

LAKE BAIKAL. BASIC INFORMATION

Lake Baikal is a special treasure among all the beauty of Siberia's nature.

It is one of the greatest mysteries nature has gifted us with, and even nowadays it cannot be fully unraveled. To date, scientists argue about the genesis of Baikal and whether it was the result of the inevitable drifting of tectonic plates or of a catastrophic collapse in the earth's crust. Baikal has a maximum depth of 1,641 meters, making it the deepest lake on earth. This gigantic reservoir contains around 23,000 cubic kilometers (or 22% of the world's freshwater resources) of crystal clear fresh water with low mineral contents but highly saturated with oxygen. Baikal is thus the largest fresh surface water reservoir on earth. The lake is home to 26 rocky islands – the largest of them being Olkhon Island. The total length of its coastline amounts to nearly 2,100 kilometers. Mother Earth is wise; she has hidden the last living well of our planet in the center of Siberia, far away from her sometimes unwise children.

Local, indigenous people believe Lake Baikal to be sacred, and many of them even regard it not as a lake but as a reason-endowed, wise creature. There are many legends and beliefs originating from Baikal. The native Buryats will not even throw a stone from its shores into the water without having a reason for doing so. "Baikal placed this stone with its waves on this very spot, and this means that it should lie there." Even the first Russians in this area understood and felt the lake's holiness.

LEGEND ABOUT BAIKAL'S DAUGHTER – ANGARA

In old times powerful Baikal was funny and kind. He loved dearly his only daughter Angara. She was the most beautiful in the entire world. In the afternoon she became as light as the sky can be, and in the night she was darker than a thunder cloud. And everybody who had passed Angara, enjoyed her and glorified her. Even birds of passage: geese, swans, cranes – went down, but seldom touched Angara's water face. They said: "How can we make light black?" Old Baikal took care of his daughter more than of himself. Once, when Baikal fell asleep, Angara ran out to the young man Enisey. Her father woke up angrily, moved his waters. A great storm began. Mountains cried, trees fell, the sky turned black, and animals in fear ran away all over the world. Fishes dived to the bottom of the water, and birds flew to the sun. Only the wind was blowing hard, and the sea was worrying. Powerful Baikal hit the mountain and broke a piece from it; throwing it after his daughter. The cliff fell on her beautiful neck. Blue-eyed Angara begged; choking and crying, she began to ask: "Father, I'm dying from thirst, excuse me, and give me at least one drop of water!" Baikal shouted angrily: "All I can give you is my tears!" Now thousands of years later Angara flows to Enisey with tears; and grey lonely Baikal has become gloomy and scary. The cliff, which was thrown after Angara, people name Shaman's Rock. And rich victims were brought to Baikal there. People used to say: "Baikal will be angry, and will break Shaman's Rock, causing water to rush and fill all the ground ". But long ago it was; now people are brave and are not afraid of Baikal... If you give yourself an amazing meeting with Baikal, you'll feel spirit of this great lake, its magic and majesty!

GEOGRAPHY

Lake Baikal is in the south of East Siberia. In the form of a new moon, Baikal stretches from south-west to north-east between latitudes 55°47' and 51°28' in the northern hemisphere and longitudes 103°43' and 109°58'. The lake is 636 km long, while its width varies from 81 km at its greatest point in central Baikal, to 27 km at its narrowest point, opposite the delta of the river Selenga. Baikal is 455 metres above sea level. Its shoreline measures some 2000 km, more than half of which is protected.



The surface area of the lake, when its water level is 454 m above sea level, is 31470 square kilometres. The maximum depth of the lake is 1637 m and average depth - 730 m. Some sources state that the maximum depth is 1642 m. Which is correct? The answer to this question is somewhat paradoxical - they are both correct. The thing is that the telemetry error for such depths is about 2%, i.e. 30 metres. So really it is correct to say that, at its greatest, Baikal is 1640 m deep.

336 permanent rivers and streams flow into Baikal, with half the incoming waters brought by the Selenga. Only one river flows out of the lake, the Angara. However, the question about the number of rivers flowing into the lake is rather controversial. It is more likely that there are fewer than 336. There is no doubt that Baikal is the deepest lake on Earth, its closest rival being Lake Tanganyika, a whole 200 metres behind. The lake has 30 islands, though, as has been said already, opinions on this differ. The largest of them is the [island of Olkhon](#).

THE AGE OF LAKE BAIKAL

In literature, the age of the lake is usually given as 20-25 million years. In actual fact, the question of its age should be considered open, as the application of different methods of determining age give from 20-30 million to a few tens of thousands of years. It would seem that the first estimate is closer to the truth - Baikal is really a very ancient lake. If one accepts that Baikal is actually some tens of millions of years old, then it is the oldest lake on Earth.

It is thought that Baikal came about as the result of tectonic forces. Tectonic processes occur to this day, as seen by the high seismic activity of the Baikal region.

ORIGIN OF THE NAME

Many works of literature have been devoted to the question of the origin of the word «Baikal», indicating a lack of certainty in this regard. There are some ten possible explanations for the origin of this name. Amongst them, the most likely is thought to be the version that the lake's name comes from the Turkic language's Bai-Kul - rich lake. Of the remaining versions, perhaps two should be mentioned: from the Mongolian Baigal - rich fire and Baigal Dalai - big lake. The people living on the lake's shores named it each in their own way. For example, the Evenk called it Lamu, the Buryats - Baigal-Nuur, and even the Chinese had a name for Baikal - Beihai - Northern lake.

The Evenk name Lamu, or Sea was used for a few years by the first Russian explorers in the 17th century, then they changed to the Buryat - «Baigal», and subsequently «Baikal» by means of a phonetic substitute slightly softening the letter «g». Baikal is quite often called a sea, simply out of respect, because of its turbulent spirit, or because its far shore is often hidden in mists... At the same time, a difference is made between the Maloye Morye (Small Sea) and the Bolshoye Morye (Big Sea). Maloye Morye is the part situated between the northern shore of Olkhon and the mainland, all the rest is the Bolshoye Morye.

BAIKAL'S WATER

Baikal's water is unique and surprising, as is the lake itself. It is unusually transparent, pure and saturated with oxygen. In not so distant times it was considered to have curative properties, and was used as a remedy. In spring the transparency of the lake's water, as measured by a Sekki disc (a white disc, 30 cm diameter), is 40 meters (for comparison, in the Sargasso Sea, which is considered to be the standard of transparency, there is a transparency of 65 metres). Later, when a mass algal bloom occurs, the water's transparency decreases, but in still weather one can see through to the lake floor to a considerable depth from a boat. This high degree of transparency is explained largely by the fact that Baikal's water has a low mineral content and is close to distilled water, thanks to the activity of the organisms living in it.

The volume of the lake's water is some 23 thousand cubic kilometers, which is 20% of the world's and 90% of Russia's freshwater resources. Each year Baikal's ecosystem produces some 60 cubic kilometers of clear, richly oxygenated water.

CLIMATE

The climate of East Siberia is acutely continental, but the enormous mass of water in Baikal and its mountainous surroundings create an unusual microclimate. Baikal acts like a large thermostat - in winter it's warmer at Baikal, and in summer cooler, for example, than in Irkutsk, some 70 km away from the lake. The difference in temperature is usually around 10 degrees. The forests covering almost the entire coast of Baikal make a considerable contribution to this effect.

Baikal's influence is not limited to temperature regulation. Because of the fact that there is very insignificant evaporation from the cold surface waters, clouds cannot form above the lake. Also, the air masses bringing clouds from the land, become warmer when tumbling over the coastal mountains and disperse. As a result, the sky over the lake is more often than not clear. This is confirmed by statistics: in the Olkhon area, there are some 2277 hours of sunshine a year (for comparison, the coast near Riga has 1839, and Abastumani in the Caucasus - 1994). Of course, one shouldn't imagine that the sun is always shining over the lake, if you are not lucky, you can find yourself in one, and even two weeks of dreadfully rainy weather even in the sunniest place at Baikal - Olkhon, but that is very rare.

The average annual temperature of the water at the surface of the lake is +4°C. Near the shore in summer it can reach +16°-17°C, and in the shallows of inlets +22°-23°C.

ANIMAL AND PLANT LIFE OF BAIKAL

There are more than 2600 species and varieties of animal and over 1000 species of plants in Baikal. From time to time new species are discovered. There is reason to believe that at present only some 70-80% of Baikal's living organisms are known to science. In former times, when Russian science was not yet in its present state of coma, on average some 10 species were discovered annually. About 40% of the plants and 85% of animal species inhabiting open Baikal are endemic, that is, they are found only in Baikal. Living organisms are distributed right from the surface of the lake to its very deepest parts.

There are 58 species of fish in the lake. The best known being omul, white-fish, grayling, huchen (salmon trout), sturgeon, «golomyanka» - the Baikal oilfish, and «lenok», a fish of the salmon family. Some 2000 species of plant grow on Baikal's shores, and 200 species of bird nest there. A typically marine mammal, the unique Baikal seal or nerpa, is found here. It is suggested that it came here from the Arctic Ocean along the rivers Yenisei and Angara. Its present population numbers a few tens of thousands. It can be seen quite frequently in summer in the central and northern parts of the lake.

The climate of Baikal and the Baikal Territory is unique. The lake's huge water mass gives it certain features of a seashore climate. Rather significant are the temperature differences between the Baikal hollow and surrounding territories of Eastern Siberia. Thus, in Kachug the average temperature in December is -27 to -39°C, in Irkutsk -25 to -27°C, on the shores of Baikal - 12 to -27°C. In summer, when it is +25°C and more in Irkutsk, it is +15 - +18°C on Baikal. This difference diminishes slightly after the lake freezes, but still remains quite noticeable. Baikal is often called a

museum of climates because of the variations that result from differences in distance from the lake, the shape of the coastline, the relief and surface of the shores, the steepness of slopes, their orientations, etc

LISTVYANKA – A KEY TO BAIKAL

First Siberian settlers used to call the place by the Angara river source Listvennichnoye (“listvennitsa” stands for “larch” in Russian) due to a great amount of larches growing in the region. Now the name “Listvyanka” is more popular.

Listvennichnoye is located not only in the watershed between Baikal and Angara but also in the watershed of historical periods. At first sight it represents a modern tourist settlement with new hotels and an actively developing infrastructure. But should you take a stroll along the beach – and time loses its sense being surrounded by wild nature living according to its own laws for it has not ever been developed, nor tamed in the neighbourhood of unbounded mirror-like water surface and ever befogged mountain ranges.

Throughout its history Listvyanka has known the times of prosperity and decay, years of rapid growth and decades of deep sleep. Its development was not connected with any government decrees being a result of the proud, independent Siberian’s temper, keenness of wit, economy and carefulness. A lot of historic events are connected with this ancient village on Baikal. And should one mention the pioneers’ deeds, scientific research or the development of great Siberian trade-ways – the name of Listvyanka is not to be left aside.

Listvyanka was the very place where the road to the east of Russia took its starting point and it was the port for the Cossacks’ ships to sail away in search of new lands. Thus, in the course of time Listvyanka became a custodian of Baikal history.

In the course of more than 300 years the inhabitants of the village experienced the Cossack pistols and peasant tillage, saw gold diggers and the exiled, sea ships and fishing barges, railway passing-tracks, ice-breaker berths, and shipyards. The revolutionary years left their imprint on the village as well.

It has been a long time since Listvennichnoye became the tourist centre of Baikal. Just as in the old days ships sail off the Listvyanka port to please tourists and holiday-makers with excursions and long-term cruises.

Geographically Listvyanka is situated in a unique place, i.e. by the Angara source which is the only river flowing out of Baikal. The width of the source is about one kilometer, while at the outlet from the lake it seems as if the river drops 3,5 metres down. It seems as though the ledge fulfils the part of a natural regulator letting only a definite amount of Baikal water flow down into the river.

The appearance of Listvyanka has started to change lately. The shore has been built up with new first-class hotels, such as «Mayak» («The Lighthouse») or «The Baikal Legend», while the streets have grown cleaner and well-equipped.



OLKHON ISLAND

Olkhon Island - is the heart of Baikal. Its geographical, historical and sacral center is the personage of ancient legends and historical tales. Olkhon is supposed to be a large religious center of Shamanism in Central Asia. It concentrates on its territory all the natural varieties Baikal landscapes. And it is a real reserve of wonderful views and breath-taking sceneries for wild - life amateurs and photographers. Olkhon is full of archeological objects (143!) There are graves, ancient settlements, ruins of stonewalls. The museum of the local history has collected a very good exposition of the islanders. Here you can see the chest - signs of Chingghis Haan's warriors, discovered in the island and listen to the legends about their presence in Olkhon. The most famous object of Olkhon Island is Burkhan - Cape. This shaman's place is one the 9th sacred ones in Central Asia. Sacred rock, with the cave , going through it was accessible only for Shamans, because of its being revered as "house of Baikal spirit", which could be visited just for shaman's rituals. At the present time everyone is able to visit it but it's better not to forget that the ancient prohibition is still believed to be functioning drawings and Sanskrit writings kept

USHKANIY' ISLANDS

Ushkaniy Islands - is one of the wonders of the lake. It is an archipelago consisting of 4 islands, located in the central section of Baikal. They always attract attention of the scientists who are trying to define their origins, and the tourists astonishing of the great number of ant - hills, very tallness, made of white marble pieces. But mainly they are famous for the largest lair of fresh water seal - Baikal unique "Nerpa". The scientist go on discussing the problem, were they came from. The biggest island is well - known for its caves with the treks of staying of ancient humans, discovered by scientists. All of them now are under control of the personal of Zabaikalsky National Park.

THE ROUND-BAIKAL RAILWAY

It is a unique memorial of engineering art of beginning of 20th century. It is trucks are going through the rocks of Primorsky Mountain Range, along the Southern shore of Baikal. This section of Trans - Sib is famous for its numerous tunnels, which were built without machines, by hands. There are 39 tunnels (all together 8 994 m long). This section of the "Great Siberian Way" didn't have any comparison between other railroads in Russia. That's why it was called "The golden buckle of the steel belt of Russia". Currently it is historical.

Facts about Baikal Lake

Based on data provided by Irkutsk Limnological (Lake Studies) Museum (one of the three museums of the kind in the world and the only one in Russia)

Name: Lake Baikal (however, some geologists make it a point that the Baikal formation process – lithosphere platforms moving away from each other – is typical of ocean geology. This is exactly the way Atlantic and Indian oceans formed)

Status: In 1997 UNESCO declared the lake to be a part of World Nature Heritage

Geological age: 25-30 million years

Maximal depth: 1,637 meters (about 1 mile) – the deepest lake on the planet (however, this figure is subject to constant changes, as the basin formation is still underway – quite frequent earthquakes (sometimes as strong as 10 points Richter scale) in the area are suggestive of the process)

Maximal length: 636 km (395 miles)

Maximal width: 79.4 km (49 miles)

Altitude: 455 metres above sea level

Volume: 23,000 m³ of fresh drinking water (if all rivers in the world flowed into the Baikal basin, it would take them a year to fill it completely)

Contributors: 330 rivers and rivulets when the climate is dry; about 500 of them when the year is rainy or in spring, when the snow in the mountains is melting (the Angara is the only river that flows out of the Baikal)

Islands on Lake Baikal: 27 (the biggest - Olkhon)

Flora and fauna: over 3,500 animal and plant species (about 84% of them are endemic, i.e. can only be found in Lake Baikal)

Meet:

- Fish of (Amblygobius) bullheads family – their closest relatives can be found in California!
- Golomyanka (Comephorus dybowskii) – is the only Siberian fish that gives birth to its young (so they do not lay eggs, like all other fish species, but give birth to live little fish, like tropical fishes). Besides, it can live as deep as 1,600 metres. About 44% of body weight is fat, which is used in Tibet medicine to cure rheumatism, atherosclerosis, pestering wounds. Rumour has it, the fish is so transparent for its fat, so if you put golomyanka on a book page, you can read through it
- Baikal sturgeon – they used to catch 100 kilos heavy specimen! These days this fish species is listed in Russian Federation Red Book