

# Key Nature and Culture Sites of Lake Oulujärvi and Rokua Areas

Summaries of the site descriptions and key words with translations for field trips and short presentations



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## Foreword

Geopark guides in their work, and for local people to enhance the knowledge of their home region as well as brush up their language skills. This handout will also, hopefully, serve foreign tourists in the area and help them to introduce themselves to Rokua Geopark sites. The contents of the handout were planned and written during an English course organized by the Oulujärvi Adult Education Centre and Rokua Geopark Environmental Education Project in spring 2014.

The handout includes short descriptions of certain key Geopark sites of Lake Oulujärvi and the Rokuanvaara Hill landscape areas. At the end of each description there is a vocabulary with translations (from English into Finnish) and explanations (in English) of the key words. This will help to understand the site description, and to explain the key words to foreign people. The students of the English course have used both scientific and popular sources, in a versatile way, to gather the information for the descriptions. However, the reader or the user of the handout remains responsible for the validity of the text. All the feedback concerning the handout is welcome.

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We hope you will enjoy and make use of the handout!

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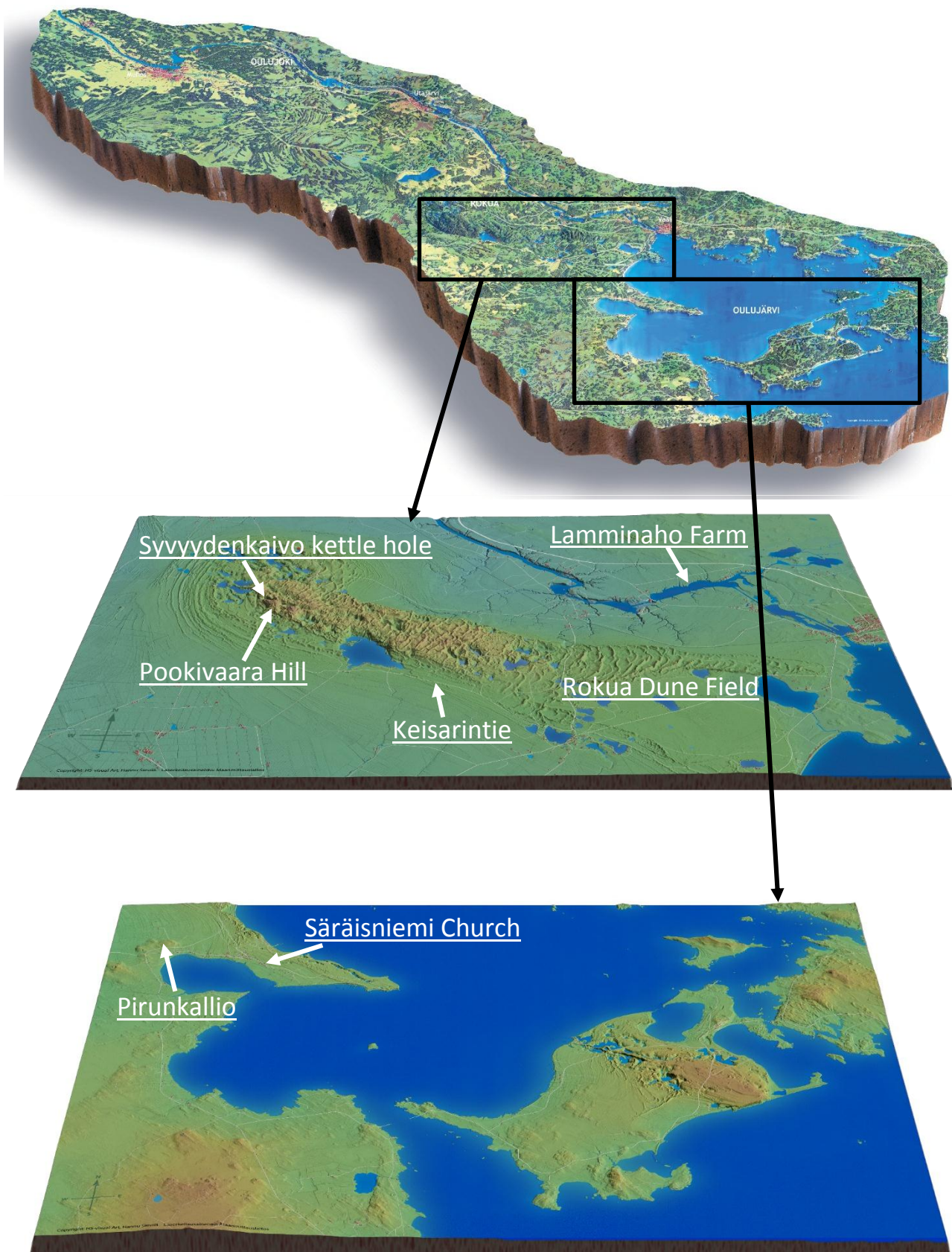
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*Picture on the cover: Buildings on the top of the Pookivaara Hill in Rokua. The Pookivaara Hill is the highest place in Rokua Geopark. Lake Oulujärvi lies behind the esker mounds in the horizon. Picture: Mikko Kiuttu 2014.*

This handout will be updated during the following courses, making use of the advice of the received feedback. The changes will be found in the revision list at the end of the handout.



# Maps of Rokua and Lake Oulujärvi areas and positions of described sites



## Syvyysdenkaivo kettle hole

We are now at the deepest kettle hole in Finland. In the native language it is called Syvyysdenkaivo, and we could translate it into “Well of Depth”. The Well of Depth is 50 metres deep and over 300 metres long.

So, what is a kettle hole? A kettle hole, in general, is a pit. It is not just a hole dug by someone, but it was formed at the end of the latest ice age, when the glacier retreated. Imagine an ice sheet three kilometres high melting. Water is flowing, the ice is cracking and huge blocks of ice fall into the ground. Some ice blocks end up being inside sand, where they do not melt away fast. They melt really slowly during centuries inside the sand, and leave empty spaces where they were located. As you see, this ice block here was quite large.

You might wonder why the edges of the kettle hole have not eroded and filled the pit. Of course, sand is grained material, and tends to settle into a certain angle of repose. Some sand has fallen at the bottom and filled the pit a little, softening the edges, making the slopes more gentle. During the centuries of the ice melting, some flora also grew on the sand layer on the block of ice. The flora and fungi have preserved the kettle hole edges by binding the sand with their roots and the mycelium.



Syvyysdenkaivo. Picture: Henri Luoma

### Vocabulary

| English           | Finnish             | Explanation   |
|-------------------|---------------------|---|
| accumulate        | kasaantua           | gather together or acquire an increasing number or quantity of; to pile up  |
| be buried         | hautautua           | something being totally covered under some matter or particles  |
| block             | lohkare, järkäle    | a very large piece of ice   |
| channel, crack    | railo               | a narrow space between two surfaces which have broken or been moved apart   |
| deposit           | kerrostua, kasautua | a layering of accumulated matter  |
| depression        | syväne              | a sunken place  |
| esker             | harju               | a long ridge of gravel and other sediment, typically having a winding course, deposited by meltwater from a retreating glacier or ice sheet |
| flora             | kasvillisuus        | all the plants of a particular place or from a particular time in history   |
| flourish          | kukoistaa           | to grow or develop successfully   |
| formation         | muodostuma          | the way something is naturally made   |
| ice sheet         | mannerjäätikkö      | a thick layer of ice that permanently covers an area of land  |
| information board | opastaulu           | a notice board with details and facts   |
| kettle hole       | suppa               | a pit formed at the end of ice age by a block of ice that melted inside sand  |
| melt              | sulaa               | the process of solid becoming fluid   |
| mire              | suo                 | an area of deep, wet, sticky earth  |
| peat              | turve               | a dark brown substance like soil that was formed by plants dying and becoming buried  |
| period            | ajanjakso           | a length or amount of time  |
| surface           | pinta               | the outside part or uppermost level of something  |



## Pookivaara, “the Pookivaara Hill”

Pookivaara is the highest place in the Rokua area. It is 194.2 metres above the sea level. It is 50 metres higher than the surrounding area. The top of Pookivaara was the first place which emerged out of the water in this area during the ice age. During 1,000 years the formation rose above the water level as an island, and later became part of the mainland. It was like an island in the middle of the sea. You can see the shoreline stages around the Rokua Hill area when you walk down to the surrounding lower land. The seal was the first animal which looked around from this place.

View from the Pookivaara. Picture: Mikko Kiuttu



Barren and dry hills are extremely fire-sensitive. Lichen is typical flora here because it survives well in the dry and barren soil. As this soil is so fire-sensitive, a fire guard tower and a fire guard hut were built in 1936. In addition to fire observation, this tower was used for air monitoring during the war.

You can see the remains of the war-time dugout just 30 metres down the slope. The dugout was built of logs and covered with sandbags. Soldiers used it as a shelter, and they lived there. There was room for at least 15 soldiers.

In the Pookivaara tower you can see the blue sign, which marks the level of ancient Ancylus Lake. The sea was here 10,000 years ago. Pookivaara is only formed by sand. In some places the sand layer is more than 80 metres deep.

### Vocabulary

| English      | Finnish      | Explanation   |
|--------------|--------------|---|
| Ancylus lake | Ancylusjärvi | Ancylus lake was a fresh-water lake-stage before the present Baltic Sea ca. 8900 - 7200 BC. It covered the area of the Baltic Sea, and even more. |
| barren       | karu         | unable to produce plants or fruit   |
| flora        | kasvillisuus | all the plants of a particular place or from a particular time in history   |
| formation    | muodostuma   | the way something is naturally made or the way it has been arranged   |
| lichen       | jäkälä       | a grey, white, green or yellow plant-like organism that grows on rocks, walls and trees   |
| lowland      | alanko       | the opposite of hills or mountains  |
| mainland     | mantere      | the main part of a country or continent, not including the islands around it  |
| shelter      | suojapaikka  | a building designed to give protection from bad weather, danger or attack   |
| shoreline    | rantaviiva   | the edge of a sea, lake or wide river   |
| soil         | maaperä      | the material on the surface of the ground in which plants grow  |

## The Rokua Dune Field

After the large ice sheet of the ice age had retreated enough, its new creation – the Rokua esker formation – was a newborn island, which lay in the glacier lake. Its only building material was sand, and there was nothing to bind it to earth. From the top of the glacier blew a great, cold wind which ravaged the sandy island.

The wind blew the sand and deposited it first in dunes parallel to the shore. The shore dunes slowly migrated inland as the wind blew and shaped the sandy island. The land rose from the water uncovering more and more sand to be blown by the mighty wind.

As the direction of the wind changed slightly over time, the dunes were elongated into U-shaped parabolic dunes. Ultimately, the flora bound the dunes and they became fossilised. The largest parabolic dunes are 25 metres high. These dunes cover the whole Rokua esker. The easiest way to witness this ancient phenomenon is to visit the Pikku-Rokua area, where you can walk up and down from dune to dune and see how they are parallel to each other.



Pikku-Rokua dune field. Picture: HS Visual Art Oy. Edited by: Mikko Kiuttu

## Vocabulary

| English          | Finnish                       | Explanation  |
|------------------|-------------------------------|--|
| deposit          | kerrostua, kasautua           | a layering of accumulated matter   |
| dune             | dyyni                         | a hill of sand near a beach or in a desert   |
| elongate         | pidentää                      | to become longer, or to make something become longer   |
| esker            | harju                         | a long, narrow, raised line of earth, small stones and sand left on the earth's surface where melted ice once flowed under a glacier   |
| glacier          | jäätikkö                      | a large mass of ice that moves slowly  |
| parabolic        | parabolinen, "U:n muotoinen"  | a parabolic curve is a type of curve made by an object that is thrown up in the air and falls to the ground in a different place   |
| parallel         | yhdensuuntainen, rinnakkainen | side by side and having the same distance continuously between them  |
| phenomenon       | ilmiö                         | a fact or situation that is observed to exist or happen, especially one whose cause or explanation is in question  |
| ravage           | runnella                      | to cause great damage to something   |
| shoreline stages | rantaviivan kehitysvaiheet    | in the areas where ice has pressed the earth, the earth is rising very slowly. In such areas the shoreline is moving towards the sea, revealing more ground. For example the rate of land uplift in Oulu is nine millimetres a year. |
| ultimately       | lopulta                       | finally; in the end  |

## Säräisniemi Church

Säräisniemi Church is one of the oldest buildings in the region. The area of the church is 430 m<sup>2</sup> and it has the seating capacity of 500 people. The church was built in 1779-1781. Without the permission from the majesty the work had to be interrupted for a decade.

The very first church in the area was situated in Manamansalo Island. It was burnt by the eastern enemy during the Russian occupation in the 1580's. The church bell was robbed, of which event various legends remain. The truth is that the bell is in Solovetsky Monastery today. Due to the long distance to the church in Manamansalo, and their isolated position, Säräisniemi people wanted to have a church of their own.

Säräisniemi Church is a cruciform which means that it has the shape of a cross. The shape made it possible to have the pulpit near the congregation. The church has steep gabled roof which is built of shingles. Shingles were a typical roof material of the time. The window frames were originally rounded but were later replaced by angular ones.

The church remained in its original form for a hundred years, from 1779 to 1879. The buildings of Säräisniemi vicarage and the documents of the building of the church were destroyed in a fire in 1859. The rebuilding of the vicarage took resources and time, so there were no resources to renovate the church until 1861.

The post-mortem room imposed by the statute was built next to the church in 1865. In 1870 the decision was made to have one more church bell in the belfry. The swinging would make the whole bell tower move, so it had to be strengthened.

The condition of the church was examined by architect Julius Basilier, and the reparations began in 1896. The stone foundation, the floor and supporting structures, plus the interior furnishing were renewed.

During the second renovation the earlier foundation built of natural stone was replaced by mined gneiss from Pirunkallio. The gneiss from Pirunkallio (Devil's Rock) dating back to 2.7 billion years has been used in local buildings, of which the stone foundation (*picture*) of Säräisniemi Church is a good example. The church sets a fine example of how non-living nature can serve as a basis on building on living nature, and in this case, culture.



The stone foundation of Säräisniemi Church. Picture: Mikko Kiuttu

The partly decayed shingle roof was replaced by ceramic-like eternite plate roofing, and the bell tower covered with sheet metal. A new shingle roof was restored in 1979. Later the church has been repaired by tarring the shingle roof, and painting. The only thing to remain from the time before renovation is the three-faced hymn board.

The church is open for visitors from the beginning of June until end of July. The daily opening hours are from 12 to 16.

## Säräisniemi Church

### Vocabulary

| English          | Finnish            | Explanation   |
|------------------|--------------------|---|
| congregation     | seurakunta         | A group of people who belong to a particular church and who usually have a certain place to gather. |
| gneiss           | gneissi            | A rock type that has re-crystallized in high temperature and pressure, maintaining its solid state. |
| post-mortem room | ruumiinavaus-huone | A room where the medical examination of the body of the dead person was performed.                  |
| pulpit           | saarna(s)tuoli     | A small raised platform in a church where the priest stands to speak to the congregation.           |
| shingle (roof)   | paanu, päre(katto) | A flat and layer-like piece of wood that is used to cover a roof.                                   |
| stone foundation | kivijalka          | A layer of stones/bricks/concrete that forms the solid underground base of a building.              |
| vicarage         | pappila            | The house where a priest lives.   |



## Pirunkallio, “Devil’s rock”

Pirunkallio is a large bedrock outcrop east of Säräisniemi village. The bedrock belongs to the so called Archaean bedrock area and dates back to approximately 2700 million years. At the time the oxygen content of the atmosphere was very low and the life was primitive.

The rock type of the Pirunkallio bedrock is gneiss. The gneiss has a folded structure due to the ancient tectonic phenomena. About 2000 million years ago two tectonic plates collided and the huge compression caused the folds.



The Pirunkallio bedrock outcrop and related mining site.

Picture: Mikko Kiuttu

The gneiss from Pirunkallio has been used in local buildings, of which the stone foundation of Säräisniemi Church is a good example. The folded structure of the gneiss is clearly visible in the stone foundation. The church sets a fine example of how non-organic nature can serve as a basis on building on organic nature, and in this case, culture.

## Vocabulary

| English                | Finnish               | Explanation  |
|------------------------|-----------------------|--|
| gneiss                 | gneissi               | A rock type that has re-crystallized in high temperature and pressure, maintaining its solid state.        |
| folded                 | poimuttunut           | The strata of the rock having a wavelike appearance.   |
| outcrop                | kalliopaljastuma      | The part of a rock formation that stands above the surface of the ground; surface exposure of the bedrock. |
| stone foundation       | kivijalka             | A layer of stones/bricks/concrete that forms the solid underground base of a building.                     |
| stratum, strata (mon.) | kerros, juonne, raita | A layer of (sedimentary) rock having approximately the same composition throughout.                        |

## Keisarintie, "The Emperor's Road"

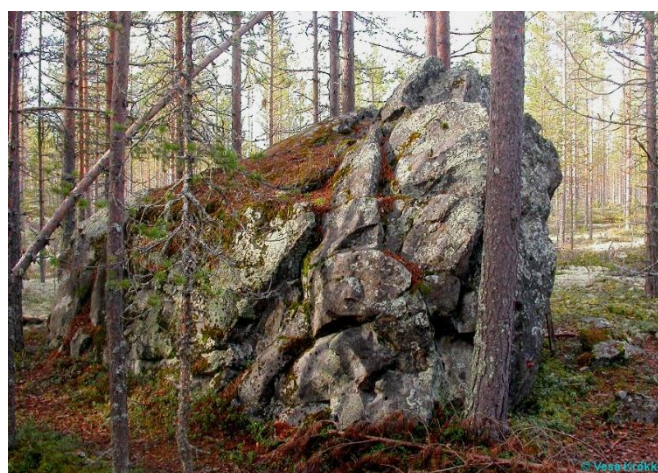
The Emperor's Road in Rokua Geopark was built in the 1600's to connect the castles of Kajaani and Oulu. It combined routes travelled by land and water, on which trading between Oulu and Karelia had been going on for centuries. The construction of the road also had to do with the defence of the eastern border.

The road left Oulu for Säräisniemi, from where it originally went to Kajaani across Lake Oulujärvi either by water or on ice. In Vaala the road follows the southern edge of the Rokua esker area. The road is 46 km long, (of which 22 km in Vaala, 18 km in Utajärvi, and 6 km in Muhos area) and about six metres wide.

Next to the Emperor's Road on the border of Vaala and Muhos, at the north-western end of Rokua National Park, you can see *Isokivi*, 'Big Stone', a huge erratic boulder as a heritage of the Ice Age (see picture below). It has marked the border lines for centuries.

In winter 1622 King Gustaf II Adolf travelled on the newly finished route from the Livonian war (via Viborg, Savonlinna, Oulu, Haparanda) to attend the parliamentary session in Stockholm.

The road got named the Emperor's Road after the Russian Czar Alexander I who was supposed to use the road during his journey in Kainuu in August 1819. Due to a harsh storm in Lake Oulujärvi he refused to cross the lake and continued his journey taking another route by land.



Isokivi, the Big Stone by the Emperor's Road. Picture: Vesa Krökki

## Vocabulary

| English         | Finnish       | Explanation  |
|-----------------|---------------|--|
| erratic boulder | siirtolohkare | A boulder transported by a moving ice sheet or on iceberg floating in water.             |
| esker           | harju         | A ridge accumulated by melt waters of a glacier. It usually consists of sand and gravel. |

## Lamminaho Farm

Lamminaho Farm was founded in the 1750's on the bank of the River Oulujoki, by the Niskakoski rapids. It was owned by the same family for almost two centuries.

It is an entity describing the cultural standard and the policy of economic self-sufficiency of the River Oulujoki area in the 1950's.

The river was an important route for trade and other communication between the towns of Kajaani and Oulu, and connected the large Karelian area to the Bothnian Bay.



Lamminaho Farm. Picture: Mikko Kiuttu

The main means of transport were tar boats called "paltamo" that were designed for the special conditions of the water way. Both Lake Oulujärvi and the River Oulujoki were very difficult and dangerous to travel by boat due to wide open water areas and the foaming and surging rapids.

All the rapids along the river had their own specialties. To travel safely through the white waters the rapidsmen were needed. They were appointed state officials who knew the nature and the special characteristics of their respective rapids.

Lamminaho men in two generations served as rapidsmen from 1833 onwards. They guided the boats through the 9 km-long Niskakoski rapids between Vaala and Nuojua. The Niskakoski rapids were the most turbulent rapids in the river and had six falls along its course.

In the late 19<sup>th</sup> century, tourists and foreign sports fishermen found accommodation at Lamminaho. The River Oulujoki was one of the most famous salmon rivers in Northern Europe of the time.

The construction of the hydro power plants began in the 1940's. In 1953 the water level rose eleven meters due to Jylhämaa and Nuojua dams. For instance, Talassaari island offshore Lamminaho was left under water.

In their testament the last owners of Lamminaho donated the farm and its movables to the National Board of Antiquities in 1992. The buildings and their immediate surroundings are officially protected under the provision of the Building Conservation Act. Today they are in the use of the municipality of Vaala.

In all, there are eleven buildings around the yard area, for example the farmhouse, cow shed, grain barn, sheds and stables. The oldest buildings are from the late 18<sup>th</sup> century.

The main building was built in the early 19<sup>th</sup> century. Today it serves as a museum and cafeteria.



## Lamminaho Farm

### Vocabulary

| English                                       | Finnish                               | Explanation   |
|---|---------------------------------------|---|
| building conservation act                     | Laki rakennus-perinnön suojelemisesta | For example Lamminaho Farm is protected by this act.  |
| cow shed                                      | navetta                               |   |
| foaming of the rapids / surging of the rapids | kosken kuohu / kosken tyrsky          | Strong wavelike forward movement of water.  |
| grain barn                                    | vilja-aitta                           | A small special building in which grain was stored.   |
| mill  | mylly                                 | A place to grind grains to make flour. Usually gets its energy from water or wind. Some of them can also be used by hand. |
| National Board of Antiquities                 | Museovirasto                          | For example Lamminaho Farm is owned by the National Board of Antiquities.   |
| open lake                                     | järven selkä                          |   |
| policy of self-sufficiency                    | omavaraistalous                       | Living off one's own land and the produce in the nearby environment.  |
| rapidsman, rapids shooter                     | laskumies                             | A person who guided the tar and trade boats through the rapids.   |
| shed  | aitta                                 |   |
| stable  | talli                                 |   |
| state official                                | valtion virkamies                     | A person elected or appointed by the authorities.   |
| tar   | terva                                 | An oil-like substance that is gained from pine trees by burning them in low-oxygen conditions.                            |
| tar-burning pit                               | tervahauta                            | A funnel-shaped structure where the blocks of pine covered with peat and moss were burned.                                |

## Revision list

| Date     | Changes and additions |
|----------|-----------------------|
| 2.9.2014 | Published             |