TO EAT OR STAY OVERNIGHT?

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.VISITDOBELE.LV



-- WHAT IS GEOLOGY?

GEOLOGY IS A SCIENCE THAT DEALS WITH THE HISTORY OF THE EARTH, ITS FORMATION, HISTORY AND STRUCTURE, AND THE PROCESSES THAT SHAPE THE EARTH.



- - WHAT IS GEOMORPHOLOGY?

GEOMORPHOLOGY IS A SCIENCE
THAT STUDIES LANDFORMS
AND LANDFORM EVOLUTION
ON THE EARTH'S SURFACE. IT IS
CLOSELY RELATED TO GEOLOGY
AND CAN BE CONSIDERED A
PART OF IT.



-- WHAT IS SPELEOLOGY?

SPELEOLOGY IS THE SCIENTIFIC STUDY OF THE FORMATION, STRUCTURE, HISTORY, AND PHYSICAL AND BIOLOGICAL CHARACTERISTICS OF KARSTS AND CAVES, AND EVERYTHING RELATED TO THEM.



Tērvete Nature Park

Tervete river bluffs

River valley

The Tērvete river valley with the Swan (Gulbji) and Writer's (Rakstniece) river banks, connected by a wooden bridge, is particularly scenic. The total length of the bridge is more than 100 metres, and the impressive cliff has more than 150 steps in the bridge's stair spans. Two side platforms allow nature lovers to enjoy a leisurely view of the landscape.



Almost like the artists, the face of Tērvete – the undulating terrain – has been shaped over time by glacial meltwater. The relief is well-defined in the park area, with sediments mainly composed of moraine loams of varying densities. Although



Tērvete Nature Park is located in the Zemgale Plain, it does not have the typical relief of a plain. The landscapes here are formed by the valley of the River Tērvete and its bluffs, as well as three castle mounds and ravines. The river bluffs can be well viewed at the Nature Park's playground and in the free area of the park near Gulbji Bridge, which is closer to Tērvete Reservoir. A small recreation area is also located near the bridge.

The park attractions are located in a "Natura 2000" protected area.



LVM Nature Park Tērvete,
Dobele Municipality

www.visitdobele.lv

56.496146, 23.397412

Dobele - 19 km, Jelgava - 30 km, Žagare - 18 km



makes many people feel peculiar energy currents: some see visions; others perceive a flow of information. Pokaiņi Forest is also special because of its miraculous stories.

The site is suitable for both the peaceful enjoyment of nature and active outdoor pursuits. Several picnic areas and scenic viewpoints with benches are also available.

Senpokaiņi, Naudīte Rural Territory, Dobele Municipality

www.visitdobele.lv



6 56.57703, 23.07134



Dobele - 17 km, Auce - ~22 km



Distinctive landform, stone piles

A scenically interesting and picturesque place with steep hills, deep valleys and forest stands of varying composition and age. The most unusual thing about this forest is the stone piles of different sizes, in larger and smaller groups, stacks, stone rivers and ripples. Such a concentration of stones of all sizes and shapes in one place looks truly spectacular and creates an extraordinary landscape that





Legends say that there are ancient pyramids here that radiate very strong energy, temperature anomalies have been observed in the forest, and some stones even have healing powers. Nowadays, many spiritual healers consider Pokaiņi Forest a sacred place.





- 10 --



Legend says that during the Great Northern War, Latvian sages used the water from the springs to cure King Charles XII of Sweden, who could not be cured even by the doctors taught at court. Since then, they have been called the King's Springs and the water has been attributed healing qualities.



Vītiņi Rural Territory, Dobele Municipality

www.visitdobele.lv

9 56.48310, 22.82265

Auce - 6 km, Dobele (through Īle) - 36 km



Kevele springsSpring

Seven springs flow out of the ravine, the banks of which are fortified with boulders, and then merge into a single brook, which flows into the Melderi millpond. The group of springs forming the brook is a natural object with not only geological but also cultural and historical significance. The springs are located in a picturesque area.

The cool and delicious water of the springs can be drunk, and while listening to their relentless and calm flow; everyone has the opportunity to recharge their energy and experience pleasant emotions, combined with a breath of fresh air. Because of this atmosphere, the springs of Kevele are popular with both water lovers and lovers of peace and nature. There is a picnic area with a small bridge and swings.

The springs start in a forest cluster, which can be reached by following the signs, and they are also included in the local cycling route "Auce surroundings", which is marked and easy to navigate.

4 Krievkalni

Specific relief shape

Krievkalni is a long, forested rampart, a unique natural formation in the Zemgale landscape, from which a distant panoramic view of the vastness of Zemgale opens up (on a clear day you can even see the Dobele mill towers).

Its highest point rises 149 metres above sea level, and it is probably an ancient Zemgale sanctuary, a place of worship. The oldest name of the Krievkalni hills may have been "Krīvi hill", which should be seen in the context of the archaeological complex of Lake Zebrus. There used to be an observation tower on the highest point of Krievkalni, but today only the foundations remain. However, Lake Maiciņi can still be found at the foot of the hill.

The Krievkalni are hidden in the forest, so to climb there you have to trust the signage and walk along a fairly steep path. At the top there is a recreation area with tables, benches and a fireplace for those who are tired of walking. This would be the right place for enjoying peaceful nature or for active relaxation in nature, organising hikes.



Zebrene Rural Territory,
Dobele Municipality

www.visitdobele.lv

6 56.60123, 23.01562

Dobele - 21 km, Auce - 22 km

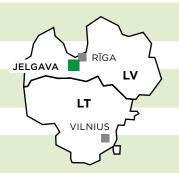




LATVIA **ZEMGALE REGION**

JELGAVA

AND SURROUNDINGS

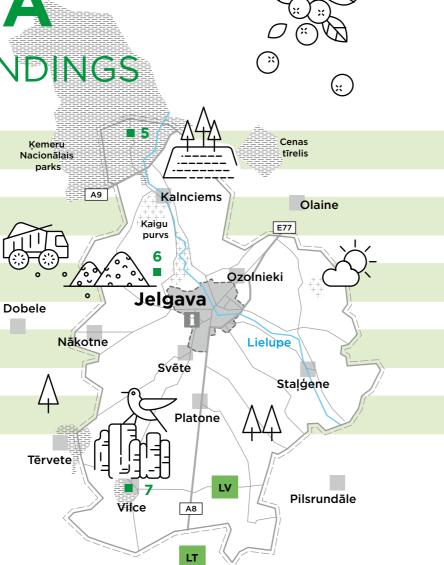






WHERE TO EAT OR **STAY OVERNIGHT?**

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Krāču Hills

Costal dunes

The Krāču Hills are one of the largest coastal dunes in the Littorina Sea. Its highest part is 29 m above sea level and 26 m above the surrounding plains. The Littorina Sea is the predecessor of the Baltic Sea. which existed around 7000-5000 years ago. The ancient Littorina Sea and its coastline were located to the east of the dune. Windblown sand accumulated along the shoreline, both from the beach and inland.

Nowadays, the 78 ha Krāču Hills area has been created to protect the most prominent part of the Littorina coastal dunes. It is the only geological and geomorphological natural monument of national importance in Jelgava County. It is formed by a long and high dune mound with a slightly sickle-shaped curve towards the Great Kemeri moorland. The protected dune line is 3 km long, 250 to 300 m wide and 18 to 20 m high. Since 1962, the Krāču Hills have been under state protection as a geological formation, and the site is located within Kemeri National Park.

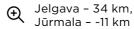


Valgunde Rural Territory, Jelgava Municipality, Sala Rural Territory, Babīte Municipality

www.visit.jelgava.lv



56.891987. 23.537025



From the highest points of the dune mound magnificent views open up to Lake Lilija and the Great Kemeri moorland, and both the dune mound itself (its most significant geological value is evidence of processes in the

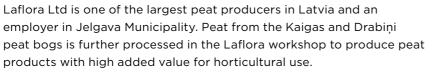
Great Kemeri moorland

ancient seashore zone) and its scenic beauty must be protected. Here it is possible to enjoy a relaxing holiday closer to untamed nature, in a place that is not particularly promoted to the public. This site will be suitable for active lifestyle enthusiasts, adventure seekers and people with at least some hiking experience, as the climb is rated as moderate difficulty (there may be some broken trees or boggy areas along the way). There is also an organised bog shoe hike in the Krāču Hills (more information at www.visit.jelgava.lv).

6 Laflora Ltd



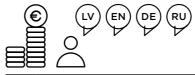




The company has been working in Kaigas bog since 1995, but peat extraction started in the 1960s. The total area of the bog is 1535 ha, with industrial peat extraction taking place on 763 ha, a recultivation programme on 189 ha, together with the establishment of a Natura 2000 site of European importance on 583 ha. Kaigas bog is a good example of how conservation interests and economic activity can coexist.







Kaigas peat bog, Līvbērze Rural Territory, Jelgava Municipality

www.visit.jelgava.lv

6 56.707026, 23.601379

⊕ Jelgava - 35 km, Jūrmala - ~26 km

It is an important breeding site for the European Union (EU) Birds Directive species – the wood sandpiper and the European golden plover, one of the few in Zemgale and, apart from Kemeri moorland, the only one in Dobele, Jelgava and Bauska. The rare bird species typical of the open raised bogs are well represented here, while the autumn migrations of the bog are spent by the Bean and White-fronted Geese.

The attraction offers a wide range of excursions to learn about everything related to both bogs and peat.

For example, the Cena Bog Trail explores the interaction between industry and nature, while the Drabiņi Peat Bog tour looks at peat extraction methods and the extraction process.





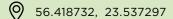
Wood sandpiper / Tringa glareola







www.visit.jelgava.lv



Bauska - 43 km, Dobele - 31 km, Jelgava - ~36 km



-- WHAT IS AN OUTCROP?

AN OUTCROP OR ROCKY
OUTCROP IS A VISIBLE
EXPOSURE OF BEDROCK OR
OTHER VISIBLE GEOLOGIC
FORMATIONS EXPOSED AT
THE EARTH'S SURFACE.

Rukūze estuary sandstone outcrop in Vilce Nature Park

Sandstone outcrop

At the foot of the Vilce castle mound is a popular place for locals and tourists - Zaķi (Hare) Meadow. It is guarded by a sculpture carved into a tree - the Host Hare, which is a great object for photo-lovers. Three sandstone outcrops of the Devonian system can also be seen on the banks of the rivers Rukūze and Vilce, near Zaki Meadow.

The sedimentary rocks of the Upper Devonian Famennian are yellowish and rusty, fine-grained and very fine-grained sandstones, both loose and with harder carbonate and clay cements. Vilce Nature Park occupies 144 ha and is one of the most scenically beautiful spots in Zemgale. The rivers Vilce and Rukūze join here through ravines, which diversify the landscape of the flat farmland region, while there are other attractions to see in the large nature park area, including the Vilce watermill, the manor house with its castle and park, a small viewing platform or Love Hill, several noble trees (oak, linden, pine, larch), Lielmāte



spring, Devil's ravine, Vilce castle mound, Zaķi meadow, Devonian sandstone outcrops (Nāriņas (Mermaid) rock), the site of the 1935 Battle of Mūrmuiža. The Swedish monument (Victory Stele), the Stone Bridge with the Devil's Depth and Swedish treasures, the confluence of the rivers Vilce and Svēte, as well as Mūrmuiža Mill.

This place is suitable for families, groups of friends, schoolchildren and those who want to draw on the power of nature. Additionally, there is an opportunity to have a picnic and try a hand at disc golf. A guided tour of Vilce Manor and a walk through the nature park will take approximately 2.5 hours. Meanwhile, for those who want to explore on their own, the mobile app "Tours Across Baltics" has been created, which allows one to learn historical facts about Vilce Manor and the park.



Vilce Nature Park

Legend says that since ancient times local people have washed their heads in the Rukūze estuary because it gave them a lot of clarity and sharpness of mind, as well as a good memory.

Nowadays, travellers can test the truth of this story by pouring a few drops of water on their heads.



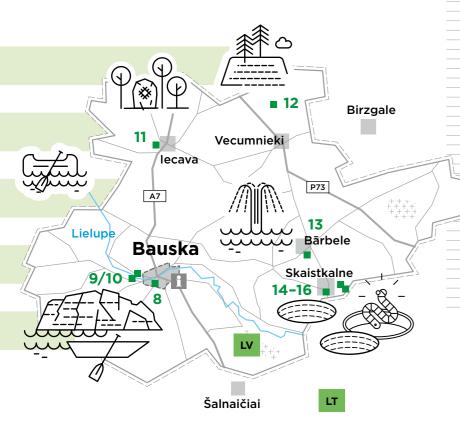
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- - 19 -

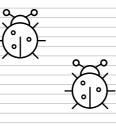
LATVIA ZEMGALE REGION

BAUSKA

AND SURROUNDINGS









WHERE TO EAT OR STAY OVERNIGHT? LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.VISIT.BAUSKA.LV

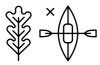


Dolomite rock outcrops in Bauska

8 Dolomite rock outcrops in Bauska

Outcrop

Limestone or dolomite rock outcrops are specially protected biotopes and geological sites in Latvia and Europe, but they are relatively abundant on both banks of the River Lielupe and at the confluence of the rivers Mūsa and Mēmele. Thus, in the vicinity of Bauska Castle, walking from Ķirbaksala along the Mūsa bank towards the bridge, the 5.5 m high Bauska dolomite outcrops can be seen for up to 600 m.



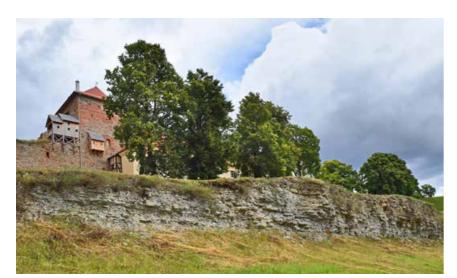
Bauska, Bauska Municipality

www.visit.bauska.lv

9 56.402846, 24.174480

ecava - 23 km, Jelgava - 50 km

The property is suitable for both peaceful enjoyment of nature and active recreation in nature. After visiting the outcrops, take a walk through Bauska Nature Park, where several scenic viewpoints are available. If taking a boat along the river, the impressive dolomite outcrops can be seen on the route "Bauska-Mežotne".



Dolomite rock outcrops in Bauska

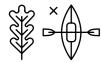
-- WHY IS IT IMPORTANT TO KEEP THE OUTCROPS IN THEIR ORIGINAL STATE? **ROCK OUTCROPS PROVIDE** IMPORTANT INFORMATION ON ROCK TYPES. THEIR SEDIMENTATION CONDITIONS, AND THEIR PAST PROCESSES. WELL-PRESERVED **OUTCROPS ARE KEY TO** GEOLOGICAL MAPPING AND UNDERSTANDING OF GEOLOGICAL HISTORY. **OUTCROPS ARE ALSO VALUABLE HABITATS** (EU PROTECTED HABITAT SITES) - A PLACE WITH RARE AND PROTECTED SPECIES OF MOSSES, LINCHES, HERBS. AND SPECIFIC ORGANISMS LIVING THERE. THEY MUST BE PROTECTED FROM DAMAGE, SUCH AS IMPRINTING MESSAGES OR OTHERWISE PHYSICALLY AFFECTING THEM, WITH LASTING CONSEQUENCES. THIS CAN CAUSE VALUABLE AND USEFUL INFORMATION FOR RESEARCH ON THE SITE TO GET LOST.



Zemgale plain on the route "Bauska-Mežotne". "Ozolaivas"

IMPORTANT: OUTCROPS ARE ALSO DIRECTLY AFFECTED BY VISITORS. THERE ARE A FEW THINGS TO TAKE INTO ACCOUNT BEFORE VISITING THIS OBJECT. VISITORS WHO SPREAD VEGETATION, CAUSING COLLAPSES (DEFORMATION), ARE ALSO A SIGNIFICANT THREAT TO ROCK OUTCROPS.







Ziedoņi, Rundāle Rural Territory, Bauska Municipality



www.visit.bauska.lv



56.409194, 24.11145



Bauska – 7 km, lecava – 27 km, Jelgava – 50 km



Ziedoņi dolomite rock outcrops

Outcrop

The Ziedoni dolomite rock outcrop is more than 350 metres long and, together with the Jumprava cliffs on the opposite bank, creates a kind of river canyon. It also contains rare plant species, such as several miniature ferns, lichens and mosses. This outcrop is included in the area of Bauska Nature Park, which was created to unite outstanding natural monuments and preserve the cultural landscape of the River Lielupe. The site is suitable for both peaceful enjoyment of nature and active recreation, but it should be noted that these dolomite rock outcrops can be viewed only from the riverside, while boating on the route "Bauska-Mežotne".

10 Jumprava dolomite rock outcrops

Outcrop

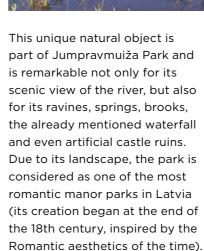
A spectacular and scenic 500 metre long and 5 metre high dolomite rock outcrop on the bank of the River Lielupe, is also known as the Jumprava Rock. In the middle of the outcrop it is split by a ravine, where a 1.5 m high cascade of waterfalls can be found (the waterfall is seasonal – the brook dries up in the summer months).

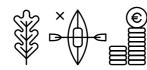


Jumpravmuiža Park



Ziedoņi dolomite rock outcrops





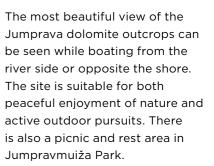
Jumpravas pils 1,
Mežotne Rural Territory,
Bauska Municipality

www.visit.bauska.lv

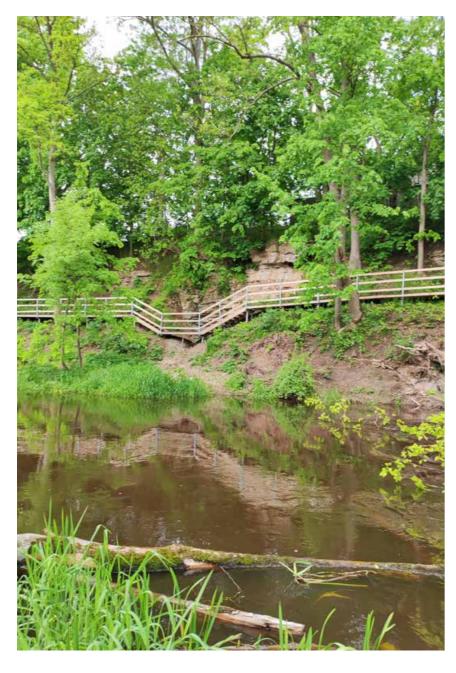
56.415710, 24.109085

Bauska – 7 km, lecava – 27 km, Jelgava – 50 km

Jumprava dolomite rock outcrops







11 lecava Dievdārziņš or God's garden

Trail along the river with dolomite outcrops



The legendary God's garden is located on the bank of the River lecava. It has picturesque views of the opposite bank of the river and the Lutheran Church, and the dolomite rock outcrops are particularly easy to explore, as there are wooden footbridges running for almost 200 metres and a bridge connecting the two banks of the river. Between the outcrops you can see a unique spring, where the water flows towards the sunrise – towards the east.

The well-maintained walking path offers a beautiful view of the Lutheran church across the river.

Legends say that the Dievdārziņš is an ancient place on the banks of the River lecava – it is believed to be the burial place of Napoleon's army officers who fell in the battles of the War of 1812 near lecava.

There are also stories that say that the first church in lecava was planned to be built here, but the timber was piled on the other side of the river. This happened several times, until the Holy Fathers declared that this was a place possessed by the devil, an abode of the wicked, where the church cannot be built. So the church was built on its current site (on the opposite bank of the river), where it still stands after several reconstructions.



Pārupes Street 3-4, lecava, Bauska Municipality

www.visit.bauska.lv

9 56.596934, 24.188816

Bauska - 24 km, Jelgava - 35 km







"Ozolaivas"



Zvirgzde Dune

Dune

Zvirgzde Dune or White Dune is one of the highest inland dunes in Latvia. The Zvirgzde dune massif is part of the Taurkalne plain parabolic dune distribution area; its height is 4-8 m in the western part and 32.5 m in the Eastern part. The dune formed between the former Zemgale dam Lake and the Baltic ice lake around 11.700 and 14,000 years ago. There is a viewing platform at

the top of the Zvirgzde dune, from which the green forest landscape, as well as the closer and more distant surroundings of Vecumnieki, can be viewed. There is a picnic area and a campfire, and for geocaching enthusiasts there is a hideout in the vicinity of the dune. The property is suitable for both the peaceful enjoyment of nature and active recreation in nature.

Meanwhile, history enthusiasts and local residents gather here every year on 22 September - the Baltic Unity Day - to remember with songs and dances, the legendary Battle of the Sun, where Latvian and Lithuanian soldiers fought.



Vecumnieki Rural Territory, Bauska Municipality



www.visit.bauska.lv



(9 56.659550, 24.479462



Bauska - 45 km, Rīga -50 km, lecava - 27 km

13 Bārbele Sulphur Spring

Spring

This natural monument is a powerful underground spring of sulphurous water, located 60 m from the bank of the River lecava. The Bārbele sulphur spring is believed to be one of the first resort places in Latvia - already in around 1650, during the reign of Duke Jacob, a bath house was built near the sulphur spring, called as "the small water sanatorium", which started the development of the place. In the 18th century the spring was the most powerful mineral water spring in Latvia, and its water was used by the surrounding peasants, landlords and noblemen from near and far. Patients bathed in the spring, covered themselves with mud, used it to make warm baths as well as drank the water.

As the number of visitors grew, a cottage district, a dance floor and a park were built on the site. Unfortunately, after the First World War, the area began to fade away as the resort was destroyed.



Bārbele Rural Territory, Bauska Municipality



www.visit.bauska.lv



56.434612, 24.591681



Bauska - 32 km, lecava - 35km



Although it has been partially restored over time, the concentration of sulphur dioxide in the water decreased and its therapeutic effect was lost. After the Second World War, the resort was destroyed again and was never rebuilt. The site is suitable for both adventurers and those who want to be alone. A small resting and campfire area has been built nearby, as well as a wooden platform from which everyone can reach out, take a dip and taste the refreshing water of the sulphur spring.



Bārbele Sulphur Spring

Skaistkalne **Granary**

Exposition

An interactive and educational exhibition has been placed in the Skaistkalne Granary to highlight the uniqueness of Skaistkalne and to educate about the geological and geomorphological processes in this area. The aim of the exhibition is to demonstrate with multimedia solutions what the Skaistkalne karst sinkholes are, how they are formed, what happens underground and above ground, and to simply surprise the visitors. The interactive exhibition can be complemented by a hike to the Skaistkalne karst sinkholes in the forest to see these unique natural values with one's own eyes.





Dzirnavu Street 2A, Skaistkalne, Bauska Municipality



www.visit.bauska.lv



56.379154, 24.651203



Bauska - 35 km, lecava - 45 km

Skaistkalne karst sinkholes

Karst sinkholes, karst process area

Skaistkalne karst sinkholes are the largest geological and geomorphological natural monument of this kind in Latvia, as well as the most distinctive karst relief that is still evolving (more than 100 ha of it is included in the Natura 2000 list of European Protected Areas). Skaistkalne karst sinkholes are considered to be the most magnificent in Latvia!

The karst process area includes karst sinkholes of different sizes. the lakes within them or the wet puddles at their bottom. Karst processes are active in this area; even new, small karst sinkholes can be observed closer to the River Mēmele.

A karst is an unusual geological process that takes place underground. Water flushes soluble rocks (such as gypsum, dolomite, sandstone or others) and creates underground voids funnels, wells, channels, caverns or caves - which gradually expand to form as sinkholes.

The reason for the karst process specifically in the Skaistkalne area is that there are significant

Mežezers



gypsum layers and the area is surrounded on both sides by two rivers - the lecava and the Mēmele. The underground water streams that flow through them cause washouts.

The well-maintained nature trails offer leisurely strolls, exploring one of the most remarkable sinkholes - Kugurdobe and Liepu dobe, a deep karst lake -Mežezers, as well as other sinkholes. In the territory of Skaistkalne karst sinkhole there are scenic views, a recreation area is set up, and it is also a stop on the "Leišmalīte" boating route. Guided tours are available by appointment and great stories to hear about the formation of the sinkholes.

The area is suitable for both the peaceful enjoyment of nature and for active outdoor recreation, for adventurers and those who want to be alone.



Skaistkalne Rural Territory, Bauska Municipality



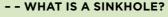
56.390048 24.689264



① Bauska - 38 km



Kugurdobe



SINKHOLES ARE NEGATIVE SURFACE SHAPES, SUCH AS FUNNELS, PLATES, WELLS, AND BOWLS, CREATED WHEN THE UPPER LAYERS OF THE EARTH FALL INTO UNDERGROUND CAVITIES.



Mežezers



River Mēmele



Barn Sinkhole



Mežezers



Many inhabitants of Skaistkalne or those living nearby know stories about the earth suddenly opening up, a horse or a goat disappearing or a farmer's cultivated fields suddenly turning into small lakes... No wonder that the karst sinkholes of Skaistkalne have been given appropriate names - Hay Hollow, Goat Hollow, Barn Hollow. They say that as the sinkholes were forming; a goat in one place, a haystack in another, or even a shed suddenly disappeared under the ground!

The Kopeika Sinkhole was probably so named because it naturally resembles the shape of a coin (kapeika in the past), but the Centenary Sinkhole was named in honour of Latvia's centenary, as it was discovered in that year.



Skaistkalne Rural Territory,
Bauska Municipality

www.visit.bauska.lv

9 56.386538, 24.699753

🕀 Bauska - 38 km

16 Gypsum outcrop

Outcrop

The Gypsum outcrop is a unique outcrop of gypsum formed on a small terrain path in the area of the Skaistkalne karst sinkholes. It can be seen opposite the River Mēmele and it is located next to one of the newest - the Centenary sinkhole. The outcrop has formed a rosette shape and is curiously covered with a layer of vegetation, mainly mosses and lichens.

-- WHAT IS GYPSUM?

GYPSUM IS A SOFT WHITE OR GREY MINERAL COMPOSED OF CALCIUM SULFATE DIHYDRATE, WITH THE CHEMICAL FORMULA ${\rm CaSO_4~2H_2O.}$



Gypsum outcrop



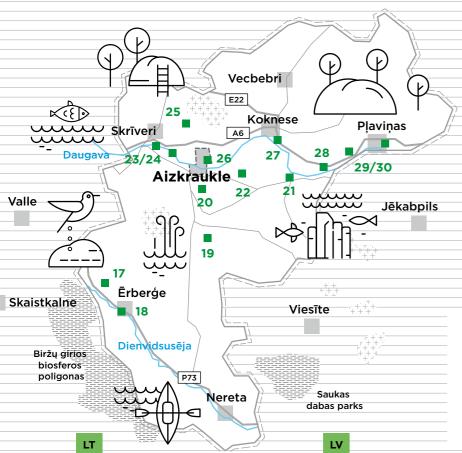
Centenary sinkhole

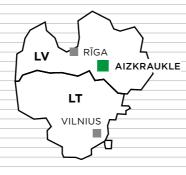
- 32 --

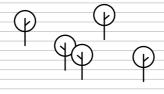
LATVIA ZEMGALE REGION

AIZKRAUKLE

AND SURROUNDINGS









WHERE TO EAT OR STAY OVERNIGHT?

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.VISITAIZKRAUKLE.LV



Confluence place near Koknese of two rivers - the River Daugava and the River Pērse

Lūli Great Stone

Secular stone

The width of the stone is 3.8 m, length - 4.2 m, height -1.9 m. circumference - 13.5 m. volume - 11 m³. The secular stone is light grey and pale pink granite with bands of peamatite.

The stone is located in the forest, not far from the Lūli houses, which is the origin of its name - Lūli Stone (also Lūli great stone, Great Lūli stone). It is the largest stone in Mazzalve Rural Territory, probably dating back to the Ice Age, when it was brought here by a glacier and left behind.

The stone can be found by following the signs. Until that point, you have to walk along a forest track, which can be wet, so boots will come in handy. This place will appeal to lovers of slow strolls and those enjoying nature during all seasons. Here you can draw on the power of silence and leisure. A spruce and a birch tree close to the stone attract special attention.



Legend says that Swedish gold is hidden under the stone.



Mazzalve Rural Territory, Aizkraukle Municipality

56.40322. 24.97136

- www.visitaizkraukle.lv
- Ērberģe 7 km, Nereta - 35 km

-- ACTIVITY IDEA -"STONE HUNTING"

TOGETHER WITH CHILDREN TRY TO FIND:

- MISCELLANEOUS MINERALS
- FOSSIL REMAINS
- · A ROCK WITH ONLY ONE COLOUR (IS THIS POSSIBLE?)
- A STRIPY ROCK
- INTERESTING ROCKS -**EXPLAIN WHY**
- A ROCK WITH WHICH IT WILL BE EASY TO CRACK A NUT
- A ROUGH ROCK
- A ROCK THAT MAKES ONE SMILE.
- A SMOOTH ROCK THAT ROLLS
- A SOFT CRUMBLING STONE
- A HARD STONE THAT IS LARGER THAN THE PALM OF A HAND
- A FLAT, GLACIER POLISH STONE
- TWO STONES THAT LOOK SIMILAR

THIS ACTIVITY IS INTENDED FOR FAMILIES WITH CHILDREN AND CAN BE DONE ANYWHERE IN NATURE. THE LIST MAY BE SHORTENED OR MADE MORE DIFFICULT TO ADAPT TO THE CIRCUMSTANCES, ALSO WHEN GOING TO SEE SPRINGS. **OUTCROPS AND OTHER** OBJECTS.

18 Dienvidsusēja

River

Dienvidsusēja (also called the Susēja, the Great Susēja or the Suseja) is a tributary of the right bank of the Mēmele. It flows out of the Aknīste depression on the west of Subate, crosses the Selonia hillock and the Taurkalne plain, and at lesalnieki flows into the River Mēmele. The 4.2 km-long Dienvidsusēja is also a border river between Latvia and Lithuania. There are three hydroelectric power plants on the river, which have a definite impact on the flow of the river. The first one is in Nereta, then after Ērberģe, and the last one is just before the mouth of the Mēmele. Because of the last two, the stretch after Erberge is not as attractive for boating as before; the river (with a few exceptions) is swollen and wide.



Dienvidsusēja near the Ērberģe, Aizkraukle Municipality



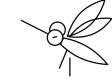
www.visitaizkraukle.lv 56.36671, 25.02104



Nereta - 28 km, Aizkraukle - 51 km



historical sites and attractions on the banks of the Dienvidsusēja -Nereta Mill, R. Gurklis large wooden sculpture garden in Sproģi, Kronīši woodworking, Ērberģe Church and manor. Sproģi also has a sitting area, a fireplace and a gazebo by the river. A campfire is also set up in the Ērberģe Stage Park. The river is accessible by car. Boating on the Dienvidsusēja is a peaceful way to enjoy nature - there are no fast rapids. Remember not to leave any litter on the river while boating and relaxing on its banks.





River Dienvidsusēia



"Selonian boats" River Dienvidsusēja



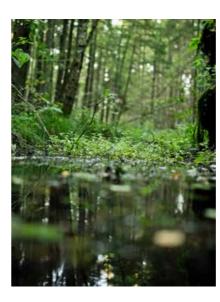
Ellīte sulphur spring

Sulphur spring

The sulphur spring flows from the Ellīte bog, and the chemical composition of the water has healing qualities. Sulphate water is calcium sulphate-hydrogen carbonate water containing hydrogen sulphide (H₂S), formed from gypsum circulating in Upper Devonian rocks by the action of sulphate-reducing bacteria in areas where a thick layer of peat has been deposited over the gypsum. In ancient times, mud was also taken from the springs for medicinal purposes.

The ancient sulphur spring is located on the edge of the Ellīte bog. The bog itself is a mythological natural object, while its sulphur spring is an ancient place of worship that is still revered today. Sulphur water has always been considered healthy and healing - there has always been someone claiming to have been cured by washing or drinking it.

Locals also tell stories of explorations and discussions about building a health resort near the shallows during the First Free State. However, it is not known why the plans were not implemented. This is a great place to relax - there is a gazebo with a wooden bench and table, and an informative stand next to it. Signpost at the nearest land road, bridges over ditches. The water fountain and trail have also been improved.

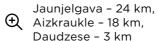




Daudzese Rural Territory, Aizkraukle Municipality









Ellīte sulphur spring



20Korkuļi dry streambed and underground river

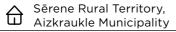
The river dry streambed, underground river, dolomite outcrops, ravine



The Korkuļi or Kubuļi brook resembles a small but welldefined river with a sandy bottom. The river flows through a 10–15 m deep primeval ravine; about 300 m downstream of the Korkuļi houses, and starts to disappear into the swallets until it becomes completely dry. The river reappears from underground on the bluff of Lauce, where it has formed a small ravine.

This is the largest overflow of river water in Latvia that can be directly observed in nature. At least 10 swallets can be found along a 650 m stretch of the valley – places where, as a result







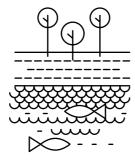




of geological processes, the river disappears underground and continues as a dry streambed. The vanished waters of the River Korkuļi flow from eight locations



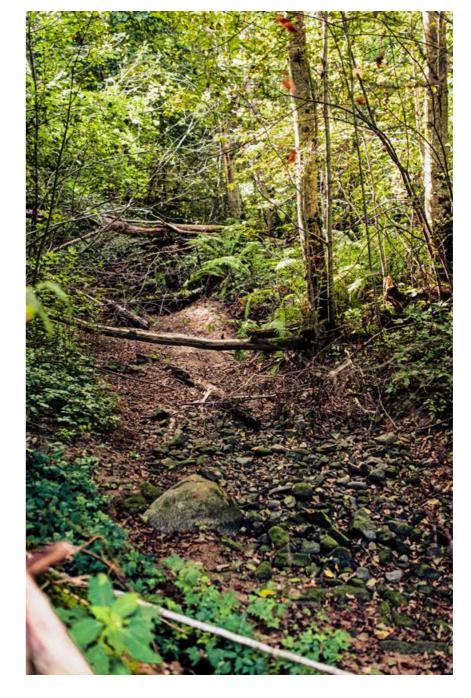
River Korkuļi



in the Lauce valley – over 550 m away. One of the largest "springs" discharges into a circular depression – a notch in the slope of the Lauce valley. It has been labelled a "karst sinkhole". The difference in relief between the River Korkuļi and Lauce is 25 m. Here, water overflows through fractured dolomite layers.

The Korkuļi and Lauce valleys have preserved their primitive nature with steep slopes. The slope and ravine forests are home to broad-leaved trees and rare plant species.

The site is close to the P 76 road and has parking. However, the Korkuļi dry streambed and the underground river are a special natural object, and although its accessibility is rated as moderately difficult, you will only be able truly grasp its magic if you are not afraid and walk through the whole area.





Sērene karst sinkhole



On the left Korkuļi dry streambed

21 Staburags

Cliff (underwater)

Staburags is a narrow limestone dome of springs, about 18 metres high, connected to the valley slope. Dolomite layers of the Upper Devonian Daugava Suite are exposed at the top of the valley slope. The rock, once popular with tourists, is now covered by the waters of the Pļaviņas reservoir, but the highest part of the outcrop (currently up to 2 m high above the water level) is located in the middle of the nature monument, next to a concrete staircase.

The dolomite outcrops that surround the Daugava valley were formed at the end of the Ice Age, as glacial meltwater eroded into the underlying bedrock. Presumably, the valley did not form as a result of a single glaciation, but began to form several hundred thousand years ago. Before the reservoir was created, erosion from the River Daugava played a role in the regular renewal of the outcrops, but Staburags itself was formed from hard spring water deposited by calcium carbonate material spring limestone or travertine.

The Staburags Memorial Site opens up an unusual view and a special feeling for those interested. Despite being underwater for more than 50 years, the special aura of the cliff remains to this day. The special feeling is enhanced by a buoy, which has been placed where the Staburags cliff spire with a spring used to be.

A memorial site has been created in the Vienība grove, close to the River Staburags, to commemorate



Sculpture "Daina" in Vīgante Park in the middle of the 20th century



Sculpture "Daina" in Vīgante Park

the flooded rock and the natural sites in its vicinity. The Staburags cliff memorial sign "God's
Ear", the daylilies garden, the
Staburags Community Centre and its exhibitions are also nearby.
In addition, Vīgante Park offers beautiful walks, and you can visit P. Barisons gazebo, where you can not only listen to the composer's works, but also learn all about the tradition of the Song Festival.
The Staburags Memorial can be enjoyed on an easy, short walk.
Guided tours are also available.

Among the 82 versions of the Staburags tales in the Latvian folklore repository, the most common version tells the story about a girl whose fiancé was a fisherman. Once, when she was waiting for her fisherman on a cliff promontory, a big storm came up and the young man drowned. Seeing this, the girl remained weeping on the high shore until she froze and turned into stone, but her tears did not stop flowing.













Cliff Staburags in the middle of the 20th century



The Daylilies Garden

22 "Bristene" Geodetic arc point with field observatory

Industrial monument

The Strūve Geodetic Arc is a triangulation survey chain, designated as a UNESCO World Heritage Site. The Bristene point has been used for both geodetic and astronomical measurements and, together with the observatory established in the spring of 1826, has not only scientific, but also cultural, historical and educational importance.

The last excavation work was carried out on 31 August 2011, when the centre of the authentic point was uncovered. In autumn of the same year, the point was covered up for winter to preserve

Geodetic point of the meridian arc of the stream "Bristene", Sece Rural Territory, Aizkraukle Municipality

www.visitaizkraukle.lv

9 56.58127, 25.3595

Aizkraukle - 16 km, Jaunjelgava - 24 km, Jēkabpils - 40 km



it and to allow for further research work to be carried out promoting the site. The historical point, which is also included on the State List of Protected Cultural Monuments, has now been restored and is hidden under a cupola, while the square has signs pointing to other nearby Strūve points.

The point is freely accessible and easy to find for all interested people, following the signs from the P 76 road. There are several campfire and rest areas, sleeping nets and bicycle racks, so that visitors can take their time to learn about the history of the area and enjoy the special aura that surrounds Bristene.





Aizkraukle Castle Mound. Nature Park of the Daugava Valley



Ceplis (Jaunzemes) dolomite outcrop. Nature Park of the Daugava Valley

23 **Nature park of the Daugava Valley**

River valley

The Nature Park covers part of the northern slope of the Daugava valley, where 27 dolomite outcrops, as well as springs and seeps, have been identified (both in the upper and lower part). The majority of them are within the territory of the Ceplis Dolomite Outcrops Natural Monument. The Nature Park was created to protect the most characteristic part of the Daugava valley, which remained unchanged during the construction of Plaviņas HPP. Its main value lies in the steep slope of the valley's main bank, up to the mouth of the River Dīvaja, where valuable broad-leaved slope and ravine forests can be found. There are also dolomite outcrops and spring seeps on the bank, closer to Aizkraukle. The Ceplis (Jaunzemes) dolomite outcrop, consisting of two larger and a number of smaller outcrops, both naturally and artificially formed, the valley slope, springs, seeps and limestone deposits from the springs can be seen here. The area contains a wide range of natural, botanically valuable dry

meadows on calcareous soils and moderately wet meadows with rare and protected plant species. Calcareous sandy meadows and eutrophic stands of tall grasses are also observed. The territory of the Nature

Park contains several cultural

protection: Aizkraukle Castle

Aizkraukle Castle ruins by the

River Karikste where it flows

Mound, Lejasžagari burial-ground,

monuments under state

into the Daugava and others. It can be reached from both Skrīveri and Aizkraukle - the route can be easily found on a map, but those interested can also use the specially marked Daugava Trail, which runs along the River of Destiny, connecting these two settlements on an exciting journey. The Nature Park is ideal for walking and hiking enthusiasts, history explorers and discoverers of fascinating places - visitors will be amazed by the untouched nature and its uniqueness. But it must be remembered that it is created to take care of environmental values and preserve them for future generations, so in the Daugava valley one must act responsibly towards the environment.



Nature park "Daugava valley", Aizkraukle Municipality

www.visitaizkraukle.lv



56.61092, 25.16388



Aizkraukle - 3 km, Skrīveri - 2 km



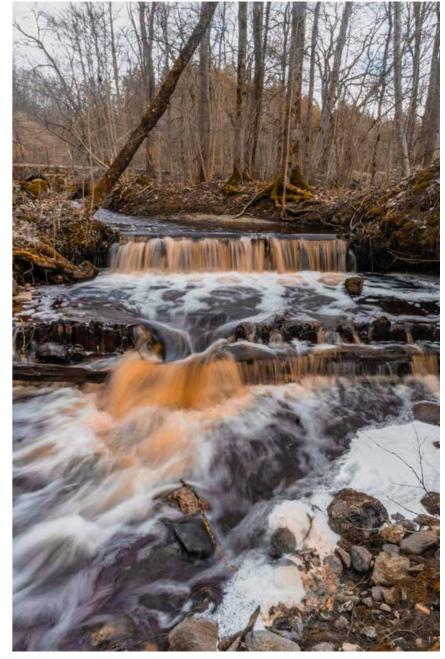
During the spring floods, the River Karikste is a challenge for boating enthusiasts, while the river banks of the Aškere have a well-maintained Spīdala walking trail with bridges and stairs. The landscape here is breathtaking especially in spring, when the cascading water rushes down the Daugava. The trail ends at the highest castle mound on the banks of the Daugava - Aizkraukle Castle Mound.

The tale "How the Banks of the River Daugava Originated" is recorded in Sece. It says that in ancient times the Daugava had no banks. Once the devil got angry and wanted to dam up the Daugava - he wanted to throw a big stone into the Daugava so that it would overflow and drown all the people.

One night it actually thought to carry such a stone. So he carried it, but because hell was so far away, it took him a long time to carry it. Already carried almost to the Daugava, suddenly - a cock crowed. The devil threw the stone to the ground and fled to hell.



But at that time, a Giant lived with the people. He arranged with the hard-working peasants and went to build ramparts along the Daugava: a smaller one on one side and a bigger one on the other. This is how the banks of the Daugava originated.



24Kraukļi (Raven's) stone

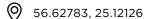
Secular stone

The Kraukļi Stone is a 40-tonne, pale pink, Rapakivi granite, 3.9 m long, 3.8 m wide, 2 m high and approximately 15 m³ in volume. This is the only stone of its type in Latvia that does not correspond to the classical sacrificial stones with trough, or to other sacred stones.

The stone is carved with a deep V-shaped groove and a hole, and has the shape of an axe rather than the oval shape characteristic of glacier-bearing stones. The stone is located in a depression, next to the River Kraukļupīte. Suitable for those who want to enjoy some solitude. It is an ideal attraction for peaceful nature lovers travelling by bike, on foot or by car.

Skrīveri Rural Territory, near Riga-Daugavpils highway (turning to Purapuķe Street), Aizkraukle Municipality





Skrīveri – 1 km, Aizkraukle – 13 km, Koknese – 21 km



- - SOLVE THE RIDDLE:
NEVER BORN, NEVER
GROWS, NEVER DIES, BUT IS.

/ANSWER - STONE/

Legends say that a pot of money is hidden under the Kraukļi stone and that the devil wanted to fill up the Daugava with this stone. The name of the secular stone is explained in the legends as follows: people were once sacrificed at the Kraukļi (Raven's) stone, and their bodies were abandoned there, which is why ravens gathered around them. This is how the stone got its name.



25 Meļķitāri Trough stone

Secular stone

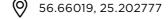
Also known as the Stone of Sacrifice and the Devil's Stone. Excavations and folk tales show that the Meļķitāri Trough stone was used as a place of worship until the 19th century. The water accumulated at the mound was believed to heal. People have thrown small coins in the trough for treatment. The stone is made of Rapakivi granite, 4.9 m long, 3.7 m wide and 25 m³ in volume and 14.9 m in circumference. The shape of the secular stone is partly rounded, but there is a cavity at the top, which is 1.95 m long, 0.5 m wide and 0.18 m deep. It is probably the largest carving of its kind in Latvia, but most researchers believe that the cavity

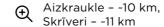
The stone is located in the middle of a private field, but is easily accessible from the adjacent road.

is natural.













26Aizkraukle multifunctional bicycle park

Industrial attraction

The modern and attractive multifunctional bike park is located opposite the Aizkraukle Sports Centre - in a scenically beautiful location, and is suitable for a very wide audience. The square has a paved cycle track and a skate park. The cycling track is suitable for riders of all ages and fitness levels and for anything that rolls - bikes, scooters, skateboards, rollerblade. Meanwhile, the skatepark offers riders a chance to get a little more extreme. The cycling park on the river bank depicts the geomorphological pattern of the Daugava reservoir and allows you to enjoy its former relief, which was artificially created exactly as it was before the river was flooded. It is a geomorphological model of the Daugava reservoir and demonstrates how natural processes have been influenced by both the geological period of glacial activity and modern economic processes, creating the largest hydroelectric power plant in Latvia.





Vecmaurēni-1, Aizkraukle, Aizkraukle Municipality

www.visitaizkraukle.lv

9 56.59933, 25.26276

Koknese - 15 km, Skrīveri - 13 km The construction of the dam changed the shape of the river. Now, taking advantage of the rough topography of the multipurpose bicycle park, you can see the deepest part of the Daugava reservoir, the ancient river bed, and the ancient hills that have now become islands. The bravest riders will also notice the highest point of the track - "Heart Island", while its grey base symbolises the basic dolomite of the Daugava - it was thanks to its hardness that Aizkraukle was chosen for the construction of the HPP.

27Pastmuiža devil stone

Secular stone

The Pastmuiža devil stone is one of the most widely known mythological stones in Latvia. It consists of two parts: the longer part is 3.5 m long, the wider part is 3.1 m wide and the higher part is 0.9 to 1.9 m high.

Although traditionally this site is referred to in the singular, it is actually two different stones, which tradition considers as one. The distance between the largest and smallest stone is 3.15 m. The smallest stone surface is completely flat and even (2.6 m longest, 1.7 m widest). Meanwhile, the surface of the large stone is sloping, flat, a maximum of 3 x 3.4 m, much more uneven and jagged than the smaller stone. In composition, both stones are similar - greyish, medium crystalline-fine crystalline granites.

The stones show no signs of human hammering or splitting. The secular stone is thought to have split during glacial retreat. Both stones are almost entirely (95%) above ground, easy to see and very scenic.



A beautiful view opens from the stone to the River Daugava flowing beside it. Looking into the river, the Koknese Castle ruins also can be seen in the distance. A manor house with a rich history – Pastmuiža – once stood near the stone.

Koknese Rural Territory,
Aizkraukle Municipality

www.visitaizkraukle.lv

9 56.627123, 25.453154

Koknese – 3 km, Pļaviņas – 21 km, Aizkraukle – 15 km There are various tales related to this stone with a rather similar story – the devil carried the stone to dam the Daugava, but a cock crowed and the stone was broken in two.

One story says that the devil threw a stone on top of a witch's hut, but Thunder, chasing the devil, smashed the stone. However, researchers have not been able to find any "devil's fingerprints" on the stones.



28 Klintaine dry streambeds and karst sinkholes

River dry streambeds and karst sinkholes

Karst processes are gradually causing the disappearance of the River Klintaine in the Plavinas area, leaving behind only a dry bed. The river has a distinct ravine at its most pronounced part, but water only flows through it in very rainy summers. Before the Daugava valley was flooded, the River Klintaine reappeared above ground as a spring on the banks of the Daugava. Now it is a protected natural object at the national level, and its territory is partly located in the Klintaine Nature Reserve, as well as in the Daugava valley - the place where the hill-valley macroforms separate the Central Latvian lowland from the East Latvian lowland.

The nature monument consists of the valley of the Klintaine or Buda Mill Stream with the sinkholes in the riverbed - swallets and a stretch of dry streambeds. In the upper part of the riverbed, on its sides, there are small dolomite outcrops.

The bed has several swallets, but the largest is located in the middle of the bed and receives almost all the river runoff during lowwater periods. At present, karstic processes in the area of the natural monument are reflected in the functioning of the swallets and the dry streambeds, which do not cause geological changes in a short period of time. However, this complex of natural formations is important on a national scale as one of the most distinctive and easily accessible sites for the expression of swallet life. The site is located in Klintaine rural territory, close to the "A 6" or Riga-Daugavpils highway and is freely accessible to all interested persons.



Klintaine dry streambeds and karst sinkholes



In the surrounding area, some of the meadows have not been ploughed or regularly cultivated and are therefore typical examples of natural meadows, and they contain specially protected plant species.

Here you can enjoy peaceful nature, and there is an information stand at the site, where you can also find details of hiking and cycling routes in the surrounding area.

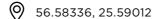


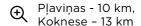
Cycling routes in the county













Boundary-mark or Stukmanu Peter's stone

Secular stone

The stone is one of the four boundary-marks of Lokstene. It is the oldest dated boundary stone in Latvia, carved with the coats of arms of the Archbishop of Riga and his vassal Vrangelis (the Archbishop's sign of ownership the bishop's cross and crosier - is still clearly visible). Also known as the Swedish Stone and the Great Stone, it has been a well-known cultural and historical site for centuries. It is 2.6 m long, 2 m wide, 1.9 m high and 8 m in circumference.

The stone has an interesting history. A document from 1437, describing the boundary of the Lokstene castle district, mentions four stones with carved crosses and the coat of arms of Vrangelis. The match between these boundary-marks and the plan drawn by Fr. Kruze in 1839, where one of the four boundary stones is definitely identifiable as the modern Stukmaņu Peter's Stone, makes it possible to believe that the shield-shaped mark carved into it is indeed an early coat of



arms of the Vrangelis nobility. It is considered that Heinrich Vrangelis had received a grant from the Archbishop in 1277 and administered the lands around Plavinas (Lokstene castle district) Meanwhile, in the 40s of the 14th century Voldemārs Vrangelis was the Archbishop's Vogt in Koknese. Thus, the demarcation of the lands with these stones could have taken place between the 70s of the 13th century to the 40s of the 14th century The attraction is easily accessible

Klintaine Rural Territory, Aizkraukle Municipality

and has a seating area with

benches.

www.visitaizkraukle.lv



56.60185, 25.66632



Plavinas - 1,5 km, Koknese -24 km, Aizkraukle - 40 km, Jēkabpils - 20 km

Stories say that during Napoleon's campaign in 1812, French soldiers had lunch at the stone and carved images of a knife and fork in the stone to commemorate the event...

However, it should be pointed

out that the large carvings do not resemble the mentioned objects at all, and already in 1794 the cartographer Ludwig August Mellin, visiting the stone, saw a representation of a shield and a sword carved into it. Local people call it the Peter the Great Stone, because another story says that during the Great Northern War, the Russian Tsar left a silver knife and fork under the stone after eating lunch. If anyone can, they can pick up a stone and see if it is true!



30 Skanstupīte waterfall

Waterfall

The three-tiered waterfall of Skanstupīte is formed by dolomites of the Daugava Suite. It is approximately 1.5 m high and 4 to 6 m wide. The waterfall can be seen all along the width of the river, often in winter. Currently, however, the lower spit is noticeably clogged, so it can only be fully viewed when

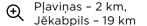
the water level in the Plavinas reservoir is lowered. This is one of the few waterfalls of the Daugava tributaries that are not flooded. This waterfall has various names in the folklore: the Skanstupīte cascade, the Skanstnieki river waterfall, the Skanstnieki Mailupīte waterfall.

It is located on the right side of Draudzības Park, with a viewing platform and benches next to the waterfall, the Swedish sconce where you can take a walk, and a memorial stone to J. Jaunsudrabinš.

Gostiņu parks, Pļaviņas, Aizkraukle Municipality





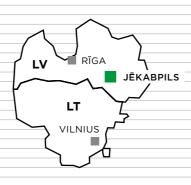


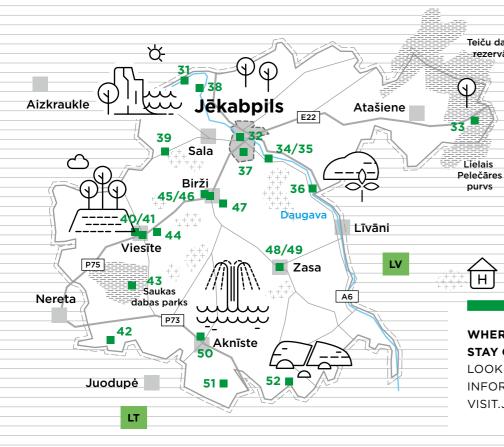


LATVIA **ZEMGALE REGION**

JĒKABPILS

AND SURROUNDINGS



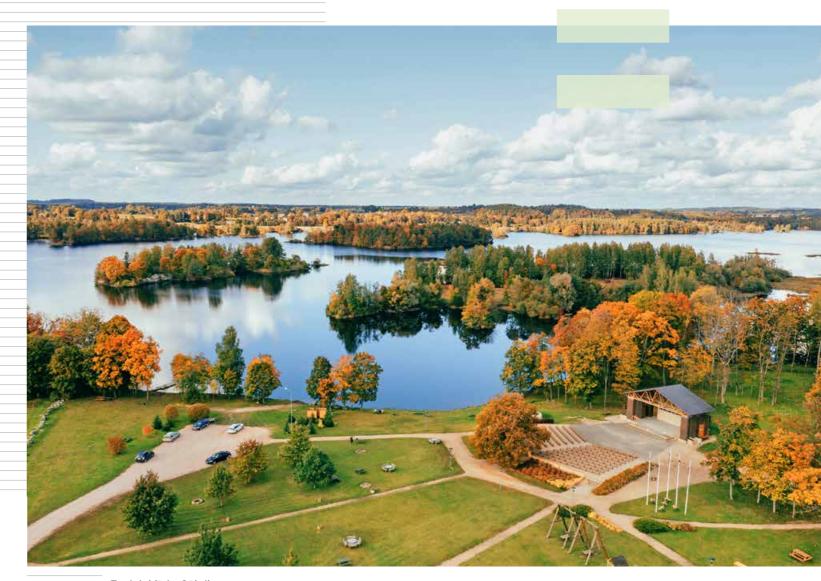




Teiču dabas

purvs

WHERE TO EAT OR **STAY OVERNIGHT?** LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT VISIT.JEKABPILS.LV



Zvejnieklīcis, Sēlpils



View of Krusta bay in 20th century 1930s

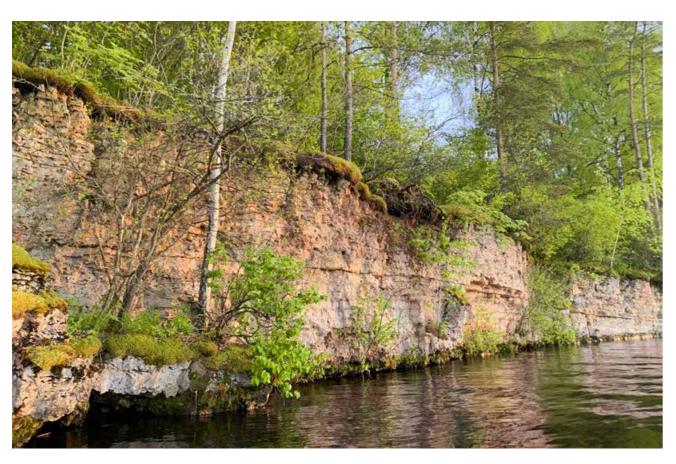


Approximately 100 m from Zvejnieklīcis, Sēlpils Rural Territory, Jēkabpils Municipality

visit.jekabpils.lv

56.582509, 25.625397

⊕ Jēkabpils - 22 km, Aizkraukle - 32 km



Krustalīcis cliffs

They are the longest cliffs in Latvia and run for more than 2.5 km along the River Daugava. Height above water level - several metres. In this stretch of the Daugava, there is a reservoir from the Plaviņas hydroelectric power plant (HPP), and the cliffs of the former (up to 40 m deep) canyon now enclose the river as inaccessible walls 2-4 m high. The cliffs are formed from ancient Devonian marine sedimentary rocks - both platy and cavernous dolomites, containing fossil remains and interesting mineral formations.

Vertical cliffs are unusual and exceptionally scenic in today's Latvian landscape. It is dangerous to climb, and can almost only be seen from the river - by boat or in winter from the ice of the reservoir. Excursions include water transport to the cliffs.

The attraction is a 2022 Geolocation and is suitable for those who like to relax on the water; you can go on an expedition with one of the small watercraft – boat, SUP board, canoe – or explore the cliffs by boat.



River Daugava near Sēlpils hillfort



Boat "Mežmalas viking"

32Strūve geodetic arc point "Jakobstadt" or "Jēkabpils"

Industrial monument

This point completes the part of the Tērbata-Krustpils triangulation surveyed by Friedrich Georg Wilhelm Struve between 1822 and 1827. Jēkabpils point was surveyed and established in June 1826. Curiously, this point might not have existed at all if the tower of Krustpils Castle had been able to house all the necessary astronomical instruments (two Repsold pendulum clocks were brought from the Tartu (Tērbata) Observatory, as well as an Ertel vertical circle, a Reichenbach universal instrument and an eightfoot Dollond transit instrument).

Due to the unsuitability of the tower, Struve found a convenient location on the opposite bank of the Daugava, from where the necessary triangulation points could be seen. The Jēkabpils point is located in a small park named after Struve.



This point is easily accessible and located in the town of Jēkabpils. Visitors can explore the unusual Struve Point, learn about its history at the information stand, and try out the fascinating environmental objects in the form of educational play equipment (kaleidoscope, telescope, compass, water game and various interesting mirrors).

Strūves parks, Jēkabpils, Jēkabpils Municipality

visit.jekabpils.lv

9 56.501024, 25.855491

Pļaviņas - 19 km, Viesīte - 32 km



In 1931 for observation purposes a 42 m high triangulation wooden tower was built above the Struve point. For several summers, the teaching staff and students of the University of Latvia conducted astronomical and geodetic research and measurements

33 Kristakrūga viewing tower

Nature Reserve

Although it is only possible to walk through the Teiči Nature Reserve on a few occasions and with a guide, it is also possible to see the natural values and beautiful landscape of the area from a distance. A 27-metrehigh observation tower has been specially built for this purpose in Kristakrūga. This gives you a view of the Teiči bog from its southern edge. Teiči Nature Reserve is the largest nature reserve in Latvia and one of the largest intact moss swamps in the Baltics. The reserve is important for the preservation of specific and rare bird species, as a feeding and resting place for migratory waterbirds, for the preservation of plant species and habitats characteristic of wetlands, and for the existence of many invertebrate species. The majority of the total area, or 69%, is covered by moss bog. It was formed between 10 000 and 12 000 years ago and is a so-called high bog, with many dome-shaped elevations rising up to seven metres above the rest of the area.



The bog has 18 lakes larger than a hectare. They are mostly located on the slopes of domes. Since its establishment, the reserve area has been free of economic activity and restricted to visitors; many rare and protected species can be found here.



Atašiene Rural Territory, Jēkabpils Municipality

visit.jekabpils.lv

9 56.539718, 26.566149

① Jēkabpils - 45 km, Atašiene - 12 km



Long-eared owl baby



Teiči Nature Reserve

Rogāļi ravine

Ravine

A well-maintained path leads through the ravine, which is guarded by the peacefully snoozing wood carved Latvian deities from the Rogāļi ravine creation myth.

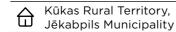
This place is popular with lovers starting their lives together, as the Love Spring flows here. You can also walk the scenic walking trail and see the Rogāļi boulder. The path leads all the way to the bank of the River Daugava, which opens up to a magnificent view of the river of destiny. In wet weather, however, the path can be slippery. The surrounding area is equipped with waste bins and benches. It will appeal to both those who enjoy peaceful nature and those who like an active pastime.







Islands of Daugava River



visit.jekabpils.lv

56.472283, 25.943945



① Jēkabpils - 6 km

The Rogāli ravines can be also explored started from the Daugava by looking for the sign "Water Tourism Route".



The legend says that the Rogāļi ravine is the result of the wrath of Thunder - it was formed from a spray of water created by Thunder. The spring is another witness to the fight between the Devil and Thunder for the love of Laima, but it is not created by either of them - it is the spring of the tears of the dear, good Laima.

35 Rogāļi stone

Secular stone

Although the Rogāli stone is not in the top ten of Latvia's secular stones, it is quite impressive. The stone has travelled from the Karelian Isthmus to the Kūkas rural area. It is 6.5 metres long. 4.6 metres wide and 3.7 metres high, complemented by a 4 metrelong fragment right next to it. It has a girth of almost 19 metres and a volume of 40 m³. The stone has a distinct relief and is made of pale pink granite. Such stones, the composition of which makes it possible to determine their place of origin, are called erratic blocks. To see the stone, follow the signs along the River Rogāli on a specially created scenic hiking route. There are six more wonders to see on the way. It will appeal to both those who enjoy peaceful nature and those who like an active pastime. To take a breather after the walk, there is a small bench on the Rogāļi stone, and if you are expecting a thunderstorm, you should remember the folk wisdom saying that the water accumulated in the hollow on the surface of the stone during a thunderstorm helps you to get rid of the fear of thunder.



Kūkas Rural Territory, Jēkabpils Municipality



visit.jekabpils.lv



56.471952, 25.944167



① Jēkabpils - 6 km



Thunder and Laima were happy about the clean water of the Daugava, but the devil was picking up boulders and throwing them over the lovers. One time, Thunder got angry and plunged into the depths of the Daugava, accompanied by lightning bolts. The Daugava fell silent, all was calm. However, after a while, the devil noticed the furious face of the enraged Thunder. In his large hands, Thunder made one big stone out of the many stones found in the deep and threw it to the devil...



Vaiķi stone

Secular stone

Vaiki stone is one of the 15 largest stones in Latvia. The magnificent secular stone (7.5 x 5.7 x 2.6 m; volume 45 m³) is red-brown Rapakivi granite and the large crystals it contains sparkle in the



It is clearly visible from the Riga-Daugavpils motorway, where it can be seen in all its glory about 50 m from the road. The impressive foot of the stone sometimes shimmers in the water, but even in rainy weather, when the stone surface can be slippery. the flat surface of the stone can be reached thanks to the wooden ladders near the stone. In 2008 Latvijas Pasts also issued a stamp dedicated to the Vaiki secular stone. For those who enjoy peaceful nature.



The top of the stone resembles a table, and legend says it was brought here by none other than the devil himself. Whether it is true or not, can no longer be proven, but people say that warlords such as Peter the Great and Napoleon dined on this stone table as they passed by on their conquests. Peter the Great is said to have left his silver spoon under it.





Vīpe Rural Territory, Jēkabpils Municipality



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56.4254, 26.0759



€ Jēkabpils - 16,5 km





River Daugava near Vīpe, resting place and boat rental "Daugmales"

-- HOW TO MEASURE A STONE? WHAT WILL BE NEEDED:

A MEASURING TAPE (10-20 M) AND TWO CARDS TO BE HELD OR INSERTED INTO THE GROUND NEXT TO THE STONE.

WHAT TO DO: THE FIRST APPROXIMATION OF THE SIZE OF THE STONE CAN BE **OBTAINED BY MEASURING:** THE LENGTH OF THE STONE -THE DISTANCE BETWEEN THE **FARTHEST OPPOSITE SIDES** OF THE STONE; THE WIDTH OF THE STONE, MEASURED AT ITS WIDEST POINT PERPENDICULAR TO THE LENGTH, AND THE STONE HEIGHT - THE HIGHEST POINT OF THE STONE ABOVE GROUND LEVEL.

WORTH KNOWING: MOST OF THE STONES ARE IRREGULAR IN SHAPE, THEREFORE, ACCURATE MEASUREMENT IS DIFFICULT.

-- HOW TO MEASURE THE **VOLUME OF THE STONE:** IF THE STONE HAS A BREAD LOAF SHAPE: LENGTH X WIDTH X HEIGHT / 2. IF THE STONE HAS A PYRAMIDAL SHAPE: LENGTH X WIDTH X HEIGHT / 3. NOTE THAT THE CALCULATION WILL BE ONLY THE SURFACE (VISIBLE PART) VOLUME, HOWEVER, THIS PARAMETER IS MOST OFTEN USED TO COMPARE STONE SIZES. TO DETERMINE THE WEIGHT OF THE STONE IN TONNES, MULTIPLY ITS VOLUME IN CUBIC METERS BY 2.5.

37 Radži stone

Secular stone



The Radži stone, or Brodi quarry stone, is the largest secular stone in Zemgale and the second largest in Latvia. It has a girth of 19 m, a length of 6.5 m, a width of 6.1 m, a height of 4.0 m (2.4 m above the water) and a volume of over 85 m³. The weight of the stone is estimated at 200 tonnes. Large crystalline Rapakivi granite with ovoids (4 cm), and some areas without them. The stone was



discovered in the second half of the 1970s, in a dolomite quarry, when the overlying moraine was excavated. It is located in a reservoir, about 40-70 metres from the shore. The largest Zemgale's secular stone is located in the Radži water reservoir in the territory of Jēkabpils Mežaparks – a former dolomite quarry. Since the quarry was flooded, it has become a favourite recreational spot for citizens and visitors of Jēkabpils in all seasons.

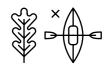
The secular stone is visible from the shore and accessible by one of the water transport options. There is an asphalted road along one section of the Radži reservoir, but in order to see the rock from the shore, it is necessary to go through a meadow to one of the peninsulas. Mežaparks also has various environmental objects, information stands and a wide range of active recreation services.

The main beach of the Radži reservoir is granted the Blue Flag bathing beach quality certificate every year. Boat, catamaran and SUP board rentals are available here. Nearby are the Radži campsite, the X3M paintball club and veikparks.lv, that offers wakeboarding. Mežaparks, located next to the reservoir, offers wellmaintained walking paths, sports fields, an all-season tubing track, the Lūša ķepa disc golf park and other activities.





Radži Water reservoir



Radžu ūdenskrātuve, Jēkabpils, Jēkabpils Municipality

visit.jekabpils.lv

56.4796, 25.8645

Pļaviņas - 19 km, Viesīte - 32 km





38 Struve geodetic arc point Dabors-kalns

Industrial monument

The point was surveyed and laid out between 1825 and 1827 by the eminent geodesist Carl Friedrich Tenner, an associate of Friedrich Georg Wilhelm Struve. Scientists found it in the environment in 2015. The geodetic survey point is located at the top of Taborkalns hill, about 158 m above sea level. The 28-metre-high Taborkalns observation tower is nearby.

The point is located in the Selonia hills, in the glacier margin formation zone. Small hills of domed hills are common in the surrounding area, which are most likely to be kame. They form in the thaw holes and crevasses in the glacier, where meltwater deposits mainly sandy material.

To be able to carry out geodetic surveys in the 19th century, Friedrich Georg Struve and Carl Friedrich Tenner had to build tall wooden towers.

Visitors to the new observation tower don't have to measure anything, but they can experience the feeling of looking out over a vast area from above, and understand where the instruments for measuring the size and shape of the Earth were pointing two centuries ago.

Access to the attraction is easy, and there are enough parking spaces for a bus. There are toilets, an information board, and the trail itself has been well maintained, with benches to rest on as you walk up the hill.



Taborkalns,
Sēlpils Rural Territory,
Jēkabpils Municipality

visit.jekabpils.lv

6 56.584220, 25.689651

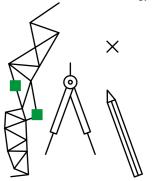
① Jēkabpils - 20 km

39 Struve geodetic arc point Arbidāni

Industrial monument

This is one of the four authentic Struve geodetic arc points found in Latvia. The point was surveyed and laid out between 1825 and 1827 by the eminent geodesist Karl Tenner, an associate of Friedrich Georg Wilhelm Struve. Scientists found it in the environment in 2008.

The point is located in the Selonia hills, in the glacier margin formation zone. Once destroyed, it has now been reconstructed and restored, finishing the work by casting the sign in lead. The Struve geodetic arc points are evidence of the longest and most accurate geodetic survey system of the 19th century, carried out by Friedrich Georg Wilhelm Struve and Karl Tenner. The measurements allowed us to determine the size and shape of our planet, and confirmed Isaac Newton's theory that the Earth is not exactly spherical, but flattened poleward.



Arbidāni, Sēlpils Rural Territory, Jēkabpils Municipality

visit.jekabpils.lv

9 56.483282, 25.628598

• Jēkabpils - 19 km, Viesīte - 20km



"Arbidāni" is located in the forest; the road to this point will be suitable for real adventurers. The GPS on your smart device is a must, as there are no road signs in nature. The point is located in a depression (a pit lined with stones) at the top of a steep hill.

40 Valeskalniņš

Swell-like esker

Also known as the Back of the Buck and the Giant's Grave, Valeskalniņš is located in the town of Viesīte. It is a long hill covered with pine trees, formed in around the 2nd century. It is notable as the only esker of the Selonia mound – a distinctive geographical formation included on the list of nature conservation sites.

Narrow steep mound (height 8 m), about 140 m long. According to the geological situation, it was formed by meltwater depositing sand and gravel material into a glacial crevasse or tunnel. The water under the glacier has been discharging in a south-easterly direction. After the ice melted, the deposited material remained as a wavy shape in the relief. Valeskalninš is the only geological monument in Viesīte and its surroundings. The top of the hill and the Viesīte Evangelical Lutheran or Freedom Church can be accessed by stairs from Viesīte Secondary School or Kalku Street (Stadion side).



Vaļņu Street 14, Viesīte, Jēkabpils Municipality

visit.jekabpils.lv

56.345703, 25.550916

① Jēkabpils - 32 km, Nereta - 25 km



Valeskalniņš is located in a historically interesting place, with a view of the town, the historic Station square in the distance and the magnificent building of the culture centre "Sēlija" behind it. For nature and history explorers and lovers.

The story says that two giants once fought here. The giant who lost his life in battle is buried there. Therefore, the giant's tomb is Valeskalniņš itself.

41 Love Path

Boggy depression

The Love Path is a landscaped footbridge in a swamp forest with rest areas and a children's playground. The path starts with three outdoor games on the pavement and leads to a wellequipped recreation and campfire area at Lake Mazais in Viesīte. It is a small lake in the Selonia hills. It was formed by the melting of glaciers in a boggy depression that runs through the centre of the town. Here you can watch birds, and two "islands" rise off the coast, with sandy bottoms and different flora, in contrast to the rich peat soil of the lower areas. Further on, the path continues as a wooden footbridge through the mudflat, passing through the children's playground at Draudzība Hill (a nice place for families with children!), all the way to the town's stage on Love Island. The path is one-way, approximately 600 m long. This path is a great place for active recreation, walks and environmental education. The path can be enjoyed by starting the walk from two places - from

the historical centre of the town at Brīvības Street 2 or Love island. Well-maintained recreation areas, a campfire, a children's playground, bird-watching and sightseeing opportunities in Viesīte town centre.



Brīvības Street 2, Viesīte,
Jēkabpils Municipality
(from the other side the beginning of the path at the stage parking area)

visit.jekabpils.lv

56.348698, 25.554939

① Jēkabpils - 32 km, Nereta - 25 km





Great Stupeli stone

Secular stone

Reddish granite, large crystalline, with a volume of about 40 m³ and dimensions of 6.80 x 4.90 x 2.75 m. The otherwise flat surface of 25 m² contains several gently sloping depressions, which seem particularly interesting because of the gently sloping ditch found in the deeper soil layers in close proximity to the stone. A small path leads from Stupeli castle mounds to the Great Stupeli stone.

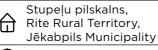
Depending on the season, the surrounding area may be overgrown, in which case access is difficult.

The mythical potential of the site had already been discovered by the ancient inhabitants of the area, as artefacts, pottery shards and even bones dating from the 10th-13th centuries have been found in the vicinity of the great stone at Stupeļi castle mound. In the 1980s, archaeologists studied it and suggested that it might be an ancient cult stone. The shape of the stone itself is a bit like an inverted pyramid, formed from a special type of granite - wiborgite.











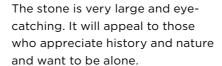
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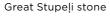


56.169892, 25.464335



Nereta - ~15 km, Aknīste - 21 km

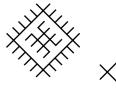














Stupeļi Hillfort



43 Selonia mound

Landform, moraine mound

The Selonia mound is part of the highlands of Upper Latvia and its landforms were formed around 14 000 years ago during the maximum uplift of the peripheral cover of the southern sector of the Scandinavian glacier shield, over an area of 79 000 ha.



Ormankalns Viewing Tower

The 10 km wide mound is located in the southern part of Latvia, rising north from Pļaviņas and stretching north-south to the southern border of Latvia at Rite Rural Territory. To the west, it borders the Taurkalne plain, and

to the east the Aknīste depression, and is surrounded on both sides by boggy valleys.

The Selonia mound was formed at the end of the Last Glacial Period. The meltwaters flowed eastwards, mainly under subglacial conditions, forming subglacial deposits and eskers. The subglacial sedimentary deposits currently contain lakes Viesīte and Sauka as well as a section of the Daugava valley, through which the rivers Daugava, Viesīte and Dienvidsusēja currently flow westwards.

The ridge is rich in ancient Baltic castle mounds. Its absolute altitude ranges from 105 to 165 m above sea level. The highest points of the mound are Ormaņkalns 167 m and Taborkalns 158 m.

The top and steep slopes of Ormankalns are mostly bare, offering a wide landscape of the Sauka Nature Park and Lake Sauka. The current name of the hill comes from the house named "Ormani" located near the nearby Līgo hill.



There is a recreation area on Ormankalns, and a viewing tower on nearby Borīši Hill, commonly called Ormankalns Viewing Tower. It offers a wide and scenic view of the Sauka Nature Park and Lake Sauka. This is a traditional place for celebrating Līgo. In the past, Ormankalns (Urmen) was the location of one of the points of the Struve Geodetic Arc. The surroundings will appeal to those who enjoy peaceful nature, while those who are more active will enjoy the path to the top of the viewing tower.



Lake Viesīte



Lake Sauka

Borīši, Elkšņi Rural Territory, Jēkabpils Municipality

visit.jekabpils.lv

9 56.260522, 25.532377

• Viesīte - 15 km

44 Lake Viesīte

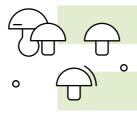
Subglacial valley

The lake is located in a subglacial furrow and has the narrow, long shape, steep banks and great depth - the deepest point reaches 24 metres. It was formed at the end of the Last Glacial Period when melting ice broke the moraine (the Selonia mound) and formed the subglacial trough where the current lake is located. Its area is 214.9 ha, depth up to 24 m, average depth 5.9 m, length 7.5 km, width 0.5 km. The name of the eastern end of Lake Viesīte is Melnezers The River Viesīte flows out of it, carrying its waters to the

rivers Mēmele and Lielupe. Rivers Laudīte, Roņupīte, a ditch from a summerhouse and four springs flow into the lake.

This would be a good place to enjoy peaceful nature; there is also fishing, and skilled anglers can make good catches. Lake Viesīte is home to pike, bream, roach, rudd, tench, golden carp, chub, sunbleak, gudgeon, perch, ruff and stone loach. For a more active holiday, there is a well-maintained swimming and recreation area. There is also a children's playground and a footbridge.





In the olden days, Lake Viesīte was a round lake. The devil didn't like it, so he wanted to take it to Birži Rural Territory. One night the devil got the lake by the edges, but could not bear it, and dragged it along the ground. He dragged it until the rooster crowed and everything had to be abandoned. He didn't make it all the way - he only completed about 7 kilometres. As a result, the lake is no longer round, but elongated.





Lake Viesīte,
Viesīte Rural Territory,
Jēkabpils Municipality

visit.jekabpils.lv

© 56.345573, 25.604963 (public swimming area)

⊕ Jēkabpils - 32 km, Nereta - 25 km



Lake Viesīte

0

0



-- IMPORTANT TO REMEMBER:

THE APPEARANCE AND SMELL OF SPRING WATER CAN BE MISLEADING: THEREFORE. IT IS NOT ADVISED TO USE OR TASTE IT WITHOUT PRIOR TESTING.

- - WORTH KNOWING:

THE COMPOSITION OF SPRING WATER IS MOST DIRECTLY INFLUENCED BY THE ROCKS THROUGH WHICH IT FLOWS AND THE PLACE WHERE THE WATER CAME FROM.

-- HOW TO TAKE CARE OF WATER QUALITY?

WATER QUALITY IS AFFECTED NOT ONLY BY WHERE AND THROUGH WHICH SOURCE IT IS FLOODED, BUT ALSO BY HOW CLEAN THE ENVIRONMENT IS AROUND THE SOURCE. TAKE CARE OF NATURE. THE QUALITY OF SPRING WATER IS SIGNIFICANTLY AFFECTED BY BOTH - THE **UNWANTED WASTE IN ITS** PATH AND THE WASTE LEFT DIRECTLY AT THE SOURCE. IT IS IMPORTANT TO PREVENT SUCH POLLUTION.

45 The Sun spring Spring

The Sun spring does not freeze. even in the severest winter frosts. Access is easy and pleasant, with paths, stairs, a dredged area and a water point. Locals go to the spring for drinking water, which

has historically been considered

sacred and healing.

The spring is located in a historic and scenic area, on the former Birži water mill site. The ancient watermill sluice is about 300 metres from the spring, and the spring itself is in the centre of the Ūdensdzirnas recreation complex. Entry and stay in the complex are free of charge.

History and peaceful nature lovers will enjoy it. There is also a possibility to go for a walk around the complex.





Podvāze river bank, Birži, Sala Rural Territory, Jēkabpils Municipality

visit.jekabpils.lv

6 56.415535, 25.772851



① Jēkabpils - 14 km



The story says that in ancient times, girls who desired a particular beauty would go to the Sun spring to wash their mouths. People say that a girl, who washes her mouth in the water of the Sun spring when the sun rises, becomes not only beautiful in her face, but also sweet and lovely in her heart. For this reason, virgins often go to the spring when they are looking for a suitor.

46 Biržu Zeltene spring

Spring

The Biržu Zeltene Spring is located on the banks of the River Podvāze. To reach the spring, follow the access road past the territory of the recreation complex "Ūdensdzirnas" and the former 20th-century building Mežs school. The access is easy, with stairs. The source of the spring is marked with stones. Historically, the spring has been considered a healing and sacred place.

History and peaceful nature lovers will enjoy it. It is possible to go for a walk in the landscaped territory of the recreation complex; there are paths and bridges.



Podvāze river bank, Birži, Sala Rural Territory, Jēkabpils Municipality



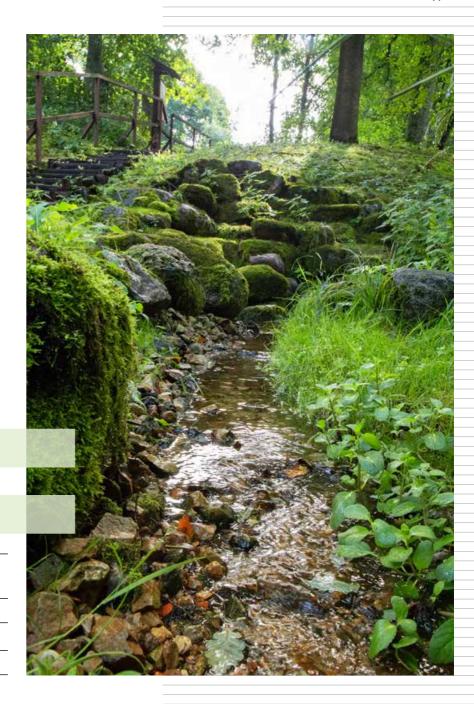
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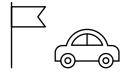
56.415535, 25.77504



→ Jēkabpils - 14 km









Birži, Sala Rural Territory, Jēkabpils Municipality

visit.jekabpils.lv

56.407026, 25.797232

Jēkabpils - 16 km, Viesīte - 18 km

Birži Secular stone

Secular stone

The height of the stone is 2.8 m, the circumference - 12.8 m, the volume - 22 m3, the weight about 57 t. Until 1980, only a small part of the secular stone was visible. It was in a ravine. surrounded by trees, bushes and a pile of stones. When in the 1980s. land reclamation works were carried out, the pile of stones was removed, the field was levelled, but the Birži Secular stone remained. In 1983, efforts were made to move this giant to the centre of Birži in Sala Rural Territory. When the ground was excavated, the sheer size of the stone was revealed, making it impossible to move and the idea remained unrealised.

There is a well-equipped recreation area next to the stone, located in a field. The stone can also be viewed from the road, from where it is clearly visible. Suitable for nature lovers or motorsport enthusiasts because of its proximity to the race track. It is also possible to plan a visit of the secular stone when going to a competition.

48 Sūnas (Moss) pond

Pond with springs

There are 12 springs starting in the pond, the temperature is no higher than 5 to 7 degrees, and it has no bottom but white, bubbling sand. The Baron family once cultivated various algae in the pond. It is located in Zasa Manor Park, which is a specially protected object of local importance and consists of a system of ponds and islets, which is why the park has several bridges. In the 18th century, the park was created as a landscape park by the cascade of mill ponds on the River Zasa, and is equipped with benches and resting places. An excellent place for relaxation, with a wide range of entertainment options.





Zasa Manor Park, Zasa Rural Territory, Jēkabpils Municipality



visit.jekabpils.lv

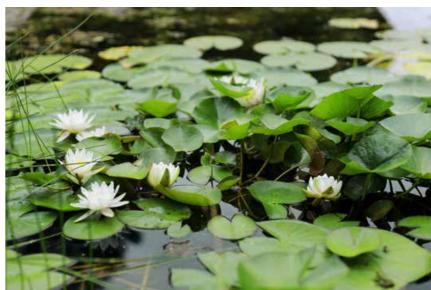


56.29475, 25.97468



Aknīste - 30 km, Jēkabpils - 35 km





Ancient Selonian spring

Spring

The Ancient Selonian Sacred spring is located in Zasa Manor Park. The spring flows eastwards. The spring was used by Ancient Selonians who lived here in the 5th-7th centuries.

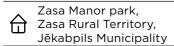


The 18th-century park, created as a landscape park by the cascade of mill ponds on the River Zasa, is a specially protected object of local importance. The park is well equipped with bridges, benches and seating areas. There is also the Sūnu pond and other sights in the park of Zasas Manor.



Zasa Manor Park







56.294956, 25.975832



Aknīste - 30 km, Jēkabpils - 35 km The spring flows eastwards, and ancient Latvians believed that such springs were healing, especially on the day of Māra - 25 March. Drinking the water and washing the face with it makes women more beautiful and healthy and men healthier and stronger.

50 Saltupe Sacred spring

Spring

The sacred spring flows out of the lower part of the southern slope of the River Dienvidsusēja vallev and is so rich in water that it forms a small river - Saltupe, which, after about 100 metres, flows into the River Dienvidsusēja.

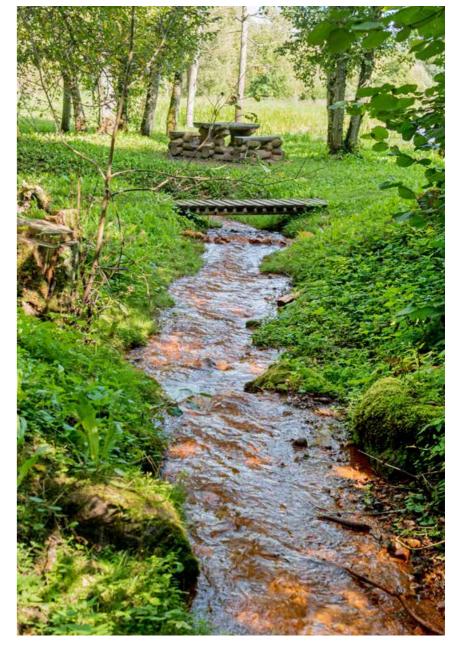
As it filters through the Devonian sedimentary rocks, the spring's groundwater has been enriched with iron, which makes its bed bright orange. In the bed of the Saltupe sacred spring, 3.5 m from the largest source of the spring, there is a stone with a natural, gently sloping depression in its surface. It is small in size, but presumably in its original location. There is a story that it is an ancient cult stone on which offerings were placed. The spring is easily accessible and well signposted.

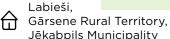












visit.jekabpils.lv

6 56.0994, 25.8098

⊕ Jēkabpils - 55 km, Aknīste - 8 km

51 Dienvidsusēja valley

River valley

It is located in the Gārsene Nature Paths area, where the paths along the valley are about 7 km long. It offers an unusually meandering river, steep cliffs, giant trees and secular stones. The paths start at Gārsene Castle, where you can also see and walk through the 4 ha former manor park. The nature paths were historically



Dienvidsusēja valley

created simultaneously with the construction of the castle complex, and the entrance to the paths can be found at the lined Baron's swimming pond. At the beginning of the path there is also an ash tree avenue, which was once planted by the Baron's gardener, while in the middle of the path visitors can sit on the Baron's chair - a stone with a man-made seat in it. There are well-maintained walking and cognitive paths of various lengths in Garsene forest -Cultural and Historical Path, Green Path, Barons walking path, Staburags path, with resting and campfire places. In total, there are more than 40 unique natural objects - both stones and trees as well as the most significant architectural and cultural secular stones of the municipality. From May 2016, there is also the Twilight hour path, which is especially suitable for inquisitive little travellers. The path tells the story of the lives of Gnomes in the forest and is based on stories from the Great Gnome Encyclopaedia. The trail can be either cycled or peacefully walked. There are several well-maintained recreation areas and bridges; it will also be interesting for children.

artificially created, cobblestone-

52Romza Secular stone

Secular stone

The Romza secular stone is as vet unweighed and unexplored, but still attractive for its unexplained history. The question still remains - is the stone cracked, broken, brought here or has it been here for ages? The stone and its north-western fragment were most probably one whole stone, but split or broken (the forged areas are not visible). The length of most of it is 3.4 m. width 2.3 m and height 2.4 m. The two parts have a total length of 5.9 m and a width of 2.6 m. The two parts have volumes of 10 and 6 m³ respectively. Large crystalline and giant crystalline red granite.

The stone is located in a natural rural setting, close to a rural road. It can be reached by entering Ancene, crossing the crossroads towards Bebrene and following the signs. The secular stone is located on private land, but access is easy as it is close to an access road.



Ancene, Asares pagasts, Jēkabpils novads

56.102000, 26.005000

visit.jekabpils.lv

Aknīste - 20 km, Gārsene - 17 km

Romza Secular stone

- - FIND THE BIGGEST STONE!

WHEN GOING TO SEE
NATURAL OBJECTS WITH
THE FAMILY, EVALUATE
WHICH OF THE STONES
IS THE LARGEST BY
COVERING IT - IT WILL
BE A REAL TEAM WORK
AND WILL PROVIDE
AN OPPORTUNITY
TO DETERMINE THE
APPROXIMATE SIZE OF
THE STONE.



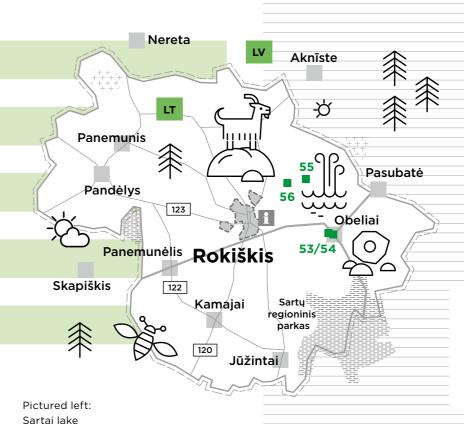


LITHUANIA

PANEVĖŽYS COUNTY

ROKIŠKIS

AND SURROUNDINGS







WHERE TO EAT OR STAY OVERNIGHT?

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.ROKISKIOTIC.LT

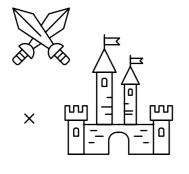
53 Raminta Spring

Spring

The spring is decorated with a bricked stone wall with a pipe and a gutter to drain the water. The source of the beautifully carved spring is surrounded by a park where wooden benches, gazebos, and even three bridges over the Rastupys stream await visitors in the shade. The water is clear, colourless, odourless, and cold (8.9 °C). Composition - calcium, magnesium sodium - bicarbonate, sulphate water. The (yellowish) colour of iron deposits is visible on the stones.

The legend speaks of the love between a girl named Raminta and the warrior Žvitrius, who did not return from battle.

There is also a well-known story about the lake of Obeliai, which speaks about the sunken palace of a German and a money box. Finding a treasure of money in the muddy aging lake is not as easy as it is to meet the brave blond-haired Lithuanian woman and her white horse in the spring. Without anyone seeing, Raminta helps, comforts, and reassures only an honest Man who loves his land.



Obeliai town, Rokiškis district

www.lgt.lt

55.942256, 25.79328

Rokiškis - 18 km

It is believed that sitting on the stone can bring happiness and success.

54Obeliai Stone

Boulder

In the park in the centre of Obeliai, you can find an interesting object - the Obeliai Stone. The Obeliai stone lies where it was found, only now slightly raised. Archaeologists have not provided concrete, tangible facts, but there are opinions that there used to be a pagan sanctuary in this place.

Obeliai town, Rokiškis district

www.rokiskiotic.lt

55.943072, 25.792667

Rokiškis - 18 km



55 Lukštai Spring

Spring

The water flows out in a picturesque hollow in at least three different locations. At the source, the confluence forms a rather fast-flowing stream, and a few tens of metres away, it flows into the Šaltuoja stream, which is an inflow of the River Vyžuona. The water is clear, colourless, and odourless, its temperature is quite constant at 7.7 °C. The water is fresh, contains few minerals (488 mg/l), has low iron concentration (0.05 mg/l), and is hard. Composition - calcium, magnesium bicarbonate.



Lukštai village, Juodupė eldership, Rokiškis district

www.lgt.lt

6 56.019023, 25.726875

Rokiškis - 14 km



56 Goat's Stone

Boulder

Goat's Stone is located in Ignotiškis forest. Its dimensions are $5.1 \, \text{m} \times 3 \, \text{m} \times 3.3 \, \text{m}$, composition - plagiogranite with biotite. The sides of the boulder have markings that may have come from the horns of deer, elk, or roe deer.

The legend says that a wild goat once jumped on this boulder to defend itself from wolves. It is said that a white goat can be seen at night near the Goat's Stone.



Ragučiai village, Juodupė eldership, Rokiškis district

www.lgt.lt

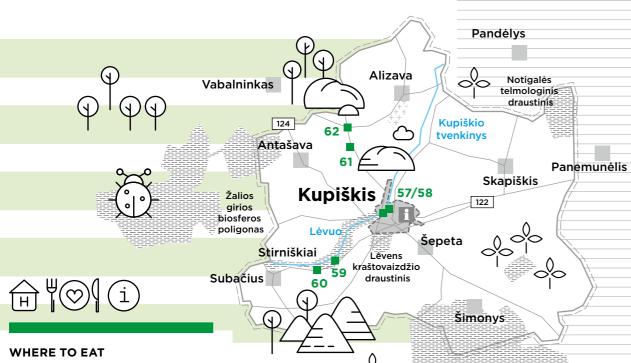
56.014049, 25.681654

Rokiškis - 10 km



LITHUANIA PANEVĖŽYS COUNTY

KUPIŠKIS AND SURROUNDINGS



Troškūnėliai

OR STAY OVERNIGHT?
LOOK IN THE NEAREST TOURIST
INFORMATION CENTRE, POINT
WWW.INFOKUPISKIS.LT

Šimonių girios biosferos poligonas

KUPIŠKIS

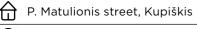


Mother-in-Law's Tongue Dendropark

Akmenytė Spring

Spring

The spring flows on the left bank of the River Lėvuo and it is a hydrogeological nature monument of local significance, reflecting the natural diversity of the Kupiškis region. From 1951-1952, the depths of the city of Kupiškis were explored with deep boreholes that reached the rocks of the Upper Devonian Šventoji suite. This spring flows from the mouth of the 88.31 m deep borehole drilled at that time. Before that, the spring gushed out of a pit about 3 m long and 1.5 m wide, on the bank of the River Lėvuo, and flowed into the river in a stream just a few metres long. Water composition: calcium, magnesium, sodium bicarbonate, sulphate. The name Akmenytė (stone in Lithuanian) comes from the abundance of stones in this area.





55.844555, 24.967426

🕀 Biržai - 51 km



Akmenytė Spring

58 Kupiškis Dolomite Quarry Stone

Boulder

The largest boulder in the vicinity of Kupiškis. It was most likely taken from the nearby dolomite quarry. The composition of the stone is grey granite gneiss (worn). The height of the stone is 2.20 m, the length is 4.00 m, the width is 3.30 m, and the perimeter is 12.40 m.

Palėvenės street, Kupiškis

www.lgt.lt

55.841808, 24.965493

🕀 Biržai - 52 km



Kupiškis Dolomite Quarry Stone



Lėvuo River



Paulianka

Wall in a quarry

Paulianka is accumulations of rounded boulders of sedimentary, igneous, and metamorphic rocks. It is located in protected area-Lėvuo Landscape Reserve and is unique because of breakthrough morainic deposits in the stones.



Palèvenės town, Kuniškis district Kupiškis district

www.lgt.lt

(55.792202, 24.866407

€ Kupiškis - 13 km

60 Stirniškiai Outcrop

Outcrop

The dolomite outcrop is on the left side of the Lėvuo River valley, where the Suosa flows, in the village of Stirniškiai, Noriūnai eldership. Its height is 3 m, and its length is 40 m. In it, the layers of Suosa dolomites from the upper part of the Devonian part of the Franconian are exposed. Cavernous layered dolomite can be seen in it.

The Stirniškiai Outcrop together with the nearby building with dolomite columns has been declared a geological monument in 1964.

The aforementioned columns of the building made of dolomite are not only a geological, but also a cultural-ethnographic-historical monument. The dolomites of the Suosa layers in the Buivenai and Stirniškiai quarries have been quarried for construction since long ago. In 1988 in the vicinity of Noriūnai, the lower reaches of the Suosa stream between the villages of Pasuosiai, Karaliūniai, Radžiūniai, and Stirniškiai have been declared a geological reserve. Its area is 21,6 hectares.

The purpose of the reserve is to protect the outcrops and outcrops of the Late Devonian Suosa strata in the bed of the Suosa stream. These Devonian layers began to be explored by geologists as early as the 19th century.



Stirniškiai village, Subačius eldership, Kupiškis district

www.infokupiskis.lt

55.782953, 24.834447

€ Kupiškis - 16 km





61 The Stone **Devil's Foot**

Boulder

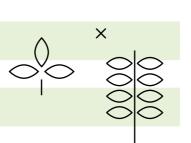
The stone is famous for its size and for the fact that the impression visible on its top resembles a devil's hoof. Part of the stone is embedded in the ground. The height of the stone is 1.55 m, the length is 3.35 m, the width is 2.6 m, and the perimeter is 9.9 m. The size of the recess "Devil's Foot" is 10x6 cm, and the depth is 6 cm.

Gyvakarai village, Alizava eldership, Kupiškis district

www.lgt.lt

55.915311, 24.895755

€ Kupiškis - 11 km



X

62 Salamiestis Stone

Boulder

Boulder height - 2.45 m, length - 4.45 m, width - 3.45 m, perimeter - 12.50 m. The massive boulder stands at the intersection of roads "Vabalninkas-Salamiestis-Kupiškis" and "Salamiestis-Alizava-Kupreliškis-Galintiškis".



Nodiejiškiai village, Alizava eldership, Kupiškis district

www.saugoma.lt

55.933513, 24.894291





-- WHAT IS A BOULDER (GLACIAL ERRATIC)?

A BOULDER (GLACIAL **ERRATIC) IS GLACIALLY** DEPOSITED ROCK DIFFERING FROM THE TYPE OF ROCK NATIVE TO THE AREA IN WHICH IT RESTS. **ERRATICS CAN RANGE IN** SIZE FROM PEBBLES TO LARGE BOULDERS.



LITHUANIA PANEVĖŽYS COUNTY

BIRŽAI AND

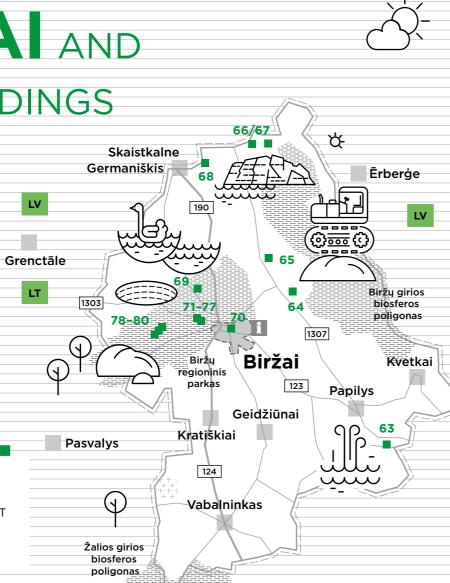






WHERE TO EAT OR STAY OVERNIGHT?

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.VISITBIRZAI.LT





Širvėna Lake

63Kučgalys Spring

Spring

The spring has a rather interesting history. It is said that in 1946 Russia faced an oil shortage which made Russia start looking for it in Lithuania. Many boreholes were drilled, but no oil was found, but in Kučgalis, the place where holes were bored, water started flowing, creating a spring. The spring water flows into the River Apaščia. In 2015, the area around the spring was renovated and tidied up - a fireplace was installed, a birch grove was arranged, a new gazebo was built, and the roof for the spring was renewed.



Kučgalys village,
Papilys eldership,
Biržai district

www.visitbirzai.lt

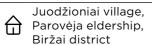
9 56.073751, 25.07252

🕀 Biržai - 26 km

64 Juodžionys Field of Erratic Boulders

Boulder field

The boulder field is naturally formed and consists of many crystalline rocks, some overgrown with moss. The rocks were pushed by a glacier from Fennoscandia during the Pleistocene period. The boulders can be found scattered in a 5 hectares field.



www.visitbirzai.lt

9 56.244642, 24.88089

🕀 Biržai – 11 km



65 Medeikiai Stone

Boulder

An unbroken large boulder that was accidentally left on site, originally used as a pedestal for an exhibit of old equipment – a crawler tractor. Its length is 3.5 m, width is 2.7 m, height is 0.95 m, and horizontal circumference is 11.25 m.

Composition – coarse-grained, porphyritic granite.



Medeikiai village, Parovėja eldership, Biržai district

www.lgt.lt

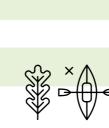
) 56.283029, 24.833847

🕀 Biržai - 13 km

66 Outcrop of Tabokinė

Outcrop

In the Outcrop of Tabokinė, the vertical walls of the Devonian rocks are incompletely arranged on two levels. The upper cliff is impressive in that its wall usually reaches a height of 3 to 4 m and consists of rather large pieces of cracked dolomite which have been penetrated by the strong roots of birch and other trees growing on the cliff. The length of the outcrop along the River Nemunėlis reaches 130 m, and its height is 11.2 m.



Tabokinė village, Nemunėlio Radviliškis eldership, Biržai district

www.visitbirzai.lt

56.410337, 24.832798

🕀 Biržai - 31 km





67Muoriškiai Outcrop

Outcrop

It is a natural outcrop that came into being as a result of longterm deep and lateral erosion of the River Nemunėlis. It has a steep wall with sharp protrusions of hard rocks, lots of niches, caverns, deep cracks, micro creases, and other changes that occurred in the rocks. It is a very remarkable, beautiful range of precipitous slopes in the valley of the River Nemunėlis. The outcrop forms part of the State Geological Reserve of the Rivers Nemunėlis and Apaščia which was established in 1960. Muoriškiai Outcrop outlooks the northern outskirts of the undulated moraine plain of the Rivers Mūša-Nemunėlis with the valley of the River Nemunėlis that is etched into the northern outskirts. The absolute altitude of the water level of the River Nemunėlis at the foot of the outcrop is 35.5 m. The absolute altitude of the terrain varies from 33 m (the water level of the River Nemunėlis in Muoriškiai village) to 61 m (in Benupė village) in an area of





approximately 2 kilometres radius, and the highest spot in Pučiakalnė is about 75 m. The most impressive upright segment along the River Nemunėlis is 80 m long. However, at least 30 metres from both ends should be included in the length of this outcrop. Thus, the total length of the entire stretch is 140 m. The outcrop is 7.4 m in height, the valley slope is 9.6 m in height, and its foot is 0.8-1 m above the water surface of the River Nemunėlis and in some places is up to 6 m above the river.









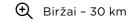


















68Velniapilis Rock

Outcrop

Velniapilis Rock is a dolomite and gypsum outcrop that is situated on the left bank of the River Nemunėlis. This geological natural asset situated in Biržai district, in Nemunėlio Radviliškis eldership, consists of rocks from the Devonian period of marine and lagoon origin. The outcrop, which is situated about 6 km away from the River Nemunėlis rises to a height of up to 5 m and is about 8 m in width. A crack with a width of 0.5 m that opens, rises, and leads to a cave with a depth of 4.3 m plays a unique role. Here, the intertwined layers of dolomite, gypsum, and other geological structures are perfectly visible. An old karst sinkhole with a diameter of 10-12 m that descends to a depth of up to 2.5 m is situated at the top of the slope.

There are various legends about this natural geological asset. It is said that the devil lived here since ancient times. The outcrop also served as an asylum for the local men of the village who were affected by various woes and were desperately in need of comfort.





Padvariečiai village, Nemunėlio Radviliškis eldership, Biržai district

www.visitbirzai.lt

56.38613, 24.702729

🕀 Biržai – 27 km





- - HOW ARE DRY AND WET SINKHOLES FORMED? WHAT IS THE DIFFERENCE BETWEEN THEM?

A SINKHOLE IS A CAVITY THAT FORMS WHEN UNDERGROUND WATER DISSOLVES UNDERGROUND LAYERS OF SOLUBLE ROCKS, UNDER THE ACTION OF GROUNDWATER, THE **UPPER SOIL BECOMES** HEAVY, COLLAPSES AND FILLS THE CAVITY WITH **ROCKS AND SOIL FROM** THE TOP. SINKHOLES CAN BE DRY OR WET DEPENDING ON THE SEASON AND MULTIPLE CLIMATIC **FACTORS - CHANGES IN** POSITIVE AND NEGATIVE AIR TEMPERATURES. THE NATURE OF PRECIPITATION, ITS AMOUNT, AND THE FROST DEPTH.

SINKHOLES THAT FORM
BELOW THE GROUNDWATER
LEVEL FILL WITH WATER AND
FORM SMALL LAKES CALLED
LAKELETS.

69Kirkilai Karst Lakelets

Karst lake

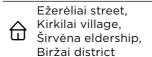
The karst lakelets of Kirkilai Lake have formed during karst processes and are the youngest lakelets of this type in Europe. Most of them are located in the Kirkilai and Drąseikiai villages and their surroundings. The area of these water bodies is from 30 to 100 cubic m. The average depth of the lakelets is from 0.8 to 4.5 m. The karst lakelets do not always sit in one sinkhole, but rather often integrate several sinkholes or even form groups. One sinkhole can repeatedly collapse several times, and the collapse of the partitions of the adjacent sinkholes leads to the formation of karst lakes with an intricate contour.

Kirkilai Lake (also called Ilgasis or Upėgalis), which is the most outstanding of all lakes in the entire karst lake-land area, is situated on the northwest outskirts of Kirkilai village. The lake is formed of at least 30 water-filled and united sinkholes of different ages and sizes (there are also plenty of individual



waterlogged, boggy, and dry sinkholes in the access area of the lake). This territory with an approximate area of 3.9 to 6 hectares is considered to be a laky labyrinth with a very winding coastline with horns. The length of the coastline is more than 2.5 km. Various biological processes take place in the karst lakelets. Different sulphur bacteria colonies that are visible to the naked eye are only found in these lakelets. Various species of aquatic plants, including stonewort, Ceratophyllum demersum, commonly known as hornwort, lemna, and bulrush also grow in the lakelets. The coastal area of the older karst lakelets is overgrown with trees. During the summer, when the water level drops, communities of bentgrass form on their edges. During the spring melt and after a pouring rain the water level rises significantly and the water covers the peninsula.













Ceratophyllum demersum

This causes more islands to form. The maximum length of this lake with a very complicated shape is about 600 m, the width - is 300 m, and its maximum depth is 6-7 m. The land reclamation ditch that was dug in 1926 from the southernmost branch of the Kirkilai Lake (that influenced the formation of new sinkholes along the route of this canal) connects the lake with Užubaliai peat-bog



that is situated on the southwest side three kilometres away from the lake. The reclaimed stream Šilinėlis outflows the Kirkilai Lake at its north end. At the distance of 1 kilometre the stream flows through the lakelet Jonava (Šilinis) with an area of 3,5 hectares and then at the distance of 1.2 km it reaches the River Apaščia. The surplus of water outflows the Kirkilai Lake through the stream Šilinėlis, and when the water level in the River Apaščia is higher, the flood water rushes upstream by the stream Šilinėlis and, through



WHAT WILL HAPPEN IF ONE THROWS A PIECE OF DOLOMITE INTO THE KIRKILAI KARST LAKELETS AT EXACTLY MIDNIGHT ON DECEMBER 31ST?

ANSWER -IT WILL GET WET:) the same Lake Jonava (Šilinis), reaches the Kirkilai Lake. This raises its water level which usually upholds at an absolute altitude of 46.7 m (the water level fluctuation amplitude is 2.4 m).

Kirkilai Lake and its surrounding area with the rural homesteads are considered to be attractive and memorable by every visitor.

The observation tower of Biržai Regional Park was built in 2015.

The tower overlooks a unique landscape of Kirkilai karst lakelets. The observation tower is almost 32 metres high, and its observation deck is 30 metres high. This deck overlooks not only the karst lakelets but also Kirkilai village and the nearby locations.



70Biržai Regional Park Visitor Centre

Visitor centre, exposition

The exposition of the visitor centre introduces visitors to the unique values of Biržai Regional Park - sinkholes, rocks, and geological processes. Visitors can interact with interactive exhibits which reveal the process of karsts, rocks, and more.

Biržai Regional Park Visitor Centre houses the exposition intended to introduce the exceptional values of this protected area. The exposition is mainly focused on the topic "The region of the collapsing ground" because Biržai region is known for sinkholes, land subsidence, and interesting geological processes.

Biržai is a unique region with a land surface that goes through active formation which changes the landscape. The ground sinking occurs after gypsum deposits are washed out by groundwater followed by the formation of mysterious sinkholes: some sinkholes are dry (e.g., Karvės ola (Cow's Cave), a famous object of natural heritage), while others have turned into small lakes full of

sulphur bacteria that are visible to the naked eye (e.g., Kirkilai lakelets).

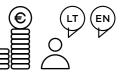
The exposition in Biržai Regional

Park Visitor Centre, dedicated to this region, is very vivid and intriguing. The cold glass reception of the centre is reminiscent of a sinkhole and therefore creates an impression of being inside a sinkhole. The exposition offers interactive stands, and two games - "Process of sinkhole development" and "Ecosystem of the karst lakelets". The stand that operates as a sandglass imitates a collapsing sinkhole, while other stands are used to show sinkholes before and after the collapse. All these things help the visitors understand the natural phenomena that are common in Biržai region. The second exposition hall offers an exposition of minerals and rocks that introduces the geological riches of the region. Here the visitors will find another interesting cairn interactive exposition stand. Thanks to this stand the visitors can experience

the depth of the borehole and get

to know the changes in geological

lavers.



Rotušė street 10, Biržai

© 56.202479, 24.755325

Pasvalys - 29 km

www.saugoma.lt

Also, the outdoor exposition has been set up to acquaint visitors with the geological curiosities in Biržai region. The outdoor exposition consists of an exposition of boulders and rocks, a sinkhole layout, a layout of sinkhole formation, a model of underground caves, and a geological time scale layout. In the exposition, visitors can see the boulders and rocks of various compositions of Biržai region and get acquainted with the process of sinkhole formation using interactive models. The model of the underground caves makes visitors feel as if they are in the dungeons of the Cow's Cave, and the model of the geological time scale introduces visitors to the process of the earth's evolution.

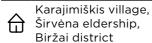
71 Geologists' Hole

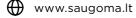
Sinkhole

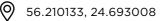
Geologists' Hole is located in the Karajimiškis Landscape Reserve. The diameter of the sinkhole is about 12 x 9.5 m, the depth is 5 m. The sinkhole opened on the 22nd of April 2003, a few days before Lithuanian Geologists' Day, therefore, it was named the Geologists' Hole. At the time, the sinkhole was 4.8 x 4.2 m in diameter and 8.11 m deep.

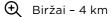


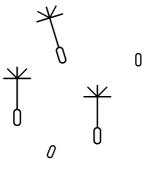
On the 15th of October 2004 the dimensions determined were as follows: diameter 5.35 x 5.05 m, depth 9.25 m. At the end of 2004, a new karst sinkhole was observed, opening 1 m from the north-western edge of the Geologists' Hole. The moraine loam of the Quaternary sediments was exposed in the upper part of the wall, followed by rocks of the Upper Devonian Tatula Suite. The sinkholes merged in 2005 and now form one sinkhole.















72Sinkhole "Badger's Cave" Cognitive Geological Trail

Sinkhole

In the spring of 2011, in the sinkhole area of Karajimiškis Landscape Reserve of Biržai Regional Park where karst phenomena actively form the land surface, in Mantagailiškis "Gojelis" (Grove) forest, at the foot of the wall of the north slope of a karst old sinkhole, between blocks of rock, speleologists found a burrow leading to a cave. Shortly after, the sinkhole, in which this cave was detected and signs that testify to the presence of a badger were found, was named Barsuko ola (Badger's Cave). In the autumn of 2012, a cognitive-geological path with a compacted soil pavement was built in the territory with an area of approximately 2,5 hectares. The total length of the path is about 700 m. A sinkhole Geologų duobė (Geologist's Hole) marks the beginning of the path. The path further leads through sinkhole Lapés ola (Fox's Cave), and after reaching the southwest outskirts of Gojelis forest the path brings the visitors to a sinkhole area



that is situated here, where the sinkhole Badger's Cave and other even larger and deeper sinkholes are located. The path continues to run to the north and leads along the sinkholes that are situated on the outskirts of the forest, then goes downhill through a karst remnant, arches one of the largest sinkholes, and on the way back descends to another sinkhole, from which, after ascending between the smaller ones, the visitors once again return to the outskirts of Gojelis. The visitors can overlook 13 sinkholes from the path, of which three are more complex in shape. Two or three sinkholes that opened earlier connect to the pit of the preceding sinkholes.



Karajimiškis village, Širvėna eldership, Biržai district

www.saugoma.lt

9 56.210133, 24.693008

🕀 Biržai – 4 km

73 Fox's Cave

Sinkhole

The Fox's Cave is located in the Karajimiškis Landscape Reserve. The diameter of the cave at the top is an almost perfectly round circle (16x17 m). The sinkhole is about 7.4 m deep, and it stands out from the other sinkhole because of the blocks of dolomite with gypsum interlayers that are lying chaotically inside it. Fox's Cave is always dry - it does not get waterlogged in spring when the snow that has accumulated in the sinkhole melts thanks to openings on the bottom of this sinkhole that are still unclogged. These openings are related to the cavities that occurred during the karst processes in the soluble rocks that have sunk underground.









🕀 Biržai – 4 km





74Maple Hole

Sinkhole

The Maple hole is located in the Karajimiškis Landscape Reserve. It got its name because of the maples growing on the slopes and in the environment. The sinkhole is thought to have formed more than 100 years ago (according to the age of the oldest trees growing in it). The Maple hole was formed by the surface soil penetrating deeper into the void formed in the underground, which was replaced by gypsum belonging to the layers of the late Devonian Tatula Nemunėlis and possibly Pasvalys.



The contour of the pit is oval, its diameter is 23×27 m, and its depth is 6.7 m. The sinkhole is deepest at the eastern slope, the lower and middle parts of which reveal Devonian gypsum rocks, finely overlapping gypsum, and dolomite.



Karajimiškis village, Širvėna eldership, Biržai district

56.207509, 24.690701

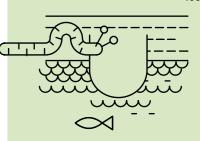


www.saugoma.lt



🕀 Biržai – 4 km





- -- WHERE SINKHOLES
 OCCUR? THEY ARE
 FORMED IN PLACES WHERE
 UNDERGROUND VOIDS
 ARE CREATED BY RINSING
 GROUNDWATER.
- --HOW SINKHOLES AFFECT
 THE ENVIRONMENT? MOST
 OF THE IMPACTS ARE LOCAL,
 BUT SINKHOLES CAN HAVE
 FAR-REACHING EFFECTS
 ON THE GROUNDWATER
 RESOURCES IN THE AREA,
 WHICH CAN ALSO AFFECT
 HYDROLOGICAL SYSTEMS,
 LAKES AND SPRINGS,
 CHANGING THE CHEMICAL
 COMPOSITION OF THE
 WATER AND THE RATE OF
 REGENERATION OR RUNOFF.

WORTH KNOWING:

SINKHOLES CAN
CONTRIBUTE TO
THE FORMATION OF
UNDERGROUND VOIDS
AND ARE ALMOST
UNPREDICTABLE.

75 Cow's Cave

Sinkhole

Cow's Cave is arguably the bestknown and most researched geological object with national significance in the northern part of Lithuania. The sinkhole is unique with its well-like form reaching a depth of 12.6 m, its composition of late Devonian dolomite, gypsum rock outcrops on the sinkhole walls, and a fivecave system underneath. Cow's Cave is a well-type funnelled karst sinkhole that formerly was almost circular. It was about 12 m in diameter at the top north-south direction, and about 10 m in diameter in the eastwest direction. Today an adjacent smaller sinkhole in the northeast part has mingled with Cow's Cave. The total length of the long axis is 22.2 m. The western great part is 15.3 m in diameter, its depth is over 12.5 m, the eastern small part is 9.4 m in diameter, and its depth is about 5.3 m. An underground cavity that formed due to dissolved gypsum opens up at the bottom of the sinkhole, from the depth of 9.5 m (it is 3.1 m in height and of similar width).



Several caves also extend to the sides of the cavity. The volume of the underground cavity with caves is 28 cubic m, the floor area is 42 sq. m, and its total length is 46 m (one cave is 10 m long). There are five caves in total: Šlapioji ola (Wet Cave), Siauroji



Karajimiškis village, Širvėna eldership, Biržai district

www.saugoma.lt

6 56.20672, 24.694397

🕀 Biržai – 5 km

landa (Narrow Burrow), Šikšnosparnių landa (Bat Burrow) (detected by bats), Rupūžės ola (Toe Cave) with an underground "lakelet" (1.5 m in depth) and Blizganti ola (Lustrous Cave).





Cow's Cave

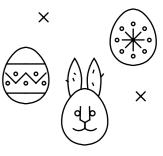
Legend says that a cow once fell in with only the end of its chain visible where there is now a sinkhole. This is how the sinkhole received its name.



76Easter Hole

Sinkhole

Easter Hole is located in the Karajimiškis Landscape Reserve and it opened on the 18th of April 1981. Its name was chosen because it collapsed during Easter. Dimensions of the sinkhole: diameter 19.9 x 19.5 m, depth 6 m. Easter Hole is dry and overgrown with trees. The slopes of the Easter Hole are Quaternary sediments. It is a natural karst sinkhole, the slopes of which are already fully formed and stable.



Karajimiškis village, Širvėna eldership, Biržai district

www.saugoma.lt

() 56.206579, 24.697370

🕀 Biržai – 4 km

Easter Hole



77 Eve's Hole

Sinkhole

Eve's Hole is located in the Karajimiškis Landscape Reserve. It received its name thanks to the bird cherry shrubs called ievas (Eve in Lithuanian) that grow on its slope. The diameter of the sinkhole is 13 x 14 m, and the depth is 5.8 m. On the northern slope of the sinkhole, you can see an outcrop up to 3.2 m high, which is layered with Devonian rocks, gypsum, dolomite and dolomite powder inclusions.



Karajimiškis village, Širvėna eldership, Biržai district

www.saugoma.lt

6 56.204947, 24.696386

🕀 Biržai - 5 km





78Smardone Spring Spring

Smardone Spring is a karst spring considered a hydrogeological

nature monument. Once the spring had a high flow rate of 540 l/s, but after the installation of drainage systems in the region

the rate reduced to 122 l/s. This spring of karst origin which was declared a geological monument in 1985, is situated in Biržai region, in Likėnai village. It is the birthplace of the Smardonė stream that flows into the River Tatula. The pit of the spring consists of a sinkhole that is reminiscent of an oval funnel with a very sloping bottom. The cross diameters of the sinkhole are 15 and 17 metres. Loamy banks with a height of up to 1.5 m that are covered with green turf rise above the water level of the spring.

There are two stream pools with lots of whirlpools (especially during the spring melt) in the pit of this spring, and with sludge deposits and rocks (boulders) on its bottom. These streams penetrate 1.5-3 m deep into the ground.



Likėnai village, Pabiržė eldership, Biržai district

www.saugoma.lt

9 56.200105, 24.623613

🕀 Biržai - 10 km





The water flows to Smardonė spring from the karst sedimentary rock layers (gypsum, dolomite, etc.). The water is slightly bitter and has a slight odour of sulphur hydrogen gas that is reminiscent of rotten eggs. This is where Smardonė spring draws its name from (in Lithuanian "smirda" means "it stinks"). Theodor von Grotthuss, the chemist who specialised in electrochemistry, was the first to perform analyses of the composition of the spring water and to announce their results in 1816. The spring water was formerly used for treatment, but it is no longer used for this purpose.



Salomėja Spring

Spring

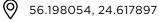
Salomėja Spring is a karst spring on the right slope of the Smardonė stream's canalised section. The width of the spring pit is 2-3 m, the depth is 0.5-0.8 m. The water is low in mineralisation, it contains calcium sulphate, and bicarbonate, it is slightly alkaline, cold (the temperature is about 7.4 °C), clear, and has a bitter taste. It does not freeze in winter. The spring was founded around 1995, and in 2005 named in memory of the geologist Salomėja Bucevičiūtė, who explored the depths of this region.





Likėnai village, Pabiržė eldership, Biržai district





🕀 Biržai - 10 km



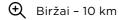


Kiršoniai village, Pabiržė eldership, Biržai district

www.saugoma.lt



56.194247. 24.609678





80 Kiršoniai Stone

Boulder

In the village of Kiršoniai, about 1 km southwest of Likėnai Park. on the site of a former gravel quarry, there is a large boulder brought by the last glacier - the Kiršoniai Stone. Its length is 5.05 m, its width is 3.44 m, its height is 1.9 m, and its horizontal circumference is 12.98 m. Its composition is pink granite and it is one of the largest boulders in the Biržai region.

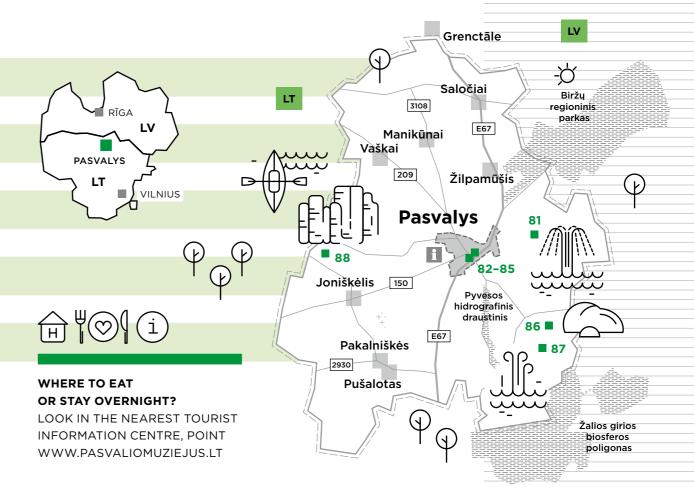
Kiršoniai Stone



LITHUANIA PANEVĖŽYS COUNTY

PASVALYS

AND SURROUNDINGS





Collection of bowl stones and millstones

Krinčinas Spring

Spring

The treasure of the town of Krinčinas in the Pasvalys district is a spring saturated with hydrogen sulphide and various minerals that have been gushing from the depths of the earth since ancient times. The spring's water has a bitter taste and a smell of hydrogen sulphide. Locals say that the water of the spring has healing properties.

Krinčinas town, Krinčinas eldership, Pasvalys district

www.pasvaliomuziejus.lt



Pasvalys - 10 km

Collection of bowl stones and millstones

Exposition

The Pasvalys Region Museum has a collection of of an ethnographer Antanas Stapulionis of bowlshaped stones and millstones under the open sky, which contains about 320 exhibits: 214 millstones, 64 bowl-shaped stones, 7 "footstool" stones, 2 stones-landmarks, and an exhibition of mill gears. It took nearly three decades to collect and describe all the exhibits.

Lėvuo street 2, Pasvalys

www.pasvaliomuziejus.lt

56.065253, 24.406022 🕀 Biržai - 29 km

The largest in the set is a more than 1-metre wide bowl-shaped stone, and the smallest has a diameter of only 20 cm. The exhibits began to be collected in 1979 and now it is one of the most visited objects in Pasvalys.

Krinčinas Spring



83 **Greenish Spring**

Spring

The Greenish Spring, located in Pasvalys, on the left bank of the River Lėvuo, is Lithuania's deepest cave with a depth of 20 m. The spring, which gushed from a sinkhole in 1960, flows into the River Levuo. The groundwater erupting from the bottom of the sinkhole snapped through a floodplain several metres along the riverbed. The bottom of the spring is covered with light



grey, almost greenish sediments, which give the spring water its greenish tint. In its sinkholes, we can see some pieces of gypsum and dolomite. The source water is clear and cold with an odour of hydrogen sulphide.

It is the largest water source in Pasvalys district and the deepest cave in Lithuania.

The Greenish Spring is included in the Lithuanian Book of Records "Factum". In 2006, underwater research began, and in 1985, the Greenish Spring was declared a natural monument. The first well of this underwater cave-spring is about 5 m in diameter and 21 m deep, ending in a gate of stones and rock debris. Further, the cave branches into two chambers: "Sunny" and "Aenigma". The Chamber of Aenigma leads in the south-southeast direction, sloping, its width varies from five to twelve metres, and it slopes down from seven to sixteen metres deep. The ceiling vault is uneven and stepped, its height goes up to 5 m. The floor of the chamber is covered with rock fragments and blocks falling from the ceiling. The Sunny Chamber continues in the north-northwest direction, its structure is very similar to The Chamber of Aenigma, but a little narrower: the width is from five to ten metres, it slopes down to fifteen metres, and at this depth. the ceiling and floor seem to come together. There are no clear boundaries, where the ceiling



Kalnas street, Pasvalys

www.saugoma.lt

(9 56.06455, 24.40086

🕀 Biržai - 29 km

and floor of the chamber meet, and the passages narrow to such an extent that there remains a gap, closed by debris from the ceiling. At the end of the chamber, there is a narrow vertical passage leading to The Lower Chamber. The flow of water at the bottom of the spring and in the chambers is practically unnoticeable. Visibility quickly disappears after touching the walls, the water becomes cloudy, and natural light on a sunny day is absent or not felt at all. The biggest difficulties for divers in the Greenish Spring can arise from the highly turbid water. The vault consists of layered gypsum or limestone rock, which is quite unstable and when swimming in horizontal cavities, bubbles of exhaled air drop rock fragments from above, very similar to falling snow. Sometimes larger stones also break off. The very narrow passageways in the chambers are also problematic.

84Pasvalys Region Museum

Museum

The museum's geological exposition is a rich collection of samples of minerals, rocks, and plant and animal fossils from Pasvalys, Lithuania, and other parts of the world. Visitors are introduced to the geological structure of country, and the oldest exhibits, which are like a link between the ancient periods of the Earth's history and the present. The museum was opened in 1998 based on ethnographic and archaeological collections accumulated by local researcher Antanas Stapulionis (1930-2011). There are expositions of geology, archaeology, history, and ethnography, among others.







www.pasvaliomuziejus.lt

6 56.060227, 24.398898

🕀 Biržai - 29 km

85Park of Sinkholes

Sinkhole

This unique park of sinkholes was started in 2004 in the farmers' lands of Avižoniai and covers an area of nearly 8 hectares with dozens of sinkholes of various sizes and ages. The park is equipped with bicycle and pedestrian paths, skateboard platforms, playgrounds, sports, training grounds, swings for little visitors, lamps, plenty of wooden sculptures, and benches.

Panevėžys street, Pasvalys

www.pasvaliomuziejus.lt

56.055673, 24.397229

Biržai - 29 km

One empty sinkhole was equipped as an amphitheatre with six hundred seats. It hosts various Pasvalys cultural and sports events.

Park of Sinkholes



86Stone of Petraičiai

Boulder

It is one of the largest boulders in this plain region. Its dimensions are 5.15x4.80 m, height - is about 3.50 m. It is brown with a grey tint and it splits into slabs.

The large boulder opens almost to its full height on the left side of the road, surrounded by a forest. The stone was lying in the nearby Šimkūnai homestead next to the house. It was brought here by glaciers. Only a small part of the giant rock was visible above the ground. In 1985, during land reclamation, the boulder was dug up and dragged closer to the road by powerful tractors. However, the stone started to jam in the lowest part, the ropes broke, so the boulder had to be left here, stuck about a metre in the ground.



Liukpetriai village, Daujėnai eldership, Pasvalys district

www.pasvaliomuziejus.lt

9 55.982666, 24.556897

Pasvalys - 16 km





The White Spring

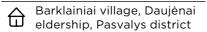
Spring

The spring is a state natural monument and is unique for its pungent odour and bitter taste. The pebbles at the bottom of the stream and the grass on the edges are so white that the spring was given the name "White Spring" or sometimes Orija spring.

The current spring spurts from the stream Orija, on its left bank, but previously the spring used to be located in another place and had a larger stream of water - a 30-40 cm fountain.







www.pasvaliomuziejus.lt



55.958949, 24.544269

Pasvalys - 16 km

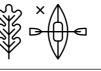
The spring erupted on the stream Orija bank and reached the height of one metre then it curved into the stream by a 3 m long and 0.4 m wide channel. The spring water is clear, colourless, and has a pungent odour of hydrogen sulphide. It is tasteless because there are a lot of sulphates (gypsum) and other chemical compounds. It comes out of the Tatula karst region formations of gypsum deposits, occurring in 10-15 m depth under the Quaternary period deposits. The spring water is very cold -8 degrees Celsius. Although there are more sulphate and water springs in Lithuania, this water is more saturated with chemicals: white sediment covers the entire bed. Animals do not drink this water.

88 The Outcrop of Skaliai Mountain

Outcrop

A dolomite outcrop on the right bank of the River Mūšais on a steep slope that descends into the river, located near the village of Stipinai and is also called Stipinai outcrop.

Length of the outcrop - 45 m, width - 6 m. area - 0.083 hectares. The aim is to preserve the sedimentary carbonate rocks of the Stipinai Formation of the Upper Devonian, formed 350 million years ago from carbonate sediments accumulated on the seabed, and the carbonate-clay layers of the Pamūšis Formation that sink below them. With a steep slope, the outcrop falls to the river, in the east, it gradually descends to the fluvial terrace. in the west - on a steep slope several hundred metres long and 7 m high, covered with grass and bushes. The hill is composed of the rocks of the Pamūšis and Stipinai regions from the Devonian Period. These rocks are rich in pyrite, limonite, and shells, and have some cavities. In the western cliff, the oldest rocks are visible clay and dolomite formations of



Stipinai village, Joniškėlis eldership, Pasvalys district



www.pasvaliomuziejus.lt



56.065902, 24.113519



Pasvalys - 25 km



the Pamūšis region. In the eastern part, one can see the dolomite formations of the Stipinai region and on the cliff top, there are some rocks from the Devonian Period with sediments up to 1 m thick from the Quaternary Period. Below this rock exposure, the water is gushing and wetting the grass. Dolomite formed approximately 350 million years ago in the seabed of dissolved carbonate sediments. The seas were swallowed and the seabed appeared. The rocks oxidized and changed their colour - the grey dolomite became yellowish-grey.

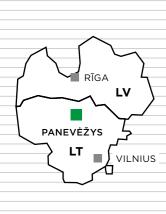




LITHUANIA PANEVĖŽYS COUNTY

PANEVĖŽYS

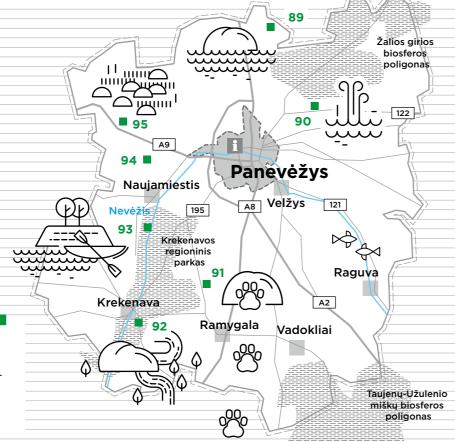
AND SURROUNDINGS

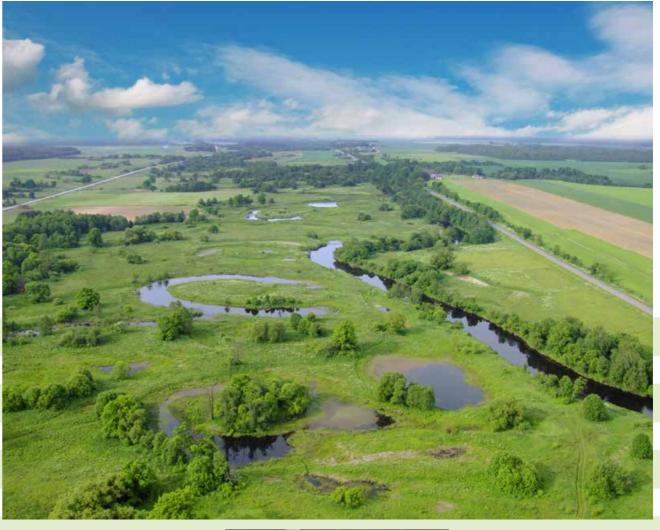




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Krekenava Regional Park



Banioniai Stone

Boulder

The length of the stone is 6.5-7 m, the width is 5.5-6 m, and it is higher than 3 m. The exact height has not been determined because the stone has not been completely excavated. It sinks in a pit where water collects, covering half of the stone.

Around the stone stretches the landscape of an undulating sandy plain (Mūša-Nemunėlis moraine plain). It is speculated that this stone could be one of the largest in Lithuania, even larger than the famous Puntukas.

The stone was found around 1977. An attempt was made to dig and pull out the stone in 1982, but failing to do so, it remained to lie where it lay. Water gathered in the dug pit, hiding part of this stone.





Kliuokmainiškis village, Pajstrys eldership, Panevėžys district

www.lgt.lt

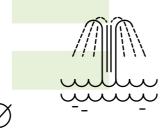
55.901211, 24.414109

nevėžys – 23 km

90 **Vilktupis Spring**

Spring

The spring bursts on the steep, forested bank of the Lėvuo. Groundwater discharge is directed through a horizontal pipe. Stones are placed where the current falls. Data: flow rate - 0.19 l/s. mineralisation - 235.92 mg/l, area - 0,002 ha ingredients - fresh magnesium hydrogen carbonate water with calcium. For the convenience of visitors, there are parking spaces, gazebos, and benches near the spring.



Paliūniškis village, Karsakiškis eldership, Panevėžys district



www.lgt.lt



55.800092, 24.505884



Panevėžys - 14 km

Banioniai Stone



Stone Devil's foot

Boulder

The Devil's Foot Stone (also called Devil's Stone, Stone with Devil's Heels) is a natural heritage object protected by the state.

The boulder is rounded in shape. further reminiscent of a coupe or cone. Its dimensions (above the ground) are a height of 1.8 m, a length of 3.82 m, a width of 2.55 m. and a maximum horizontal volume of 9.44 m. The rock forming the boulder is amphibole-biotitic gneiss (striped migmatite), grey and blackish-white (variegated), cataclased, fine-grained, and medium-grained.





Ėriškiai village, Upytė eldership, Panevėžys district





55.578275, 24.266482

Panevėžys - 23 km

Stone Devil's foot

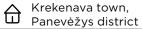


According to the legend, the devil guarded the hidden money of a lord by standing on a stone. That is why his traces remained.

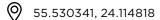


- - 127 -









Panevėžys - 30 km

92 Stone Rapolas

Boulder

On the bank of the River Linkava, there peacefully lies a huge boulder with a spectacular name -"Rapolas", which was made up of blastocataclase (cataclased granite gneiss). Although according to Lithuanian fairy tales, such stones were dropped at one or another place by the Devil, they were brought to Lithuania by a much more powerful force - the glacier. Due to its spectacular size: 14.54 m in length, 2.55 in height, 5.14 m in length, and 4.18 m in width, in 1964 it was declared a natural monument. It is believed that the unusual name was given to the stone because of the name of a local farmer who lived nearby.



Nevėžis Valley



Stone Rapolas

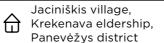
93 Murmuliai Outcrop

Outcrop

Murmuliai Outcrop on the left bank of the River Nevėžis is a picturesque outcrop formed by the last glaciation. The height of the outcrop is 9 m, and the length along the riverbed is 60 m. Brownish-red moraine loam left by the Baltic stage of the River Nemunas (last glaciation) glacier is exposed in the outcrop.

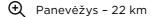














Murmuliai Outcrop







94 **Nauradai Stone** Boulder

Nauradai Stone is a massive boulder with height - 2.40 m, length - 7.10 m, width - 5.00 m, perimeter - 19.50 m. Stone structure: magmatized granite gneiss with pegmatite veins.





Nauradai village, Naujamiestis eldership, Panevėžys district

www.lgt.lt

55.736225, 24.134656

Panevėžys - 17 km

95 Perekšliai stretch

Boulder field

When describing the boulders, one should mention the characteristic witnesses of the Ice Age - the geotope Perekšliai rolls, located on the northwestern edge of the surroundings, north of the village of Perekšliai, in the Valiliškiai forest. It is a preserved fragment of a kind of natural boulder embankment formed in a glacier crevasse. The embankment is forced by boulders, consisting mainly of rocks of igneous origin.



Perekšliai village, Smilgiai eldership, Panevėžys district

www.lgt.lt

55.783574, 24.080012

Panevėžys - 22 km





LITHUANIA **ŠIAULIAI COUNTY**

PAKRUOJIS



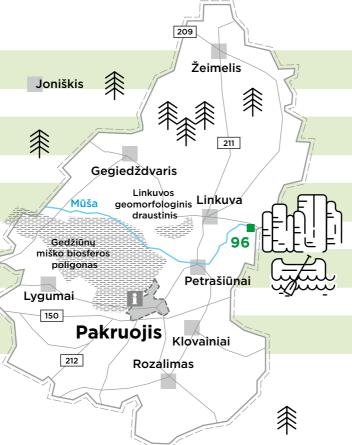
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WHERE TO EAT OR STAY OVERNIGHT?

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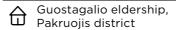
96Raudonpamūšis Outcrop

Outcrop

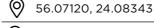
The outcrop opens to the left bank of the river bend. It is composed of dolomite, stretches 35 m on the steep bank of the River Mūša, its height is 4 m, and it covers an area of 0.04 acres. The structure of dolomite rock is revealed in the outcrop. Here, visitors can see not only the River Mūša but also admire the layers of dolomite.

















- 132 --

- - 133 -

LITHUANIA **ŠIAULIAI COUNTY**

RADVILIŠKIS

AND SURROUNDINGS





WHERE TO EAT OR STAY OVERNIGHT?

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.INFORADVILISKIS.LT





Arimaičiai Lake

97Kurkliai Stone

Boulder

A boulder of impressive dimensions, its' height - 1.70 m, length - 3.75 m, width - 2.90 m, perimeter - 10.75 m.



Kurkliai Stone



Kurkliai, Šeduvos eldership, Radviliškis district

www.inforadviliskis.lt

55.778261, 23.686609

🕀 Šiauliai - 40 km

98 Devils' Stone

Boulder

Object located in the forest between Baisogala and Valatkoniai.



Baisogalos eldership, Radviliškis district

www.inforadviliskis.lt

55.613080, 23.774422

Radviliškis - 35 km

Old people say that once the devil dragged a large stone on the ground to close the door of the church in Baisogala, but failed to carry out his evil intentions because the rooster crowed. A deep ditch survived to this day, the stone itself split in half from the badly attached chain, and the depressions on the surface of the boulder were pressed into the devil's legs.

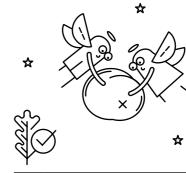
Devils' Stone



99 Angel's Stone

Boulder

The boulder is considered a mythological stone.
It is state-protected, large 2.3 m high, 5.25 m long boulder, standing in Radviliškis district Baisogala forest, 2 km southeast of Baisogalas railway station, 2 km southwest of Valatkonys.



Baisogala forest,
Baisogalos eldership,
Radviliškis district

www.visitsiauliai.lt

55.616917, 23.764333

🕀 Šiauliai - 50 km



Angel's Stone

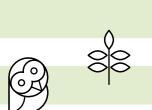


According to the tales of the people of the Radviliškis region, in ancient times a public road passed through this stone. Travelers in the dark of the night often did not notice it and were struck, so they cursed the giant stone that got in the way and prayed to God to take it somewhere further. The angels were tired of hearing the prayers and wicked speeches of these calamities so, one thunderous night they lifted the stone and threw it deep into the forest so it would not disturb anyone again. Since then, people have called the boulder Angel's Stone.

LITHUANIA **ŠIAULIAI COUNTY**

KELME AND

SURROUNDINGS

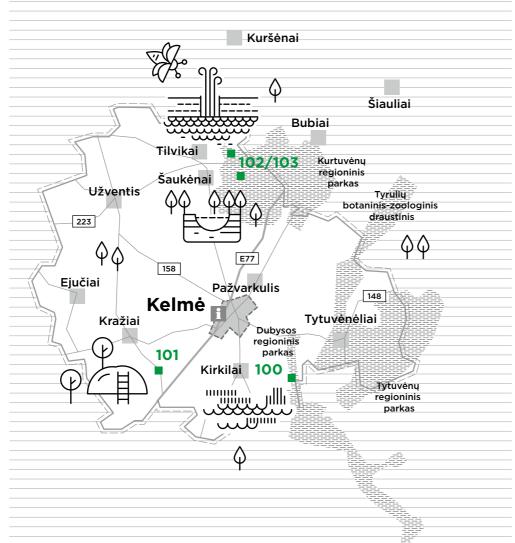






WHERE TO EAT **OR STAY OVERNIGHT?**

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.VISITSIAULIAI.LT



KELMĖ

VILNIUS

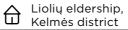
100 Skiručiai Spring

Spring

The spring erupts near the road Lyduvėnai-Maironiai, at the foot of the right slope of the Dubysa River Valley, in a natural meadow. The water lingers in the pit and collects in a small pond. The water breaking through to the surface of the earth is covered with lumps of rust and red pebbles. The object's territory is an irregular ovalshaped, smooth, marshy, springfed ravine.







www.lgt.lt



€ Kelmė - 20 km



101 **Kriaučius Stone**

Boulder

This massive boulder is the third largest in Lithuania. The locals knew of its existence since about 1930.





Vileikiai, Pakražančio eldership, Kelmė district

www.visitsiauliai.lt

55.545666, 22.761097

€ Kelmė - 20 km





102 **Pustlaukis sinkhole**

Sinkhole

The Pustlaukis Geomorphological Reserve in the western part of Kurtuvėnai Regional Park preserves unique relief forms. The most impressive of them is the Pustlaukis sinkhole - a deep drop-shaped hole, which slopes are 13 metres high. There is a bright terrace on the southern and eastern slopes of the hole, and a channel (narrowing) at the northern end. About 400 metres to the south, there is another slightly smaller sinkhole.



Vainagiai forest, Kurtuvėnai Regional Park, Pustlaukis geomorphological reserve, Šaukėnų eldership, Kelmė district





Kuršėnai - 30 km, Šiauliai - 30 km



Kurtuvėnai Regional Park



103 **Svilė Springs**

Spring

It is one of the most impressive and largest springs in Lithuania - a hydrographic natural monument. More than 100 springs bubble in the meadow. Svilė, a coldwater brook, collects their waters and carries them down to the Venta-Dubysa Canal. Its water contains highly rare species of algae and water insects surviving from the ice age. In June, the endangered Lithuanian orchids, Dactylorhiza Baltica, bloom on the costs. Svilė Springs have been declared a hydrogeological natural monument included in the list of Natura 2000 sites that are important for the conservation of European Union habitats.



DRINK SPRING WATER AND DESCRIBE ITS TASTE, GOING BEYOND SIMPLY TASTY OR TASTELESS, DID ANYONE KNOW THAT THERE ARE PROFESSIONAL WATER TASTERS?



Šaukėnų eldership, Kelmės district





55.840324, 22.942323



🕀 Šiauliai - 40 km

Dactylorhiza Baltica





LITHUANIA **ŠIAULIAI COUNTY**

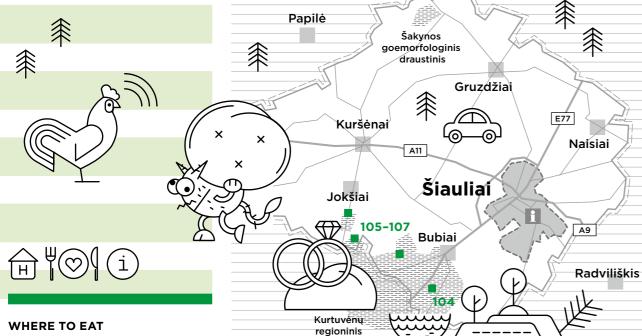
ŠIAULIAI

AND SURROUNDINGS



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WHERE TO EAT **OR STAY OVERNIGHT?**

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.SIAULIURAJONAS.LT WWW.VISITSIAULIAI.LT



Bubiai Mound

- 143 -

104Barsukynas Esker

Esker

Barsukynas Esker is 700 m long and up to 24 m high. Eskers are long and narrow hills formed in the cracks of a melting glacier. Legend says that these giant trails were poured through swamps. The 1st Pageluvis Mound is located at the highest point of Barsukynas Esker. On the eastern embankment of the mound, one can find the trunks of the dried Rebel pine where, in 1863, the rebels took an oath. While walking on the hills, visitors can enjoy being in nature and admire the natural landscape.



Barsukynas Lake



Kurtuvėnai Regional Park

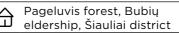


Barsukynas Esker



Pageluvis Lake path













105 Linartai Stone

Boulder

The boulder lies on a high hillside. It is 3.6 metres long, 2.8 metres wide and 1.7 metres high. Part of this huge boulder is under the ground. The structure of the stone is dominated by fine-grained granite.



Bubių eldership, Šiauliai district

www.krpd.lt

55.847778, 23.012722

🐧 Šiauliai - 40 km

106Martynas Stone

Boulder

In the past, the upper part of the boulder had a depression similar to a human foot.



Kuršėnų kaimiškoji eldership, Šiauliai district

www.krpd.lt

55.861500, 22.903667

€ Kuršėnai - 20 km

Linartai Stone





Martynas Stone

There are several stories about the origin of the name Martynas Stone. According to one of them, the groom Martynas, who escaped from the manor, was killed in this place. The master's servants found him sleeping on a boulder and cut off his head. It is said that Martynas' grave should be somewhere near the boulder.

In Lithuanian traditions, huge boulders are often associated with the devil. Martynas' boulder is no exception. It is said that one night the devil planned to destroy the Šaukėnai St.Trinity Church with this boulder, but the rooster crowed before he could. Enraged at his futile work, he threw the stone into the forest, where it still lies.



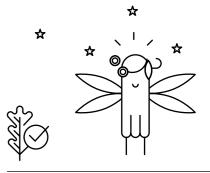
Laumė Stone



107 Laumė Stone

Boulder

The large boulder is located on the slope of a high and elongated hill (probably a ridge). Boulder dimensions: 3.9 m long, 3.7 m wide, 2.9 m high.



Urkuvėnai, Kuršėnų kaimiškoji eldership, Šiauliai district

www.siauliurajonas.lt

55.902457, 22.893846

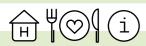
🕀 Kuršėnai – 12 km

It is mentioned in the legend that the Devil carried the stone as a gift to his bride Laume. When the rooster crowed, he dropped the stone and fled.

LITHUANIA **ŠIAULIAI COUNTY**

AKMENĖ AND SURROUNDINGS





WHERE TO EAT

OR STAY OVERNIGHT? LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.VISITSIAULIAI.LT





Venta Regional Park

108 Purviai Outcrop

Outcrop

The outcrop is unique with its exposed deposits of the Quaternary system of the Middle Nemunas. This is perhaps the only outcrop in the Baltic states from the 3rd warm-up of the last interglacial period of Mickūnai (35,000 years ago). The aim is to preserve the section of the Middle Nemunas glaciogenic sediments, which shows the structure of the outcrop, the formation of glacial deposits, and the paleogeography of climate change in the region. In spring, the outcrop is often

exposed to river processes and lateral erosion. Clay, silt, and fine and tiny sand sediments are predominant. Microlayers of organic matter are often found in silt. Occasionally, pebbles, 1-2 cm in diameter, are also found in sedimentary material. While visiting the outcrop, visitors can admire the glaciogenic sediments and understand the formation of the layers. The object is included in the Venta River kayak route.

Purviai Outcrop







Akmenės eldership, Ventos eldership, Akmenės district

www.visitsiauliai.lt

6 56.204739, 22.639218

⊕ Venta - ~5 km

109 Avižlys Erosional Remnant

Erosional Remnant

It is an erosional remnant that is about 112 metres long, with steep slopes ending in a steep outcrop, at the very confluence of the Rivers Avižlys and Venta. Erosion of both rivers has created a unique form of nature - a narrow and long spur. Approaching the Venta, Avižlys falls into an everdeepening valley and behold, hundreds of metres before the confluence, the valleys of the Venta and Avižlys become interspersed. They are separated by a steep embankment of treecovered shrubbery slopes that ends at the confluence with a steep outcrop. The ridge shows layers of pleurisy and sand, which probably settled in a lake that



Venta regional park, Purvėnai geomorphological reserve, Purviai village, Akmenė district

www.ventosparkas.lt

6 56.199472, 22.643389

① Venta - ~6 km

was here 50 to 70 thousand years ago. Preliminary research of the outcrop has shown that this form may be a glacial tectonic fold (glaciotectonic deformation) flushed on both sides by the waters of the Rivers Venta and Avižlys. The object is included in the Venta River kayak route.



WHEN LOOKING AT THE
SHORE, STUDY AND DISCUSS
WHAT COULD AFFECT THE
WATER QUALITY - THAT IS,
WHAT PLANTS, STONES, AND
POLLUTION AFFECT IT. DISCUSS
WHAT NEGATIVELY AFFECTS
WATER QUALITY. STUDY WHAT
ECOSYSTEMS - BOTH PLANTS
AND LIVING CREATURES - ARE
FOUND AT THE SHORE.





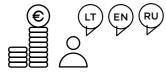


110 Visitor Centre of Venta Regional Park

Visitor centre, exposition

The Venta Regional Park is unique in that the remains of Jurassic animals, including dinosaurs, have survived here. The curiosity of children and adults will be satisfied and many questions about the surviving history will be answered by the modern visitor centre, which has a special exhibition hall with exhibits reminiscent of dinosaur times. As you walk around the exhibition, you will see a variety of fossils from the impressive shells of ammonites to the shells of squid ancestors.

The visitor centre is fun for visitors of all ages because it is modern and contemporary and visitors are attracted by the interesting information terminals and interactive stands. The sounds of nature are reproduced in the exhibition hall, so it is possible to feel as if a time machine has taken you millions of years back.





www.ventosparkas.lt

6 56.18972, 22.68140

Akmenė - ~15 km





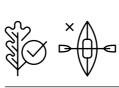
111 Raudonskardis Outcrop

Outcrop

Raudonskardis is a hill made of exclusively clay overlooking the River Venta. Glacial formations brownish moraine layers - can be seen at Raudonskardis Outcrop which formed during the last glacial period. The panorama of the valley can be viewed from Outcrop, which overlooks the levels of several terraces. The outcrop's height reaches up to 20 m. It reveals up to the surface of the moraine plain, the upper layers formed of Quaternary deposits, the lower ones being hidden under the diluvium.



In 1933, the local historian Jonas Matas, who lived in Šemetaičiai inscribed the following testimony: "There is a hole in Raudonskardis: half of the fathom in one way, half in another, forming a square. We used to throw stones into that hole, the stones would fall to the bottom just like in a furnace - making all kinds of sounds. And we were afraid to get in it because we thought it might fall apart on us. Nobody knows who made that hole, and nobody spoke about it, not even old people. Only clay would slip down it.



Papilės eldership, Akmenės district

www.visitsiauliai.lt

9 56.145519, 22.813746

Akmenė - ~15 km

112 Šaltiškiai **Clay Quarry**

Quarry

The quarry is located 5 kilometres northeast of Papilė, in the village of Šaltiškės. In the Early Triassic, 250 million years ago, there was a desert climate and alluvial sediments then accumulated in the muddy plains. Over millions of years, the decay of biotite and hornbeam minerals released iron, giving these layers a red colour. According to scientists, the images are reminiscent of panoramas of Mars. Self-visits in the quarry are strictly prohibited. Guided tours are organized by guides.





Akmenės district



www.visitsiauliai.lt Guided tours are organized by guides: karjerais.lt



56.169535, 22.850588



Akmenė - 20 km



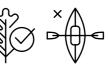


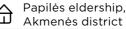
113 **Jurakalnis Outcrop**

Outcrop

It is a typical form of relief formed by linear erosion. The process of linear erosion and its consequences are visible here the erosive ravine itself, and the ravines and ditches where the springs are located. The most geologically valuable are the outcrops of the Jurassic rocks, which are naturally available for research due to intensive erosion. The 15 m high observation tower offers a magnificent view of the Venta Valley and its terraces expressive Venta River valley, Papilė town, and attractions: Jurakalnis geological outcrop and spur, Papilė I and II mounds, St. Joseph's Church, fifteen-trunk lime tree, etc. The shape of the structure resembles a flower petal, it is made of wood and metal structures.

A resting area with information stands, benches, bathroom, also parking lot is located near. On the way towards the outcrop and spur, there is a gazebo and a fireplace. The object is included in the Venta River kayak route.







56.144556, 22.782778



⊕ Papilė - ~1 km





In 1936 a legend was written about the cave near Jurakalnis, which is 4 metres deep and 3 metres long and wide. The cave was once paved with boards and the chapel of St.John was close to it. And there were ghosts: a stranger appeared, and his legs were wrapped in white garments. Most likely, the cave appeared when Russian geologists searched for coal in the 19th century. Searches for ghosts were unsuccessful, but the cave remains.



114 Menčiai Limestone Quarry

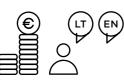
Quarry

The Akmenė region is also famous for the "Canyons of Mars" quarries of impressive beauty. Back in 1932. limestone for the production of lime, and the sugar industry began to be mined in Menčiai. Now part of the excavated quarry is flooded and there are artificial lakes that wash away the remaining limestone outcrops. The shores of flooded lakes are richly overgrown with tall grasses and shrubs. In some parts, a common white-flowered barnacle forms grassland, in others, blue-flowered vetch can be found, and so on. Visitors to the quarry are struck by the view, reminiscent of the Grand Canyon of America



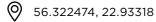
Self-visits in the quarry are strictly prohibited. Guided tours are organized by guides.







www.visitsiauliai.lt
Guided tours are organized
by guides: karjerais.lt



Akmenė - 20 km

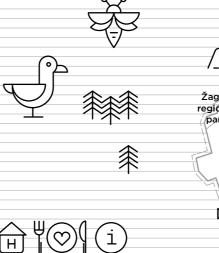


LITHUANIA ŠIAULIAI COUNTY

JONIŠKIS

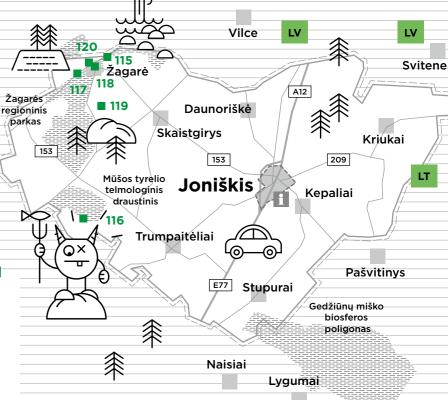
AND SURROUNDINGS





WHERE TO EAT OR STAY OVERNIGHT? LOOK IN THE NEAREST TOURIST

LOOK IN THE NEAREST TOURIST INFORMATION CENTRE, POINT WWW.VISITJONISKIS.LT



115 Svedpolis Spring

Spring

The spring of Švedpolis is in the middle of Švėtė, on the right bank (2 km below Žagarė). The spring water was used for the production of beer by the Kunsman beer brewery in the manor of Svedpol. Up to 50.000 buckets of beer were sold per year, and the famous "Dukes" beer even reached the Caucasus. The brewer's buildings stood near the spring. The brewery operated from the end of the 19th century until the beginning of the 20th century. Later, the beer syndicate closed it and paid the



Žagarės eldership, Joniškis district

www.saugoma.lt

56.371854, 23.282997

Žagarė - 2 km, Joniškis - 30 km, Naujoji Akmenė - 30 km

owners 50 thousand litas for not working factory every year. In April 1940, a large fire broke out in the manor of Swedpol, during which the building of the former brewery burned down. The spring is included in the routes of excursions in Žagarė Regional Park.



Švedpolis Spring

116Tyrelis Stone

Boulder

The boulder of Tyrelis is believed to be a relic of the Baltic pagan faith. The stone is in the Mūša Tyrelis swamp trail which is the longest wooden trail in the swamp in Lithuania.



The trail leads to the boulder, it can be reached by walking along the boardwalk for 3.6 km and about 0.5 km along the normal forest path. Boulder height - 1.45 m, length - 3.2 m, width - 3.0 m, maximum horizontal circumference - 11.2 m, composition - granite.



Gaižaičių eldership, Joniškis district

www.saugoma.lt

56.201694, 23.233806

€ Žagarė - ~30 km





The Tyrelis Stone is believed to be a relic of the Baltic pagan faith. This is evidenced by many essential things. Next to this stone is the so-called Devil's Island. The devil in Baltic mythology is the god of the dead world. The origins of the Rivers Mūša and Juodupis also begin here. The name Juodupis comes from the word "black", which means something dark, mystical, and mysterious. Nearby is the village of Piktuižiai, whose name comes from the word "angry".



Mūša Tyrelis swamp



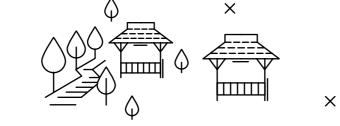
117 Žagarė Esker

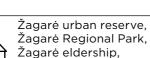
Esker

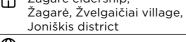
Žagarė Esker is a long, narrow hill formed by sand and gravel from the water of the broken glaciers melting into the cracks and tunnels of the glacier. It is one of the longest eskers in Lithuania, and at the same time one of the most impressive, because of the plains around. The natural relief of



the esker was destroyed in many places during the Soviet times by intensive gravel mining, but it has not completely lost its shape and remained in the recreational area of Žagarė Regional Park together with Žvelgaitis mound, which rises to a height of about 20 m. An 830 m long section on both sides of the mound has been declared a geological natural monument. Žagarė Ridge cognitive walkway is available around Zvelgaitis lake.

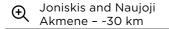














Žvelgaičių Lake



Žagarė Esker

118 Visitors' Centre of Žagarė Regional Park

Visitor centre, exposition

One of the largest visitors' centres is waiting for tourists in the restored palace, where there are several exposures under one roof spectacular hunting trophies, antiques, sports achievements, and an interactive exposition about Žagarė Regional Park and its values. The old town of Žagarė, the impressive nature, and the longest educational trail in the swamp are all outstanding values of the Žagarė Regional Park. The forests of Žagarė are called the birthplace of red deer in Lithuania, and the dolomite layers led to the appearance of a special type of cherries called Žagarė cherries. One of the largest visitors' centres in Lithuania is waiting for tourists in the restored palace in Žagarė Regional Park, where there are several exposures under one roof spectacular hunting trophies, antiques, sports achievements, and an interactive exposition "The Mysteries of Dolomite" about Žagarė Regional Park and its values with various installations, virtual reality, and games.





Malūno street 1, Žagarė, Joniškis district

www.saugoma.lt

O 56.362491, 23.264636

⊕ Joniskis, Naujoji Akmenė – ~30 km

Visitors can get such services here as excursions with a guide, various educational programmes. Visitors can also experience a night at the museum in this mansion.



Visitors' Centre of Žagarė Regional Park

119 Brother's Boulder

Boulder

One of the largest geological natural heritage objects in Šiauliai County, protected by the state. The boulder was brought by the last glacier, which withdrew from the territory of Lithuania about 12 thousand years ago.

The upper part of the irregularly conical boulder is missing a rock of about one cubic metre, which has fallen off the boulder after settling out of the glaciers where it still stands.

120 Žagarė Outcrop

Outcrop

Žagarė Outcrop is a geological natural heritage object - a 2.5 -3.5 m high and about 200 m long dolomite wall, known since the 19th century. In the quarry, dolomite was mined by hand before World War II to burn lime, and later as rubble for road construction. The people of Žagarė, who worked in the quarry, said that they had filled the excavated dolomite into kilns. which were fired with firewood and ferries. The lime burned in 4 to 5 days. They were transported to Joniškis railway



Žagarė town, Žagarės eldership, Joniškis district

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www.saugoma.lt



56.365190, 23.256989



Joniškis and Naujoji Akmenė – ~30 km

station, where they were sent in wagons according to orders, mostly to Russia. In Žagarė Outcrop, visitors can see the layers of dolomite close to the earth's surface. Zagare outcrop is included in various routes of excursions in Zagare town and Zagare Regional Park.



THE MOST
IMPORTANT THING
TO REMEMBER
IN NATURE IS
"WHAT IS
BROUGHT,
TAKE IT AWAY".

It is important to be aware of the impact of human waste on a particular site - it not only damages the landscape, but also threatens both the site's quality and the ecosystems.

It is important not only to leave a tidy and unpolluted environment, but also not to cause permanent damage, such as leave various messages in the outcrops or stones. Move around the site safely without endangering yourself or others, making sure that the site remains in its original condition.



Think before going out -

- Think about the packaging of the products to take and plan accordingly
- What could be taken on that trip that would not have to be gotten rid of on the way?
- Do not look for small waste bins on hiking trails in the forest, swamp or other natural sites, but carry empty packaging the whole way and dispose of it in dedicated waste disposal sites.

Why is this important?

- The management of small bins in nature is expensive and difficult due to difficult access;
- Packaging can become a deadly trap for living creatures;
- Birds and animals carry waste around the area.

Find out the rules for visiting the area and follow them. Keep in mind that there may be restrictions in some locations. They are usually related to nature protection regulations, private residence, crossing of agricultural land, etc.

Be aware of the individual responsibility as a nature tourist!
By choosing eco-friendly travel, we allow the opportunity for future generations to enjoy unique moments in nature.

Pictured: Nereta River, Vīpe parish (Latvia)







www.saugoma.lt

() 56.322333, 23.265472

€ Žagarė - ~5 km



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EUROPEAN UNION

Pictured: Daugava River near Jēkabpils (Latvia)

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Check videos about the Geo destinations here:











The brochure uses photographs from the archives of Latvian and Lithuanian tourism information providers, owners of the objects and Zemgale Planning Region.

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Mūša Tyrelis swamp (Lithuania)

