SPEICAL EDITION

Gef THE PRECIOUS NECKLACE OF BAIKAL







The Ministry of Natural Resources and Environment of the Russian Federation is the state authority responsible for establishing and ensuring the operation of specially protected nature areas with federal status (pursuant to paragraph 2 of Decree No. 404 of the Government of the Russian Federation of May 29, 2008 "On the Ministry of Natural Resources and Environment of the Russian Federation") (www.mnr.gov.ru).



GEF: the Global Environment Facility (Donor) unites 182 countries – in partnership with international institutions, civil society organizations, and the private sector – in an effort to address global environment issues and support national initiatives in the field of sustainable development. Today the GEF is the largest provider of funds for environmental initiatives. As an independently operating financial institution, the GEF extends grants for projects related to biodiversity, climate change, international waters, land degradation, ozone-layer depletion, and persistent organic pollutants. Established in 1991, the GEF has achieved considerable success in its work with developing countries and emerging economies by providing USD 9.2 billion in grants and by leveraging USD 40 billion in co-financing for over 2700 projects in 168 countries (www.thegef.org).



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UNDP: The United Nations Development Programme (Employer) is the United Nations' global development network advocating positive change in people's lives, helping countries in crisis prevention and recovery, and supporting economic growth that will improve the quality of life of all people. Such a goal may be achieved only through an in-depth understanding of local conditions and by providing member-countries with access to knowledge, expertise, and resources. The UNDP operates in 177 countries, working with nations on their own solutions to global and national development challenges (www.undp.org).

UNOPS: The United Nations Office for Project Services (Employer) is an operational arm of the United Nations supporting a wide range of partners' assistance and development projects (one

billion USD each year). The UNOPS mission is to serve people in need by expanding the ability of the United Nations and its partners in implementing peacebuilding efforts, humanitarian assistance,

WUNOPS



and development. (www.unops.org). Atlas of Culture (Implementation Agency) is a project to produce documentaries and popular



ECOS Publishing House (Implementation Agency) is the publisher of a line of magazines, including periodicals, special interest and environmental magazines. One of these magazines is the WORLD OF BAIKAL science magazine, winner of the National Environmental Prize of the Russian Federation.



The Baikal Institute of Nature Management of the Siberian Branch of the Russian Academy of Sciences (Partner, www.binm.ru).

- ▶ Nature management issues: interaction between natural and socio-economic systems.
- Chemical elements and compounds in natural and artificial environments.
- Developing new materials and resource saving, eco-friendly technologies; chemical aspects of rational nature management.

Fund for Protection of Lake Baikal (Partner, baikalfund.ru). The mission and goals of the FPLB:

science films (http://www.atlas-culture.ru).



 Providing support to large-scale scientific projects and research with the purpose of preserving Lake Baikal;

- > Developing concrete scientific and practical recommendations based on such research;
- Fostering development of state-of-the-art environmentally safe technologies and preparing them for commercial use;
- Preserving biological diversity in Lake Baikal and the whole region.



The Russian Geographical Society (Partner) unites experts in the field of geography and environmental studies who contribute to preserving the natural wealth of Russia (www.rgo.ru).

THE PRECIOUS NECKLACE OF BAIKAL

WORLD OF BAIKAL SPECIAL EDITION

The Precious Necklace of Baikal Magazine has been prepared under the auspices of the UNDP/GEF Program of Integrated Natural Resource Management in the Baikal Basin Transboundary Ecosystem, http://baikal.iwlearn.org

A Word to the Reader



ourism is a priority industry for future economic development of the Baikal basin. The number of tourists visiting the region is growing. According to some estimates, the annual growth

rate is as high as 30%, with almost 1.5 million people expected to be visiting Lake Baikal each year by 2020. Considerable efforts are being undertaken in this respect, including on the part of international organizations, aimed at promoting cooperation in the field of tourism.

It is general knowledge that the Russian government has introduced a special protected area regime within the boundaries of the Baikal Nature Territory (BNT). Thus, a number of environmental restrictions have been introduced that limit industrial activity within the Core and Buffer Zones of the BNT. That makes it possible to develop other types of economic activity, including within the specially protected areas which are part of the BNT.

Specially protected nature areas (SPNA) cover 33% of Lake Baikal and include nature reserves, nature sanctuaries, and national parks. In this context, the SPNAs play a key role in land use on the BNT and serve as centers for both biodiversity conservation and ecotourism development providing viable economic alternatives to local communities. Protected areas are designed to protect the natural state of the environment and nature conservation sites that present historic and environmental value.

The Russian government has prioritized tourism development in the area, and has specifically addressed the high potential of SPNAs in and around the Baikal region. Within the efforts to implement the Federal Special-Purpose Program for Protection of Lake Baikal and the Social and Economic Development of the Baikal Nature Territory, the Baikal SPNAs have focused on promoting recreation and ecological tourism, specifically, by raising the efficiency of the recreation potential of SPNAs.

There are several nature reserves and national parks located in and around Lake Baikal which together are THE PRECIOUS NECKLACE OF BAIKAL: the Baikalsky State Nature Biosphere Reserve, the Barguzinsky State Nature Biosphere Reserve, the Baikalo-Lensky State Nature Reserve, the Dzherginsky State Nature Reserve, the Sokhondinsky State Nature Biosphere Reserve, the Daursky State Nature Biosphere Reserve, the Alkhanaisky National Park, the Zabaikalsky National Park, the Pribaikalsky National Park, and the Tunkinsky National Park. The media concept bearing the same name, the PRECIOUS NECKLACE OF BAIKAL, developed under the UNDP-GEF Project on Integrated Natural Resource Management in the Baikal Basin Transboundary Ecosystem (the Baikal Project) is to raise awareness of the people of Russia and the public in other countries about the current state and prospects of developing tourism in nature reserves and national parks of the Baikal region. This is an area of unique flora and fauna, and magnificent landscapes. Special focus will be



on eco-trails that lend visitors a possibility to enjoy nature in its pristine state.

For the purposes of implementing this concept, expeditions have been arranged to all the nature reserves and national parks of the area, and professional photographers have been hired to conduct photo and video shoots of the main landscapes, tourist routes, and eco-trails.

This special edition of the World of Baikal Magazine describes all the SPNAs in and around Lake Baikal and lists the ecotours that lead through such areas. The Atlas of Culture Project has produced THE PRECIOUS NECKLACE OF BAIKAL documentary which is a welcome addition to the World of Baikal Magazine. The documentary and the magazine have been produced both in the English and Russian languages.

Vladimir Mamaev UNDP-GEF Regional Coordinator

The Precious Necklace of Baikal

UNDP-GEF Baikal Projects



cotourism in the specially protected nature areas (SPNA) is developed with support from the UNDP-GEF Project on Integrated Natural Resource Management in the Baikal Basin Transboundary Ecosystem (the

Baikal Project).

The Baikal Project in conjunction with the government of Russia is focusing on sustainable development of territories included in the protected areas of the Baikal basin. The issue of promoting ecotourism in international markets is currently of special importance, and for this reason a promotion campaign for SPNAs has been launched under the auspices of a project targeting the European tourist market with special emphasis on development of eco-trails and using ecotourism best practices, and also promoting protected areas (PA) through the Internet in different languages. Advanced training offered to the employees of SPNAs includes courses on management of ecological tours; implementing programs to involve the local population in providing services to tourists; integrating the SPNAs in the social and economic structure of federal regions; and developing environmental education and educational facilities at the SPNAs.

Within the framework of the project European experts conducted an assessment of the Baikalsky State Nature Reserve with regard to conformity of its infrastructure and services to global standards of sustainable tourism. That allowed the nature reserve to sign a memorandum on joining the Federation of Nature and National Parks of Europe representing over 430 PAs throughout Europe (EUROPARC, www.europarc.org). These efforts involved developing a plan for environmentally sustainable tourism; widening the main eco-trail; launching a pilot project for improving the local sewage treatment facilities of the Central Lodge; developing an ecotour package consisting of a detailed description of all arrangements and a technical and business plan of each tour; tour maps; photo and video presentations of each tour in Russian and English; and an interactive nature reserve web site focusing on ecotourism.

To assist the Zapovednoye Podlemorye Federal Budgetary Institution, a plan for developing recreational use and conservation of natural environment systems has been drawn up; the eco-trail on Ushkany Islands leading to the colonies of Baikal ringed seals restored; a pilot ecocamping site established in Sorozhya Bay; and assistance provided to help the nature reserve join the ECOPARC Federation.

Bird-watching tours are considered to be one of the most fast-growing segments of ecotourism. Birding tours have been developed, a guide-training course held, and professional training conducted at the nature reserve and the national park. The new tours will be tested on the territories of the reserve and the park in 2015.



To assist the Zapovednoye Pribaikalye Federal Budgetary Institution, an ecotour is being developed and special protective railings at Khankhoiskaya Spit are being erected which will protect the population of a rare plant species *Craniospermum subfloccosum Krylov*. In addition, work is being conducted to build an eco-trail on Cape Khoboi, a unique nature site on Olkhon Island (Lake Baikal) within the territory of the Pribaikalsky National Park, a popular tourist destination. Certain landscaping work has to be conducted to prevent soil degradation and the location has to be equipped to ensure tourist safety.

The Baikal Project has conducted a number of joint programs with the Tourism Agency of Buryatia. Among other activities, the project supported the organization of the EcoTourism on Baikal +20 International Ecotourism Forum which gathered international experts from different countries and held a round table discussion on Developing Ecotourism: Initiatives and Forging Partnerships Between Business, Society, and the State. A handbook on developing ecotourism has been published. Assistance has been provided to hold the Best Ecotour Guide contest. A route taking tourists to the image of the Yanzhima, a Buddhist deity, located near the Barguzinsky Datsun Monastery (Yarikto Village, Barguzinsky District), has been developed, an eco-trail has been built, and information boards have been placed along the trail.

The PRECIOUS NECKLACE OF BAIKAL media project has been produced to share the best practices of implementing ecotourism projects in SPNAs, engaging local communities, raising awareness, and attracting tourists.

> Sergey Kudelya Baikal Project Manager

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A Word of Welcome



"On waking up and putting yourself in order, you should put your planet in order", these words written by Antoine de Saint-Exupéry, strange as it may be, are not any less valid today, and with every passing year they are becoming even more relevant. Nature protection continues to be one of the most pressing problems of our time. For us, people living near Lake Baikal, this is an especially important task, since we are responsible for preserving "the water well of our planet."

A number of specially protected nature areas with federal status are located in our republic, including the Barguzinsky Nature Reserve (the first state reserve in Russia), the Baikalsky, and the Dzherginsky Nature Reserves. We also have the Zabaikalsky and Tunkinsky National Parks, and the Altacheisky, Frolikhinsky, and Kabansky Nature Sanctuaries. These territories are unique in their characteristics and contain a whole range of rare plant and animal species. These are all areas of special significance for nature protection, scientific research, and recreational use.

Konstantin Dremov, *Head of the Department of the Federal Supervisory Natural Resource Management Service (Rosprirodnadzor) in the Republic of Buryatia*



Establishing specially protected nature areas is one of the most efficient ways of protecting the environment. The system of national SPNAs was largely based on the premise that biodiversity may be effectively protected only if preferably large areas of virgin land can be closed off and restricted to any housing construction or economic activity.

As residents of the Baikal region, we bear a responsibility for preserving the natural wealth of the area, since we live near Lake Baikal, the jewel of nature. The unique nature of our reserves and the social importance of Lake Baikal as a UNESCO World Natural Heritage Site make it essential to prevent any situations damaging the natural environment. We must preserve the unique beauty of the region for our descendants. Let us hope that our joint efforts will be successful.

Oksana Kurek, Interim Head of the Department of Rosprirodnadzor in Irkutsk Oblast



At present new ways of preserving natural and cultural heritage are being developed, and specially protected areas play the decisive role in this process, since a range of cultural values – both tangible and intangible – may be sustained only in a traditional natural environment. On the other hand, the natural heritage sites that we can enjoy today have come down to us thanks to a special cultural environment that is indelibly linked to traditional natural resource management and traditional social and cultural values exemplified in the federal and regional specially protected areas of Zabaikalsky Krai.

The Precious Necklace of Baikal Project has helped us expand our understanding of the role and significance of protected nature areas in the region, and emphasized the importance of understanding nature as a heritage which should be preserved for future generations; at the same time it has highlighted their special role as an essential resource that is already determining the well-being of society.

Alexander Menovshchikov, Head of the Department of Rosprirodnadzor in Zabaikalsky Krai



At present the problem of natural heritage conservation is as pertinent as ever. In the present circumstances new ways of addressing this issue are being developed, and specially protected areas play a major role in this respect, since they provide an opportunity to preserve natural landscapes, rare plant and animal species, and unique sites, including Lake Baikal, in their pristine, natural state.

Yuri Safianov, Minister of Natural Resources of the Republic of Buryatia



At present there are 100 specially protected nature areas within the territory of Irkutsk Oblast, including six federal status areas, 92 regional status areas (12 state nature sanctuaries and 80 natural monuments) and two local status areas (the Kaiskaya Grove Nature Landscape and the Water Conservation Zone of the Yershovsky Water Catchment Area) established in 2011 and 2012 in Irkutsk.

By resolution of the Government of Irkutsk Oblast two specially protected nature areas with regional status were established in 2014, the Lebediniye Lakes (Okunaisky) State Nature Sanctuary with a complex landscape (profile) located in the Kazachinsko-Leninsky District and the Batorov Grove Natural Monument within the territory of the Alarsky District. With the establishment of new SPNAs with regional status, the protected area has increased by 215,476 hectares to 737,812 hectares.

At present preparatory work is under way in Ziminsky District of Irkutsk Oblast to establish the Kimelteisky State Nature Sanctuary with regional status. All documents have been prepared and filed with the state environmental expert evaluation authority with regional status.

Efforts to develop the system of specially protected nature areas with regional status are a priority for the Government of Irkutsk Oblast.

Oleg Kravchuk, Minister of Natural Resources and the Environment of Irkutsk Oblast



Zabaikalsky Krai is a unique territory because it supports a diversity of ecosystems from the tundra in the north of the region to woodlands and steppes in the south. Specially protected nature areas with federal and regional status include 89 different category SPNAs which account for 5.42% of the region's total area. The system of regional SPNAs includes 15 nature sanctuaries, 64 natural monuments, and two nature parks. The Chikoi National Park was established within the territory of Krasnochikoisky District in 2014. With financial assistance from the Amur Branch of the World Wildlife Foundation (WWF), the Ministry of Natural Resources of Zabaikalsky Krai is conducting preparatory work for launching the Verkhneamursky State Natural Landscape Sanctuary with regional status (Mogochinsky District).-

By expanding the network of specially protected nature areas we are not only preserving the environment, but making an important contribution to the social and economic development of the region leading to higher living standards among the rural communities which may be achieved through expanding educational tourism and creating new jobs in rural areas.

Zabaikalsky Krai has a huge potential. Our goal is to open it and use it efficiently. For this purpose we should consolidate our joint efforts and work constructively.

Oleg Polyakov, Minister of Natural Resources and Industrial Policy of Zabaikalsky Krai

Atlas of Culture Baikal Project





🛧 Elena Chumak, Film Director





he Atlas of Culture produces documentaries and popular science films about Russian history, ethnography, archaeology, science, and culture. Work on the Baikal series of documentaries has allowed

us to address environmental issues for the first time. Our meeting with the great lake was both unexpected and lucky. We were lucky to embark on such an interesting and diverse project. There are not many filming crews that have had a chance to spend several working seasons at Lake Baikal, to travel almost 20,000 kilometers through Eastern Siberia, and visit the most picturesque and hardto-reach locations.

The Precious Necklace of Baikal documentary was shot

on location at all the specially protected areas — nature reserves, national parks, and nature sanctuaries. We filmed a host of different landscapes around Lake Baikal: the taiga, the mountains, and even the steppes.

A nature documentary is a special genre. It has its own rules, principles, and many special technical secrets. In motion pictures the natural landscape is usually used as a backdrop for the action in the movie, but in our case the landscapes themselves are in the center of attention. We aimed to present the natural wealth of Baikal as faithfully and accurately as we could, and employed all the necessary state-of-the-art equipment.

The purpose of the documentary is to open up the potential of Baikal's protected areas and promote special types of tourism, including ecotourism and educational tourism. The currently existing possibilities for immersion in the world of wild nature allows tourists to indulge in the sights of protected nature areas without causing even minimal harm. We attempted to reflect the beauty and splendor of Baikal's nature, and show audiences the possible routes they can later take on their own and make breathtaking discoveries.

The film crew and the producers of the documentary would like to take this opportunity to express their gratitude to the project's partners: the UNDP project office, the Baikal

> Institute of Nature Management of the Siberian Branch of the Russian Academy of Sciences, the Fund for Protection of Lake Baikal, the management and employees of all SPNAs where the documentary was filmed. Without their support and active participation it would have been impossible to produce the documentary. For over three months we worked side by side with extremely professional and truly patriotic people who love their land and Russia.

> We hope the documentary will be favorably received by audiences in the large multinational and friendly world of Baikal.

ATLAS OF CULTURE BAIKAL PROJECT www.atlas-culture.ru/

- bajkalskij, documentaries:Baikal Without Boundaries,
- 2014, Russia Mongolia;
 The Precious Necklace of Baikal, 2015, Russia;
- Trans-Eurasian Flight: Leman — Baikal , 2015, Russia.

The World of Baikal Magazine turns 10



PRESIDENT OF THE RUSSIAN FEDERATION



he World of Baikal stands for so many things that it is even hard to imagine. The past 10 years have been filled with exciting and interesting work carried out by members of the editorial team, friends, and partners with

whose help we have been publishing the magazine. The project to launch the World of Baikal science magazine proposed by the then Director of the Baikal Institute of Nature Management Arnold Tulokhonov and the Minister of Natural Resources Peter Noskov was later seamlessly expanded, and the ECOS Publishing House was founded. That decision made it possible to implement other significant environmental projects and publish the Baikal. Nature and People Encyclopedia.

The very fact that the World of Baikal Magazine came into existence in 2004 was a confirmation of the fact that the government and scientists realized the importance of preserving Lake Baikal. Initially, our purpose was to inform and educate. But in our age the authorities cannot solve environmental problems unless the public is made aware of the issues at stake, understands its responsibility, and personally takes the initiative to change the situation for the better. This is a world for us and our descendants to live in.

In our modern world there are protected areas of land, the specially protected nature areas that have a special nature conservation, scientific, aesthetic, recreational, and therapeutic effect on our life. Such areas include nature reserves, national parks, and nature sanctuaries with federal status which are covered in more detail in the special edition of the World of Baikal Magazine. We aimed to present each of these areas in a way to make even the most seasoned tourists want to come to Buryatia and the shores of Lake Baikal.

"Tourists and travelers arriving at Lake Baikal with the hope of seeing all the destinations often hear the words: 'That territory is a natural reserve. You cannot visit without a permit!' After hearing this, many visitors are taken aback, and do not want to continue the journey. Hardly anyone knows that in fact apart from preserving nature in its pristine state and beauty and all of Baikal's unique flora and fauna, the reserve offers all the conditions for organized tours with comfortable accommodations for visitors. The protected territories of the Baikal region provide an opportunity to spend time actively exploring the unique natural sites, hear interesting information about nature reserves and parks from the local guides, and make a personal contribution to protecting these magical Siberian nature sites untouched by civilization," explain the tour guides of the Baikalsky Biosphere Reserve.

One has only to agree with this. It is true that educational tourism is a powerful means of instilling a love for nature. Only by exploring the natural world of our own country will we learn to protect it.

> **Ludmila Shishmareva,** *Editor-in-Chief, the World of Baikal Magazine*



Barguzinsky State Nature Biosphere Reserve

FOUNDED: 1916. AREA: 374,346 ha.

Page 10



FOUNDED: 1986. AREA: 269,000 ha.

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IRKUTSK

Republic of Buryatia NATURE RESERVES • PARKS • NATURE SANCTUARIES



FOUNDED: 1976. **AREA:** 109,200 ha.

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Dzherginsky State Nature Reserve

> FOUNDED: 1992. AREA: 238,594 ha.

> > Page 46



Tunkinsky National Park

FOUNDED: 1991. AREA: 1,183,622 ha.

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Baikalsky State Nature Biosphere Reserve

> FOUNDED: 1969. AREA: 167,871 ha.

> > Page 28

$Barguzinsky \begin{array}{l} {}^{State \ Nature} \\ {}^{Biosphere \ Reserve} \end{array}$







The Barguzinsky Nature Reserve is one of the oldest protected areas in Russia which played a crucial role in saving a valuable species of furbearing animal – the Barguzin sable - from extinction. The Nature Reserve obtained its protected status back in the days of Imperial Russia. The nature reserve is widely regarded as a benchmark of quality and purity with respect to its pristine mountainous regions and boreal forests located in the Baikal region. Its century-long history is imbued with the heroics and pioneer spirit of explorers totally devoted to science and their home country, sharing a love of this land and its nature.





ts territory is located in a remote part of the region. For this reason there is limited anthropogenic influence, and the effect of pollution on air, soil, and surface snow quality is one of the lowest in our country (according to the

data provided by integrated baseline monitoring stations). This mysterious natural landmark attracts all the more attention from seasoned tourists.

The Barguzinsky Nature Reserve is located on the northeastern shore of Lake Baikal and on the western slopes of the central part of the Barguzinsky Mountain Range stretching from the coast of Lake Baikal (456 m above sea level) to the main peak of the Braguzinsky Mountain Range (2652 m above sea level). The reserve has a nucleus, a biosphere field testing site, and a three-kilometer wide strip of water along Baikal's shoreline adjacent to the reserve. The northern edge of the reserve is located within 100 kilometers of Nizhneangarsk, the district center, and the same distance separates Ust-Barguzin Settlement and the southern rim of the reserve.

One of the most remote nature museums of Russia is found in Davsha Settlement on the shore of Lake Baikal. For many years it has been the Central Lodge of the Reserve.





Barguzinsky State Nature Biosphere Reserve

FOUNDED: 1916.

AREA: 374,346 ha. ADDRESS: Republic of Buryatia, Severobaikalsky District. As of 2012, the nature reserve has been managed by the Federal Budgetary Institution "Joint Administration of the Barguzinsky State Nature Biosphere Reserve and the Zabaikalsky National Park" (Zapovednoye Podlemorye Federal Budgetary Institution) WEBSITE: zapovednoe-podlemorye.ru







↑ Lake Nizhneye Shumilikhinskoye

Reference map

Within the boundaries of the reserve the Barguzinsky Mountain Range is a majestic alpine string of pointed peaks with spiked crests, with a range of hanging valleys and snow patches. The trough valley is one of the main elements of the landscape closed off on one end by a huge cirque. The slopes have suffered from massive erosion and there are numerous tributary hanging valleys. There are no glaciers on the Barguzinsky Mountain Range; however, the mass of the snow that accumulates in some parts of the high mountain elevations does not have enough time to melt by the time the new winter season sets in.

The central part of the ridge is dissected by an intricate system of deep valleys with comparatively narrow cliffed divides. The slopes of the ridges are very steep. The mediumaltitude hills range from 600 to 1250 m and cover about 30% of the entire territory of the reserve. The main ridge with a number of offshoots gently slopes to the west in the direction of Lake Baikal. Some of the offshoots approach the lake and even form headlands which are either steep or come down to the shore in ledges.

The rivers and rivulets of the reserve rise from the slopes of the Barguzinsky Mountain Range forming a braided network of channels. These are typically mountainous streams with strong currents and rocky riverbeds often breaking through deep ravines with steep cliff walls. The character of the rivers changes dramatically once they reach the lowlands where they slow down and gently flow through the valleys. Outcrops of more resistant rock in the riverbed cause the formation of rapids. The largest rivers of the reserve are the Urbikan, Kabanya, Yezovka, Bolshaya, Davsha, Tarkulik, Sosnovka, and the Kudaldy Rivers.

There are 523 lakes within the territory of the nature reserve covering a total area of 2004 hectares. The largest are Lake Losinoye and the Khariuzovy Lakes.



Wild garlic growing in the upper reaches of the Shumilikha River



↑ Craniospermum subfloccosum Krylov





↑ The upper reaches of the Shumilikha River

THE MOUNTAIN LAKES OF THE SHUMILIKHA RIVER VALLEY

There are three picturesque lakes in the Shumilikha River Valley. The first one is a small moraine-dammed lake located just six kilometers from Baikal with crystal clear water and round boulders sticking out of the water, and also a small islet in the very middle. The second moraine-dammed lake with an open shoreline lies some 10 km from Lake Baikal and is connected through a small flow-through body of water with the third lake which resembles a horseshoe. It is surrounded by slopes of talus deposits with occasional flat areas along the shoreline. The fourth Shumilikha Lake is located even higher along the slope in a deep glacial pocket which is almost completely surrounded by steep cliffs.



↑ Estuary of the Shumilikha River near a local lodge

WATERFALL ON THE SHUMILIKHA RIVER

Ten kilometers from Lake Baikal at an altitude of 1000 m above sea level the Shumilikha River is dammed by a high rock bar, falling from which the river forms a picturesque waterfall, a popular tourist destination. The water comes gushing down with a rumble amplified by the mountain echo. Then the stream flows down along exquisite and picturesque curly hills polished by the glacial ice leaving behind clouds of suspended water particles that shine in the sun producing a beautiful rainbow. The waterfall is one of the seven natural wonders of Buryatia.

CAPE VALUKAN

Cape Valukan is located some seven kilometers south of Davsha Settlement and protrudes into Lake Baikal. It is part of an offshoot of the Barguzinsky Mountain Range. As a result of intensive erosion, the shoreline on Cape Valukan presents a series of coves separated by flat rocky headlands.

THE YUZHNY BIRIKAN RIVER

The Yuzhny Birikan River falls into Lake Baikal in the southern part of Davsha Bay. The river rises in the offshoots of the Barguzinsky Mountain Range and has a length of about 15 km. The terrain near the estuary is quite diverse and includes wetland vegetation and flora representative of the belt area around the barrens, like, for instance, dwarf pine thickets.

Among the brushwood thickets located on the Baikal raised shoreline it is easy to find bearberry, juniper, and



prairieweed. Brown bears often visit these areas. Shorebirds and waterfowl may be observed in the river's estuary.

The territory of the reserve includes a three-kilometerwide strip of water with a total surface area of 15,000 ha along Baikal's protected shoreline. Average depths in the protected water zone of Lake Baikal are around 30 m with maximum depths not exceeding 200 m.

There are thermal springs originating along tectonic fault lines in the valleys of the Yezovka, Bolshaya, Talamush, and Davsha Rivers. Water temperatures often rise above 70°C.

FLORA

The reserve is located in several altitudinal belts that form the "humid Baikal" type of zonality. The predominant wood species in the forests of the Barguzinsky Reserve are cedar followed by dwarf pine, and finally coniferous trees occupying about 20% of the territory. Also frequently occurring are larch, fir, birch, and spruce.

The steep slopes of Lake Baikal are covered by the taiga where mushrooms and berries abound. Tourists have a possibility to personally appreciate all the altitudinal belts of the majestic Barguzinsky Mountain Range and the kingdom of woodland orchids.

Closer to Lake Baikal larch forests prevail; there are also cedar, pine, and birch forests with occasional moorlands and meadows. The upper limit of montane forests is represented by birch trees, fir and spruce forests with extensive areas of tall grasses and brushwood thickets.

The high-altitude belt of barrens occupies about 60% of the reserve's territory. Most of this area is covered by alpine meadows – a striking multicolor combination of anemones, cranesbills, globeflowers, and columbines – and almost impassible dwarf pine and birch thickets (dwarf birches and willow shrubs). Cliffs with almost no life forms and bare talus deposits cover significant territories.

The following number of plant species are reported to occur in the Barguzinsky Reserve: 878 vascular plant species, 212 species of lichens, 173 species of fungi, 242 species of mosses, and 1241 species of algae. Thirtyone species of vascular plants and nine species of lichens are included in the Red Books of threatened species (IUCN Red List, the Red Book of Russia, and the Red Book of Buryatia).



 Siberia dwarf pine thicket in the upper reaches of the Shumilikha River



Moccasin flower



Brown bear



Spotted nutcracker



↑ Sable



Flock of mergansers



Muskrat

FAUNA

The fauna of the Barguzinsky Reserve is that of a typical boreal forest with certain distinctive features caused by mountainous terrain and proximity to Lake Baikal: **41 species of mammals, 281 bird species, six species of reptiles, three species of amphibians, 46 fish species, and over 800 species of insects discovered so far.**

Of the 41 species of mammals, over 80% typically inhabit the forests. The taiga is home to such species as the squirrel, flying squirrel, Laxmann's shrew, and least shrew; also occurring are musk deer, sable, Siberian weasel, wood mouse, chipmunk, wood lemming, red deer (wapiti), and also wolf, fox, weasel, stoat, wolverine, white hare, lynx, brown bear, elk, Northern red-backed vole, and tundra vole. In the mountainous tundra the following species may be found: alpine pika, black-capped marmot, large-eared vole, and reindeer. The nesting birds include the black-billed capercaillie, hazel grouse, oriental cuckoo, Ural owl, great gray owl, boreal owl, Eurasian pygmy owl, black woodpecker, Siberian jay, spotted nutcracker, Baikal bullfinch, pine grosbeak, crossbill, whitewinged crossbill, Siberian rubythroat, red-flanked bluetail, Siberian accentor, and others.

One of the distinguishing features of Lake Baikal's northeastern shore is that there are not too many amphibians and reptiles among the species inhabiting this area. The amphibians are represented by the Siberian salamander, moor frog, and the Siberian wood frog; and the reptiles, Gloydius halys, Pallas's coluber, grass snake, sand lizard, and viviparous lizard.

In the protected water zone of Lake Baikal we may find the endemic ringed seal, the symbol of Lake Baikal. The important commercial fish species inhabiting the waters of the nature reserve include the grayling, Arctic cisco, lenok, taimen, whitefish, and also burbot, pike, perch, and Siberian roach. The nature reserve plays an important role in preserving the biodiversity of the region: two bird species – the white-tailed eagle and the black stork – nest in the protected area and have been listed in the IUCN Red List of Threatened Species.



↑ Gull chick



TOURS

At present the staff of the nature reserve is devoting a great deal of attention to developing organized educational tourism and setting up convenient locations for observing animals in their natural habitat. Two areas with eco-trails are already available – near the Davsha River and in the Shumilikha Valley.

The Shumilikha eco-trail cuts through the Shumilikha River and valley to the place where the river rises at the southern rim of the Barguzinsky Reserve. It is one of the most beautiful trails in the Baikal region, and the 12-kilometer hike (one way) will take you up to the headwaters region of the river and then back down to where you started – all in one day. The elevation is 1000 meters, but the hardest part of the trek is during the first five kilometers of the way.

The highlights of the tour include the estuary of the Shumilikha River – a trek through boreal forests – Nizhneye Lake – waterfall on the Shumilikha – the upper reaches of the Shumilikha River – and back taking the same route. The trail cuts through all the altitudinal belts of the Barguzinsky Reserve, from the dark coniferous forests to the alpine meadows and firn fields.



↑ Upper lakes in the Shumilikha River Valley

↑ Shumilikha trail



The estuary of the Shumilikha River which empties into Sosnovka Bay abounds in sand dunes overgrown with dwarf pine thickets and lichens. From the shoreline the trail leads uphill entering a forest of cedar, pine, fir, and larch. Below the trees you may find a carpet of lingonberry and bilberry shrubs and Siberian tea. You may run across tracks made by sable, deer, and bear. The trail passes by a picturesque lake of moraine origin.

The Shumilikha is what you may call an open book of nature which has preserved the marks of the last glaciation; it has moraines, rock deposits, glacial drift accumulated when the glaciers were advancing; lakes, mountain cirques, and rock bars. One of the rock bars is a horizontal ledge on a cliff which completely blocks the river valley. A stream tumbles down a 20-meter elevation – that is the famous Shumilikha waterfall.

A trail leads up to the steep ledge from which a magnificent view opens up of the upper part of the Shumilikha Valley, its lakes, and the snow-covered cirque, a natural semicircular basin.

Picturesque alpine meadows can be found above the waterfall. The area is inhabited by willow ptarmigan, Güldenstädt's redstart, Altai accentor, and Alpine accentor. In the upper reaches of the river among the stones and barrens you may find the blackcapped marmot.



WHO GAVE THE RIVERS AND SPRINGS THEIR NAMES?

It was common to give names to rivers and rivulets around Lake Baikal after the animals that used to live in these areas or after the forests. Take, for instance, the Kabanya (Boar) River that falls into Lake Baikal. In the past there were so many wild boars in the vicinity that it was at times even dangerous to walk through these parts. Quite close to the Kabanya River, there is the Sosnovka (Pine Tree) River, and as might be expected, there is a pine forest there that is so dense that at times you cannot even see the treetops. The Yazovka spring is located midway between the Kabanya and Sosnovka Rivers. When the spring season comes, there are so many ides spawning there that it seems there are more fish eggs than water in the stream. The Bolshaya Cheremshana (Large Wild Garlic) and Malaya Cheremshana (Small Wild Garlic) Rivers are located not far from Chuvyrkuisky Bay. Wild garlic abundantly grows along river banks. There used to be such a large area covered by wild garlic, that if harvested, it would have been enough for the whole of Siberia – or so the story goes.

Frolikhinsky State Nature Sanctuary with federal status



he Frolikhinsky Sanctuary is located on the northeastern shore of Lake Baikal, 40 km from Nizhneangarsk, the district center. Nizhneangarsk itself is 45 km from Severobaikalsk. The sanctuary has been included in

the Central Environmental Zone of Lake Baikal and is part of the Lake Baikal World Natural Heritage Site. It was established to preserve and restore valuable, rare, and threatened wildlife species and their habitats.

The territory is typically mountainous terrain and includes the northern edge of the Barguzinsky Mountain Range.

The main attraction of the sanctuary is the stunningly beautiful Lake Frolikha set against the backdrop of majestic mountain tops. Being the largest lake of the Baikal Rift Belt, it has a semi-circular form and depths of up to 80 m. The Levaya Frolikha and the Davatchanda Rivers empty into the lake from the southeast, and the Pravaya Frolikha (Nerunda) River empties from the northeast. There is also a score of smaller rivers and rivulets falling into the lake. Many of them cut through the alluvial deposits forming deep ravines with steep sides. Coming upon harder rock, the streams cascade in a series of impressive waterfalls. There is a shallow bay stretching for about 1.5 km in the western part of the lake, and that is where the Frolikha River rises. It later falls into Lake Baikal's Gulf of Frolikha. Situated in close proximity to Medvezhya Mountain, Lake Frolikha is a unique and picturesque location, the trail leading to it is not demanding and the site may be visited by tourists of any age. Ayaya and Frolikha are two very attractive bays on the shore of Lake Baikal.

In the subbarren zone of the reserve there are numerous lakes of glacial origin with crystal clear ice-cold water. Their total surface space is about 5,000 ha.

FLORA

The dense coniferous forests of the taiga make the air crystal clear. You may get dizzy from the smells of Dahurian larch, pine, and fir. Cedar, the king of Siberian forests, is also quite common, as well as spruce, aspen, and birch. Siberian dwarf pine grows in the understory and in thickets, and lichen heaths dominate altitudes exceeding 1600 m above sea level.

Frolikhinsky State Nature Sanctuary with federal status

FOUNDED: 1976.

AREA: 109,200 ha. ADDRESS: Republic of Buryatia, Severobaikalsky District. As of 2012, the sanctuary has been managed by the Federal Budgetary Institution "Joint Administration of the Barguzinsky State Nature Biosphere Reserve and the Zabaikalsky National Park" (Zapovednoye Podlemorye Federal Budgetary Institution) WEBSITE: zapovednoe-podlemorye.ru





Mountaintop view of Ayaya Bay and Lake Frolikha

The following number of plant species are reported to occur in the sanctuary: 792 species of vascular plants, 216 species of mosses, 154 species of fungi, and 81 species of lichens.

FAUNA

The old-growth taiga supports a number of animals: elk, wapiti, musk deer, reindeer, sable, stoat, squirrel, fox, wolverine, wolf, hare, and bear. The nesting birds include white-tailed eagle, osprey, mallard, Eurasian teal, gadwall, Eurasian wigeon, northern pintail, goldeneye, smew, merganser, whooper swan, also occurring are western capercaillie, hazel grouse, spotted nutcracker, raven, and other types of birds. The white-tailed eagle has been listed in the IUCN Red List. The Red Book of Russia includes: black stork, osprey, golden eagle, white-tailed eagle, gyrfalcon, peregrine falcon, Caspian tern, Eurasian eagle-owl, and black-capped marmot.

Many species of fish inhabit the lakes and rivers of the sanctuary, including Brachymystax lenok, grayling, pike, perch, and others; one of the primary protected fish species are the relic sub-species of Arctic char – Frolikh char and taimen – the species listed in the Red Book of the Russian Federation and the Republic of Buryatia. Angling in water basins of the sanctuary is prohibited.

Reported to occur within the territory of the sanctuary are 38 species of mammals, 179 bird species, two species of reptiles, three species of amphibians, and 11 fish species.





Reference map

The shoreline with its half-immersed rocks adjacent to headlands are ideal for the local communities of ringed seal which stay here during the summer season, especially near Nemnyanda, Frolov, Lakanda and Shandaki capes. These are the northernmost rookeries of ringed seal in Lake Baikal.

The Frolikhinsky underwater hydrothermal methane springs with water temperatures of 16°C are located at the bottom of the canyon in Ayaya Bay some two kilometers from the shoreline. The springs present special interest from the point of view of their biological influence. Large communities of amphipods (*Leptostenus*) were reported to populate the seep which are extremely rare in other parts of Lake Baikal, and also larvae of chironomids (*Sergentia flavodentata*).

TOURS

The Frolikha Lake Eco-Trail is a one-day tourist trekking tour. The length of the trail is six kilometers (12 kilometers both ways). You may reach the start of the trail in Ayaya Bay by boat or on foot. The trail is not demanding, there are a couple of small elevations along the way, and in a number of places the trail cuts through boulder fields. The trail leads through a predominantly larch-covered taiga with occasional pines and cedars, and dwarf pine in the understory. There are boardwalks in the marshy parts of the trail.

The Frolikhinsky Adventure Eco-Trail is a 62-kilometer journey. You may only reach the start of the trail by boat since it is located in the estuary of the Verkhnyaya Angara River. A boat should also be arranged for your return trip once the journey is over. The trail leads along Lake Baikal's shoreline. The journey may be split into several sections. The estuary of the Verkhnyaya Angara River - the Tokshaki site. It is an easy hike along Dagary Bay through some scenic locations; there is a magnificent beach along the way. Bird lovers will not be disappointed: the proximity of wetlands of the Angarsky Gulf contributes to a diverse bird fauna. The next stage is Tokshaki Erikshakan Cape. Two rivers have to be crossed - the Tokshaki and the Birokan. Then Cape Erikshakan – Frolikha Bay. A stopover at Cape Nemnyanka is advised. Then on to Frolikha Bay - Ayaya Bay and Cape Lakanda which is a difficult stage intended for seasoned tourists. A visit to a fishing base on Cape Frolov is also included. Finally, we take a hike from Ayaya Bay to the Tukalaragdy Gulf (with a large sandy beach), then to Khakusy, and finally make a river crossing at the Biraya River.

Zabaikalsky National Park







Zabaikalsky National Park is a landmark of Lake Baikal, a place to experience pristine nature at its finest. It is hard to imagine such diversity of landscapes, combination of well-preserved unique and picturesque natural sites and rich wildlife with wide opportunities for recreational and sport tourism and angling.





he Zabaikalsky National Park is positioned in the central part of Lake Baikal in a picturesque location and occupies a relatively small and easy to access territory. It may seem that all the wonders of the sea-lake by some

strange coincidence have been collected in a single spot. Writers and poets have extolled the virtues of the national park which they named the Chivyrkuisky Fairytale or the Crown Jewel of Baikal. This is the renowned Podlemorye area of Baikal with its snow-covered pointed mountain peaks, fast-flowing rivers, high-altitude tundra regions and lakes, marble cliffs, picturesque shorelines, numerous bays, magnificent beaches, and thermal springs.

The terrain is mountainous. The main landmarks include a major mountain belt cutting through the territory of the park – the Barguzinsky Mountain Range, the Svyatoi Nos Peninsula, the endless marshes, the blue lakes of the Chivyrkuisky Isthmus, and the unique Ushkany Islands.





↑ Reference map

RIVERS AND LAKES

Numerous small rivers flow through the territory of the national park, and they all fall into Lake Baikal. The largest are the Bolshaya Cheremshana, Malaya Cheremshana, and the Maly Chivyrkui Rivers. Lake Arangatui is the largest lake of the park. It is located on the Chivyrkuisky Isthmus, and the Istok River connects it to Chivyrkuisky Bay.

Lake Bormashovoye is noted for its mineral water springs. In addition, the park has over two dozen mountain lakes. The largest is Lake Ladokhinskoye. There are unique thermal springs on the territory of the park – the Zmeyevy, Nechaevsky, and Kulinye springs.

The territory of the national park includes about 38,800 ha of Lake Baikal's water surface (parts of the Barguzinsky and Chivyrkuisky Bays). A narrow neck of

land formed by deposits of the Barguzin and Maly Chivyrkui Rivers divides the bays.

FLORA

The Zabaikalsky National Park contains over 10,000 hectares of parkland supporting especially important plant communities. These include pine, cedar, and fir old-growth forests dominated by trees over 200 years old. The flora includes many endemic, rare, and relic plants. Of special interest is the chosenia, a rare plant mostly found at the southern edge of the park.

According to preliminary estimates, the flora of the park includes 977 taxa of vascular plants. Listed in the Red Books of Buryatia and Russia are the large-flowered lady'sslipper *Cypripedium*, *Deschampsia turczaninowii*, *Borodinia*



↑ Craniospermum subfloccosum Krylov

🛧 Gull's nest

↑ Caltha



macrophylla, golden root, fairy-slipper orchid Calypso bulbosa, tree lungwort Lobaria pulmonaria, and others.

FAUNA

Typical Siberian animals occur in the forests of the Zabaikalsky National Park: bear, wolf, fox, lynx, sable, otter, wolverine, elk, musk deer, squirrel, chipmunk, muskrat, and white hare. Common birds include blackbilled capercaillie, hazel grouse, mallard, European herring gull, western marsh harrier, and many others. A total of 303 species of terrestrial vertebrates have been reported to occur on the territory of the national park, including three species of amphibians, three species of reptiles, 249 bird species and 48 species of mammals.

The waters within the territory of the park are populated by the Baikal sturgeon listed in the Red Book of Russia. The



Great cormorant on nest

moor frog is a rare amphibian. Grass snake, a relic species for Baikal whose population is diminishing, occurs near the Zmeyevy thermal springs.

Of the bird species listed in the Red Book of Russia, 19 occur in the park: white-tailed eagle, osprey, eagle-owl, black stork, hooded crane, and others. Great cormorants which at one point left Lake Baikal due to anthropogenic influences have returned, and the population of this bird has been restored to its original figures.

Of the mammals of Baikal region, the black-capped marmot occurring in alpine meadows is listed in the Red Book of Russia. Colonies of this interesting animal inhabit the peaks of the Barguzinsky Mountain Range. The national park's Ushkany Islands are famous for their rookeries of ringed seal, the largest on Lake Baikal. In the summer season hundreds of animals lie on the stone shoreline of the islands. In certain years their numbers were reported to reach several thousand.

BARGUZINSKY BAY

It is the largest bay in the lake. A sandy beach stretches for kilometers along the shoreline – it is a 26-kilometer levee that starts from the Kholodyanki landmark and continues to the Glinka area. By late July water temperatures inside the bay close to the shoreline reach $20 - 21^{\circ}$ C; however, due to occasional strong winds from Baikal, currents of cold water may enter the bay and push the warmer waters closer to the shoreline.

CHIVYRKUISKY BAY

The bay is one of the most interesting, attractive, and visited sites in the national park. It is shallow, and water temperatures may reach 22 - 24 °C. The bay is the longest extension of water into land on Lake Baikal, and the most scenic. Sand beaches, islands, majestic capes, thermal springs, dwarf pine thickets, and bird colonies attract many tourists. The shoreline is jagged with a number of small sandy coves well protected from bay winds. It is a popular fishing destination both in summer and winter.

ZMEYEVAYA BAY AND THERMAL SPRINGS

Popular thermal springs are located right on the shore of the bay. The bay obtained its name from the large populations of grass snake and Gloydius halys inhabiting the area. The current population of the grass snake is close to extinction, and the remaining reptiles survive only because of the special microclimate near the thermal springs. If you do not manage to come across a grass snake, you will definitely find their shed skins parched in the sun. The water temperature in the springs is around $40 - 45^{\circ}$ C. The sulfur water of the springs has medicinal properties – it is good for treating low back pain and diseases of the locomotor system. Sulfur baths may be taken in wood-lined basins located in places where the water seeps out onto the surface.

ISLANDS OF CHIVYRKUISKY BAY

It is impossible to imagine Chivyrkuisky Bay without its stunning fairytale-like islands with massive steep cliffs





overgrown with larches of the most incredible form and caves with their noisy bird rookeries.

There are a total of seven islands – Baklany (Shimai), Bolshoi Kyltygei (Lokhmaty), Maly Kyltygei (Goly), Yeleny, Okunevy Kamushek (Pokoinitsky), Bely Kamen (Omulevy Kameshek, also Bezymyanny Kamen), and Kopyoshka Island. It is prohibited to take unattended trips to the islands without an accompanying national park guide, and it is necessary to obtain a permit from the park's administration. The procedure has been introduced to protect vulnerable natural environment systems and preserve the unique flora and fauna of the islands in their pristine state.

USHKANY ISLANDS

Ushkany Archipelago consists of four islands in the central part of Lake Baikal – Bolshoi (Large) Island and three smaller islands – Tonky, Krugly, and Dolgy Islands. Rocky cliffed coasts, high-standing larches and pines, green shrubs of *Rhododendron dauricum* covered with clusters of violet flowers, occasional dwarf birches, and numerous

anthills – those are the familiar sights of the Ushkany Islands. It is a landmark, a beautiful place with unique nature. The islands have become popular because of the ringed seals that set up their rookeries on the islands. The flora and fauna are pristine and unique. The islands have an interesting geological history; the shoreline is mostly composed of marble and other geological material. During the summer season tourists are offered a tour called the Rookeries of Baikal's Ringed Seal Eco-Trail which takes nature lovers to the islands and the colonies of ringed seal. A permit from the park's administration is necessary to visit the islands and take the eco-trail.

SVYATOI NOS PENINSULA

The peninsula is an extensive mountainous area jutting into Lake Baikal with elevations of up to 1877 m above sea level. Many consider it to be the most beautiful and popular part of the national park. There is a mountainous plateau at the top from which one can view the complete tantalizing panorama of the surroundings. The peninsula is connected







to the "mainland" by the swampy Chivyrkuisky Isthmus which hardly rises above surface water level. Thousands of years ago the Svyatoi Nos was an island.

LAKE ARANGATUI

With a surface area of 54.2 sq.km, it is the largest lake within the territory of the national park. The lake and its bays are inhabited by dace, perch, pike, and other types of fish. Many rare bird species nest on its shores: whooper swan, blackthroated loon, Eurasian curlew, and others.

BORMASHOVOYE LAKES

The three Bormashovoye Lakes – Sredneye, Maloye, and Svetloye – are brackish lakes located side by side on the Chivyrkuisky Isthmus, just four kilometers from Ust-Barguzin Settlement. Maximum depths are around three meters. The banks of Lake Bormashovoye are predominantly sandy. In the summer the water warms up to comfortable levels attracting numerous visitors. The lake's water and the muds from its bed (sapropelic muds) have long been used to treat skin diseases. Their medicinal properties are very similar to those of muds offered at resorts in the Baltics.

CHIVYRKUISKY ISTHMUS

The Chivyrkuisky Isthmus is one of the three nesting areas of Baikal's waterfowl and birds of prey. Long ago there was a channel in these parts that separated the Svyatoi Nos from the mainland. For thousands of years the Barguzin River transported alluvial sediments. As a result, an extensive wetland region was formed with unusual alternating sand bars and coastal marshes. On a small area adjoining the lake visitors may find species of mountainous and steppe vegetation growing side by side. For instance, bird cherry in this location is a creeping bush, and even common pines creep and stay close to the surface; the crowns of many pines and cedars resemble a flag.

Sand levees stretch for many kilometers along the banks of the isthmus. The Myagkaya Karga is a popular beach where visitors love to spend their time. Extending for many kilometers, the beach of exceptionally clean sand runs along the entire shoreline of the bay. A road leading to the Svyatoi Nos has been built through the isthmus.





↑ The Endurance Trail Route to the top of the Svyatoi Nos

TOURS

ROUTE TO CLEAN BAIKAL is one of the most famous trekking trails in Buryatia. The total length of the route is 54 km. Average trekking time is 4 – 5 days.

The trail leads through scenic valleys of the Gremyachaya and Bolshoi Chivyrkui Rivers, mountainous tundra areas of the Barguzinsky Mountain Range, boreal forests, and dense thickets. The trail is moderately difficult and is equipped with eight resting places with campfires, tables, and tent platforms.

ZMEYEVAYA BAY TRAIL is an eco-trail in Chivyrkuisky Bay leading through picturesque slopes and coves of the Svyatoi Nos Peninsula. The length of the trail is 18 km.

The trail is moderately difficult and requires one or two days. The main tourist attractions are the Zmeyevaya thermal springs, the Monakhovo and Kresty beaches, the Kurbulik and Katun fishermen's settlements, and Okunevaya and Sorozhya Bays. There are resting places on the trail with campfires and tent platforms. Monakhovo, Zmeyevaya and Kurbulik lodges are also available to tourists.

THE ROOKERIES OF BAIKAL'S RINGED SEAL is a short

eco-trail just 350 m long. It is located on Tonky Island of Ushkany Archipelago and leads to a viewing platform close to one of the largest ringed seal rookeries on Lake Baikal. It is a unique location affording a high probability of uninterrupted views of ringed seals in their natural habitat from close range. There is a check point and an information center maintained by the Zapovednoye Podlemorye regulator, and each group of tourists has to be accompanied by a guide.

THE ENDURANCE TRAIL ROUTE leads to the top of the Svyatoi Nos Peninsula. It is a "very difficult" class trail for tourists who are physically fit. The average ascent takes four to six hours; descent, three to five hours.

The first third of the ascent is a steep climb through a forest to the Cross viewing platform. The trail is challenging, but at the same time very interesting, as you will have a chance to cross different landscapes, visit real mountainous tundra, and touch the snow in summer. On top of the plateau visitors can appreciate views of Chivyrkuisky and Barguzinsky Bays, and the Chivyrkuisky Isthmus with Lake Arangatui.



↑ Crossing at the Bolshoi Chivyrkui River



↑ After the crossing the trail leads mostly along the Bolshoi Chivyrkui River



Trekking to a mountain pass through the Barguzinsky Mountain Range, 1600 m above sea level



↑ View of Barguzin Village from a plateau on the Barguzin Mountain Range



↑ New viewing platform on Tonky Island for watching ringed seals



ZAPOVEDNOE PODLEMORYE

Address: 71, Lenina St., Ust-Barguzin Settlement, Barguzinsky District, Republic of Buryatia, 671623, Russia, (administration) Tel./Fax: +7 (30131) 91-5-75 (Director) +7 (30131) 91-5-78 (general information) E-mail: zabaikpark@mail.ru Official website: www.zapovednoe-podlemorye.ru **GETTING THERE:**

You may take a minibus taxi from Ulan-Ude to the central administrative and laboratory building of the Zapovednoye Podlemorye company located in Ust-Barguzin (270 km). Minitaxi bus service to Ust-Barguzin is available each day at 7:00 am (boarding from 6:00 am) and 3:00 pm (boarding from 2:00 pm) from the Yuzhny bus terminal in Ulan-Ude.

Baikalsky State Nature Biosphere Reserve



In 1986 the reserve was included in the World Network of Biosphere Reserves. In 1996 as part of the Lake Baikal protected area it was declared a UNESCO World Heritage Site.





he territory of the reserve is located relatively close to Irkutsk and Ulan-Ude. The reserve's Central Lodge is strategically positioned near a federal highway and the Tankhoi train station

of the East Siberian Railway line, just several yards from sacred Lake Baikal. The unique microclimate prevalent in the region is conducive to long walks through pristine nature with its beautiful mountain landscapes and boreal forests filled with the chatter of birds. You can trek along mysterious animal trails, enjoy the scenic surroundings spiced with the beauty of fast-flowing rivers, water springs, and waterfalls with crystal clear waters, and breathe the crisp air of cedar forests with their heady scents. Visiting the reserve will be an unforgettable experience; you will learn many interesting and useful facts about nature in and around Lake Baikal. In addition to ensuring the protection of the reserve itself, the Baikalsky Nature Reserve Federal



Budgetary Institution manages two nature sanctuaries with federal status:

- Kabansky State Nature Sanctuary was assigned to the company in 1985 and is located in the delta of the Selenga River. It is included in the list of wetlands of international importance as defined by the Ramsar Convention. The Selenga delta wetlands are a key ornithological area in Asia;
- Altacheisky Nature Sanctuary was assigned to the company in 2011 and is located on the western slopes of the Zagansky Mountain Range in Mukhorshibirsky District of Buryatia.





Baikalsky State Nature Biosphere Reserve

FOUNDED: 1969.

AREA: 167,871 ha; the total length of its borders is over 250 km. A protection zone about 0.5–4.0 km wide surrounds the reserve.

ADDRESS:

The Baikalsky reserve occupies the central part of the Khamar-Daban Mountain Range that stretches along the southern shoreline of Lake Baikal. The northern part of the reserve occupies part of Kabansky District of Buryatia. The Central Lodge of the reserve is also located here in Tankhoi Settlement.

The southern part of the reserve lies in the Dzhidinsky and Selenginsky Districts of Buryatia. Its northern border runs along the Lake Baikal shoreline at times approaching the lake. In the south, west, and east the border generally follows the valleys of such mountain rivers as the Temnik, Vydrinaya, Verkhnyaya Khandagaita, and Mishikha. All rivers flowing through the territory of the reserve fall into Lake Baikal.



GETTING THERE

The administrative building of Baikalsky reserve is situated in Tankhoi Settlement in Kabansky District of Buryatia and is the place where most of the learning routes begin. It is conveniently located near the M55 Baikal Federal Highway and the train station. It is easy to reach the Central Lodge of the Baikalsky Reserve both from Irkutsk and Ulan-Ude.

The distance from Irkutsk to Tankhoi is 220 km, and from Ulan-Ude, the capital of Buryatia, to Tankhoi, 230 km. There is an information board in the center of the town and close to the federal highway giving directions on how to reach the reserve's Central Lodge.

Two hundred forty-two bird species and 51 species of mammals inhabit the reserve, including 67 animal species that have been listed in the Red Book of Buryatia (2013) and 21 species, in the Red Book of the Russian Federation (2001).

The most commonly occurring animal species in the reserve are brown bear and sable, less common are lynx, wolf, and wolverine. Of the ungulates there are red deer, elk, Siberian roe deer, musk deer, wild boar, and a woodland species of reindeer. In the barrens you may find rock ptarmigan, and in the river valleys such tundra species of birds as hazel grouse and western capercaillie are common.

The vegetation includes:

- 1030 species of higher plants,
- about 700 species of lichens, and
- over 200 species of fungi;
- 11 plant species have been included in the Red Book of the Russian Federation (2008) and 45 species, in the Red Book of Buryatia (2013).

Such unique high-altitude pristine forests can be found nowhere else in the world. The mountains are the

only barrier in the way of air masses carried across Lake Baikal. That is the reason why precipitation levels on the northern side of the Khamar-Daban Mountain Range are the highest in the Baikal region, which contributes to the growth of diverse vegetation. The Khamar-Daban is a site where species are formed. It is inhabited by a local variety of blue spruce, many relic trees, and endemics.

In 2010 the Baikalsky Reserve was included in the list of model territories for the development of educational tourism in SPNAs. Employees of the Baikal Reserve developed learning tours and excursion programs for different groups of tourists. There are boardwalk trails for people with physical disabilities, and forest trails leading through cedar woods for the more physically fit, and endurance trekking tours to mountain lakes and waterfalls for seasoned tourists.

The range of available tours makes it possible to see diverse natural sites of the Baikal region, including cedar woods, mountain rivers, high altitude lakes, and real swamps. Tourists are presented with a unique opportunity to see the habitats of rare animal and bird species.



🛧 Chipmunk



↑ Bog bilberry

↑ Bouquet larkspur



WHERE TO STAY

There are several places that can accommodate guests: a small visitor center in Tankhoi Settlement, ecotourist lodges, and a field summer camp. But you have to book early, since there is a growing stream of tourists visiting the reserve every year.

1. **Central Visitor Center** is located in Tankhoi Settlement and offers year-round accommodations for tourists. Type of accommodations – hostel.

 Omulevy Eco-Tourist Lodge is located on the Dulikha River, 6 km from Tankhoi. The lodge is designed for year-round accommodations, but you should be aware that the cabins are heated by wood stoves. Type of accommodations – hostel.

3. **Mishikha Eco-Tourist Lodge** is located 30 km from the central lodge of the reserve. Lake Baikal is only a 5-minute walk away. The Baikalsky Ornithological Station for bird banding is also not far – just a 15-minute walk. Accommodations are provided from early summer until cold weather sets in in the fall.

For reservations at the visitor center and eco-tourist lodges please call: +7(30138) 93-7-41 or e-mail: baikalnr@mail.ru



Get your camera ready, and with a little patience you will make beautiful wildlife pictures. Specially equipped viewing platforms, animal salt lick locations, and watching towers lend an opportunity for visitors of the nature reserve to make the best of their stay, and get great wildlife photos. Employees of the reserve provide guided tours through the protected territory of the reserve. Their explanations and information about Baikal flora and fauna add to the fun and aesthetic enjoyment of the tour during which you can take numerous wildlife photos.

All visits to the reserve have to be approved by the reserve's administration. Irrespective of citizenship, a visitor needs to apply for a permit. The documents are issued by the reserve's administration on receipt of a prior request which may be sent in a number of ways, including through the Baikalsky Reserve website. Applications are reviewed within one working day and the decision is sent by e-mail. If you need any advice, please call the department of educational tourism of the Baikalsky Reserve at the following number: **+7 (950) 385-00-79** or send a request to one of the following e-mail addresses: **tourism@baikal-zapovednik.ru** or **baikalnr@mail.ru**.





The natural scenic beauty of this place truly startles the imagination. Everyone will find something to marvel at, and the trip will leave an indelible impression and provide positive emotions.

CENTRAL LODGE

Our journey to the Baikalsky Reserve starts at the Central Lodge. A nature museum at the lodge features exhibits related to the rich plant and animal life of the Baikalsky Reserve and the Kabansky and Altacheisky Nature Sanctuaries. There are some open-air exhibits as well: a scale model of Lake Baikal called On the Palm of Your Hand, an ethnogeographic display featuring nature protection traditions of the peoples of Zabaikalsky region, and also bird feeders and an arboretum. The local gift shop carries a wide selection of souvenirs and merchandise with the symbols of Lake Baikal and the Baikalsky Reserve, and also various handicrafts produced by local craftsmen.

The trail leading along the Osinovka River Valley starts from the Central Lodge. It is 15 km long and offers scenic

views of all the natural sites of the Khamar-Daban: cedar woods, silver fir thickets, fast-flowing rivers, waterfalls, deep lakes, and unscalable mountains. Each section of the route has a self-explanatory name quite succinctly characterizing the surroundings: Cedar Alley, Bog, Kolbina Meadow, Bear Cub Trail, Winter Cabin in the Taiga, Protected Waterfall, the Khamar-Daban Mountain Range, and the Medvezhy Ugol (Bear's Corner). Each section is representative of a unique animal and plant world and each deserves a separate tour.

CEDAR ALLEY ECO-TRAIL

The trail starts from the Central Lodge and leads through the protected zone of the reserve. This is a convenient 2.5-kilometer boardwalk trail (built in accordance with Accessible Environment standards) taking visitors through a cedar forest and on to a real bog. There are information boards along the way and a number of campsites. Tantalizing views of the Khamar-Daban Mountain Range open up from the trail.



↑ The Temnik River is the southern boundary of the reserve

↑ Western capercaillie





↑ The Medvezhy Ugol (Bear's Corner) cabin



↑ Birdwatchers at the reserve

THE WILDS OF THE KHAMAR-DABAN

At first the trail follows the Cedar Alley boardwalk to a winter cabin in the taiga. After crossing the Osinovka River, it becomes a forest trail with walkways over crystal clear mountain rivers and rivulets. Five kilometers later tourists arrive at the Zapovedny Waterfall, one of the main attractions of the trail. Water falls from an elevation of 3.5 meters. It is both a powerful and graceful sight startling the imagination with its beauty. The water falling from a ledge created a deep plunge pool below with clear and ice-cold water.

The headwaters region presents stunning views of the mountain peaks of the Khamar-Daban, one of the oldest mountain ranges of our planet. The Medvezhy Ugol cabin awaits visitors at the end of day one. After spending the night at the high-altitude lodge, tourists may trek to the mountain passes and lakes, stroll through alpine meadows and the tundra. There are a number of winter cabins on the trail, so it is possible to choose the duration of your tour taking into account overnight stops at the cabins located along the way.

The Osinovka Tankhoiskaya River Tour is part of the Great Baikal Trail which is being built with assistance from the Great Baikal Trail Interregional Public Organization and the help of volunteers.

BIRDWATCHING

Birdwatching is an extremely popular eco-tourist activity. Several birding tours specially developed for birdwatchers take tourists to the Kabansky Nature Sanctuary and the Baikalsky bird banding station located near the Mishikha River eco-tourist lodge.

The ornithological station has resumed its live trapping and bird banding activities, has acquired new equipment for observations, and allows tourists to personally see the process of bird trapping and banding making it possible to study bird migrations.

Employees of the reserve will show locations where large flocks of birds regularly occur, will point out the rare bird species, and provide useful information about live trapping and banding practices.

VOLUNTEER PROGRAMS

There are ongoing volunteer programs at the reserve with a steady stream of volunteers arriving each year. The Baikalsky Reserve is building special infrastructure to support this interest. In 2010, a permanent summer camp for volunteers was built in Tankhoi Settlement near the Central Lodge of the reserve. The camp includes dome cabins, a summer canteen, showers, public conveniences, and specially built platforms for different tents and tent houses. The camp can accommodate 54 people. Wi-Fi is available nearby at the administrative building of the reserve. Accommodation for volunteers living at the camp is free of charge. The reserve has extensive international ties, and volunteers taking part in the project will not only make a contribution to nature protection, but find new friends from Russia, USA, Slovakia, Germany, France, Korea, Spain, Austria, and other countries.





PROTECTED BAIKAL VISITOR CENTER

The Protected Baikal Visitor Center is currently being built and will soon be completed. It has beautiful lakeside views of the great Siberian lake-sea. The building will host both a newly built visitor center offering information about specially protected nature areas of Lake Baikal and the Man and Baikal Museum featuring interactive learning materials and information. State-of-the-art technologies will help internet users watch wildlife from their remote locations. Initially the building was erected in the early 20th century, and now the facility is being restored as a historic and cultural heritage site linked to research efforts conducted in and around Lake Baikal.

There are plans to build convenient accommodations with all hospitality services on two coastal areas that have been assigned to the reserve for permanent use.

By 2020, there will be seven eco-tourist lodges at the reserve and the nature sanctuaries - the Mishikha, Vydrinaya River, Omulevy, Protoka Srednyaya, Altacheisky Nature Sanctuary, Temnik, Samkhak, and also the high altitude Medvezhy Ugol cabin. Five of these are architect-designed newly-built lodges.



↑ Rhododendron aureum



↑ Baikal black grayling in the Temnik River



↑ Asia globeflower






Great cormorant



↑ Selenga River delta

KABANSKY NATURE SANCTUARY

The Kabansky Nature Sanctuary is under the protection and supervision of the Baikalsky Reserve. It is located in the Selenga River delta where the river falls into Lake Baikal on a territory of 12,255 hectares. The territory has been included in the list of wetlands of international importance under the Ramsar Convention, as a waterfowl habitat. It is also part of the Lake Baikal UNESCO World Heritage Site.

Waterfowl are the most common birds in the nature sanctuary, especially during migration and nesting periods. Nesting birds include mallard, northern pintail, northern shoveler, and common pochard. The following birds are known to congregate in bird colonies: European herring gull, black-headed gull, sterna, grebe, and grey heron. A total of 200 bird species are reported to occur in the area (within the territory of the nature sanctuary), including 37 species that are listed in the Red Book of Buryatia and 18, in the Red Book of the Russian Federation (snipe-billed godwit, swan goose, Baikal teal, relict gull, Caspian tern, and white-tailed eagle among others).

The following mammals commonly occur at the reserve: Siberian roe deer, fox, European badger, and muskrat. The fish fauna is represented by Siberian roach, perch, ide, and pike.

The Kabansky Nature Sanctuary is pure heaven for photographers. Birding tours are suitable for birdwatchers and anyone who enjoys a trip to nature and an active learning experience. The natural world of Baikal is an ideal destination.

Visitors are invited to take a boat trip through the channels of the Selenga River delta leading to Lake Baikal. Special bird watching cabins have been built in strategic locations. Muskrat often occurs along the way. You may also come across Siberian roe deer. Tours to the nature sanctuary are available from the middle of July to late August.

Do not forget to pack warm waterproof jackets, repellents from mosquitoes and midges, and high waterproof boots. The tour program may be adapted to suit individual requirements.



↑ Reference map

ALTACHEISKY NATURE SANCTUARY

The nature sanctuary is another great place for the inquisitive traveler. You can hardly find a more interesting location in Buryatia for making photos of red deer, western capercaillie, or Siberian roe deer. Employees of the sanctuary ensure protection against wild animals during such visits.

The Altacheisky Sanctuary occupies a territory of 78,373 hectares on the western slopes of the Zagansky Mountain Range in the Selenginsky Mid-Altitude Mountains. About 90% of the sanctuary is covered by forests (pine and larch). The flora is comprised of about 520 species of higher plants, including species that are rare in Buryatia and Russia: three species are listed in the Red Book of Buryatia and two in the Red Book of the Russian Federation (ghost orchid Epipogium aphyllum and Neottianthe cucullata).

Animal species common to Siberian boreal, foreststeppe, and steppe fauna occur on the territory of the sanctuary, including red deer, wolf, Siberian roe deer, wild boar, musk deer, fox, white hare, sable, western capercaillie, hazel grouse, and Daurian partridge. Listed in the Red Books are the following species: Daurian hedgehog,



tolai hare, Siberian jerboa, long-tailed hamster, corsac fox, otter, Pallas's cat, tarbagan marmot, mountain weasel, black stork, golden eagle, and great bustard.

The Red Book of the Republic of Buryatia includes corsac fox, mountain weasel, Daurian hedgehog, black stork, great bustard, Pallas's cat, and eastern imperial eagle.

It is interesting to note that a number of ancient artifacts and human dwellings were discovered on the outskirts and on the border of the sanctuary, including sacred burial sites with dolmen stone structures. It is widely believed that in ancient times these lands had a special status. It is important to preserve the natural and cultural heritage of our ancestors.



↑ A family of bears at salt lick

Red deer



1 Musk deer







↑ European badger



↑ Wild boars at a water-hole



↑ Lynx at a salt lick

Slopes of the Zagansky Mountain Range



↑ Ekhe-Nur Lake

Tunkinsky National Park







According to an ancient epic, the Tunkinsky land with its gold barrens is the ancestral homeland of the fearless Lord Gesar whose 33 warriors having cleared the Earth of evil forces did not return to heaven, but remained on Earth as loyal guardians of all that is good in the world of people. They were turned into huge mountains set along the entire northern part of Tunkinsky Valley. There are many sacred worshiped places in the Sayany Mountains and the Khamar-Daban Mountain Range which are protected by the mountain gods.





he Tunkinsky National Park is the only national park in the country whose borders coincide with those of the local district, the administrative division within the larger region.

People are allowed to reside in the Park, and limited ecofriendly business activity is also permitted. Part of the land in the Tunkinsky National Park is being cultivated, used for hay harvesting or pastures. There are houses and barns.

The Tunkinsky National Park is an open-air museum of nature. Visitors will have a chance of savoring the

scenic panorama of the majestic snow-capped Sayan Mountain Range and pristine nature in the valley itself. The intermontane area has volcanic origin. Ancient volcanoes were quite active, and direct consequences of those events are clearly visible in the surrounding landscape.

Magnificent blue skies reflected on the smooth mirrorlike surfaces of the Nurkutul sink lakes with rocky karst beds; the Koimorsky and Yengarginsky lake systems inhabited by a wide array of bird species; mountain rivers with waterfalls and rapids, and rivers slowly flowing through valleys are natural sites that startle the imagination.





Prepare to see a fairytale world with wild animals in their natural habitat. The national park includes virtually impassible marshes, sand dunes, floodplain meadows, areas of relic Mongolian steppes, birch forests, endless dwarf pine thickets with secular trees, and alpine meadows. A number of mineral springs were discovered in the valley, and now it is an area of medicinal resorts. The Tunka is one of the tributaries of the Irkut River that passes through the valley and carries its waters to Lake Baikal. Among the main features of the park are its endemic plant species which are listed in the Red



Book of the Republic of Buryatia and the Red Book of the Russian Federation.

Tunkinsky Valley has a whole range of rivers, lakes, and mineral springs. The Irkut River, its main waterway, rises from the confluence of two rivers – the Bely Irkut flowing from the mountain slopes of Munku-Sardyk, and the Cherny Irkut River which takes its source in Lake Ilchir in the Tunkinsky barrens.

The rivers flowing into the Tunka are beautiful and cantankerous. There are many rapids and river bars, with waterfalls in places. The speed of the stream varies





GETTING TO THE TUNKA

- Regular bus service is available from Ulan-Ude – there are daily buses leaving from the train terminal for Kyren Village and Arshan Settlement. You may also take the train to Slyudyanka station, and on arrival take a bus to Kyren Village or Arshan Settlement.
- Regular bus service is available from Irkutsk – there are daily buses leaving from the train terminal for Kyren Village and Arshan Settlement. You may also take the train to Slyudyanka station, and on arrival take a bus to Kyren Village or Arshan Settlement.

DISTANCE TO DESTINATION

- the distance from Ulan-Ude to Kyren Village is 500 km, and it is the same from Ulan-Ude to Arshan Settlement.
- the distance from Irkutsk to Arshan
 Settlement is 220 km, and 130 km from
 Slyudyanka train station to Kyren Village.

depending on terrain – in the mountains it is usually fast-flowing, and in the valleys it slows down.

There are many lakes completely surrounded by forests in the area. The Nurkutul lakes are hidden in a series of picturesque terminal moraines. The Koimorsky lacustrine wetlands comprise an intricate chain of lakes and swamps connected by channels. The Yengarginsky lake system also includes several lakes, the largest of which is Lake Yengarga. There are also smaller lake systems, like, for instance, Zaktuisky, and also Lakes Zimki and Karasevka. All lakes have large populations



of fish and waterfowl, and are a suitable habitat and breeding place for muskrat.

Since there are no industrial facilities in the area, the Buryats, the local indigenous population, continue to lead a traditional life which contributes to the recreational potential of the park. The area is ideal for sightseeing and wellness tours – diverse and fast-changing landscapes, scenic views, profusion of seasonal color, special microclimate, and many days of sunny and windless weather.

Over 310 species of vertebrates grouped into five classes inhabit the park:

- ▶ Fish 18 species: the most common are grayling, crucian carp, dace, and Siberian roach.
- Amphibians four species: commonly occurring are Siberian salamander, Mongolian toad, and Siberian wood frog.
- Reptiles five species: viviparous lizard, Pallas's coluber, Gloydius halys, and others.
- Mammals six orders, 54 species: muskrat, white hare, stoat, squirrel, Siberian weasel, sable, otter, mink, European badger, wolverine, wolf, lynx, fox, brown bear, elk, red deer, Siberian roe deer, wild boar, musk deer, and others.
- Birds 17 orders, 237 species: upland birds western capercaillie, black grouse, hazel grouse, willow ptarmigan; birds of the mountains: Altai snowcock; waterfowl: mallard, common teal, garganey, gadwall, northern pintail, northern shoveler, ruddy shelduck, goldeye, common pochard, common shelduck, common merganser, great cormorant, and others.





RARE SPECIES

Sixty-two species are listed as rare and threatened.

- Mammals dhole, snow leopard, reindeer, Siberian ibex, otter, and Altai mole.
- Birds black stork, falcated duck, Baikal teal, graylag goose, harlequin duck, cinereous vulture, osprey, golden eagle, greater spotted eagle, eastern imperial eagle, bearded vulture, booted eagle, crested honey buzzard, Pallas's fish-eagle, saker falcon, peregrine falcon, merlin, Eversmann's redstart, goldcrest, spotted bush warbler, alpine chough, Chinese bush warbler, common rock thrush, Eurasian penduline tit, Eurasian treecreeper, Pallas's rosefinch, pine grosbeak, grayhooded bunting, yellow-breasted bunting, yellowbrowed bunting, and many others.
- Insects Bombus schrencki, Bombus modestus Eversmann, Rophitoides canus, Scolia hirta Schrenk, Caligula boisduvalii, Acerbia alpina Quensel, Platarctia atropurpurea Bang-Haas, Sibirarctia buraetica, and Sibirarctia Kindermanni.

VEGETATION

Forests occupy 1,071,800 ha in the Tunkinsky National Park comprising 71% of the park's land. Here you may find valuable tree species, including larch, cedar, pine, silver fir, and spruce; and also broadleaved species - birch and aspen.

The national park has a range of relic and endemic plants: 51 species have been listed in the Red Book of the Buryatia, including 19 species in the Red Book of Russia.







- Water fauna Brachymystax lenok and taimen.



"You should take water from the arshan water spring in the morning before ravens come to drink, because ravens come early in the morning. That is why they are inmortal" (Potanin, 1883)





MINERAL SPRINGS

There are many folk epics about how the healing springs appeared. One of the stories goes:

"Lashing the water with his leather whip with a violet willow handle, Lord Gesar declared that the drips of water that fell in four directions would turn into water springs: 'Bulag bere arshan.' Later with the help of his father's black spear Lord Gesar freed the water held prisoner under the ground."

Another ancient epic about the ancestor of all Bulagats mentioned that the Tunkinsky arshan springs appeared in places where the celestial bull Bukha-noyon relieved himself.

Some of the legends claim that the water of immortality that may be found at the summit of Mundarga Mountain (or Mountains) is responsible for the appearance of arshans. The story goes that a raven, the only bird that could reach the summit, took some immortal water and was carrying it in its beak when several drops fell to the ground. The medicinal springs appeared in places where the drops fell to the ground.

A number of different mineral springs called arshans are found in the mountainous and boreal landscapes of Tunkinsky Valley. The springs have a medicinal effect and are believed to have sacred powers; the water itself is called "khara ukhan", the black water. "Khara" stands for strength and power. Quite often the word "khara" is accompanied by the adjective "munkhe" which means immortal. According to local religious beliefs, the water from arshan springs could make a person immortal. This is quite similar to life-giving water from Russian folklore. The Buryats believe that immortal water may be found at the summit of the barrens (mundarga) and only a raven is capable of reaching the summit. There is a real mountain with defined orographic features called Mundarga Mountain in Tunkinsky Valley which is believed to be the abode of Moon-noyon, the spirit of the mountain. According to a Buryat folk tradition, immortal water may be found at the top of the mountain.

The Nilova Pustyn resort known for its medicinal springs is especially popular among tourists. Local lore of the Buryats of Tunkinsky Valley has it that there are 108 water springs in the valley that cure 108 diseases. Unique combinations of green and red "nag" algae found on the surface of these springs allegedly help determine the suitability of a spring for a particular purpose: for instance, algae in the form of bulging circles resembling an eye-ball on the surface of an arshan spring indicate that the water should be used for curing eye disorders. A film of green algae with long threads of red algae running across the surface may be found in the water spring to cure venous diseases ("khudakhani arshan").

There are certain recommended rules and requirements for getting treatment at medicinal springs. It is believed that the timing of treatment is very important. For instance, you should drink medicinal spring water in the early predawn hours (at 3:00 am in summer) while all birds are still asleep.

On certain days the medicinal properties of the springs have extra power, like, for instance, on the 15th day of the lunar month in June. Folk tradition has it that you should visit each spring an odd number of times, the same goes for water drinking sessions and medicinal bath treatments – it should always be an odd number (Chzhud-shi, 1989).



TOURS

Tourist routes available within the Tunkinsky National Park are quite diverse – mountainous trekking routes, horseback tours, walking trails, auto excursions, and combined tours. There are also long tours that last several days – educational, fishing, hunting, photo, health and wellness, combined, botanical, and eco-tours.

The park features numerous unique sites, 20 of which had been state natural monuments even before the national park was established. Wellness tours to mineral springs are very popular, all the more so since the springs called Siberian narzans (type of mineral water) are widely considered to be the best in Siberia. The medicinal resorts include Arshan, Nilova Pustyn, Khongor-Uula, Zhemchug, Papy, Subarga, and a number of others. From time immemorial they have been places of Buddhist pilgrimage visited by lamas from Tibet.

Baikal – Hovsgol Auto Tour is one of the park's core tours, since all the other tours are in one way

or the other connected to it. It includes a visit to two major lakes located in Asia. Tourists will easily see that the peoples of Asia are historically connected to each other, since they have very similar ways of life, culture, traditional economy, and animal husbandry. Yet, the natural surroundings, landscapes, plants, and animals are unique. The number of tourists visiting Hovsgol is growing each year.

Ascent to Munkhe-Sardag is a popular mountain trekking route for lovers of extreme adventure trips. During the Russian holidays at the start of May each year the park arranges a group climbing trip, and with every passing year more and more tourists are joining the ascent to the highest summit of Eastern Siberia. Tourists will see spectacular panoramas of the Sayan and Khamar-Daban Mountain Ranges, the majestic Irkut River, and unique scenic landscapes of Tunkinsky Valley, the Switzerland of Buryatia.





THE TUNKINSKY NATIONAL

PARK is an example of pristine nature, stunning landscapes, crystal clear rivers, calm blue lakes with images of the majestic Eastern Sayan Mountains reflected in the water, tall trees, chirping birds, and babbling rivulets giving visitors a possibility to observe wildlife in its natural habitat.

Savor the aesthetics of the park: some prefer angling and a possibility to catch a big fish; others come for the exhilarating experience of rafting down mountain rivers with crystal clear water.

Individual excursions and tours taking into account any personal preferences may be arranged at the national park. Professional experienced guides are ready to offer their assistance and support during such excursions and tours.

Excursions to Dead Volcanoes include trips to Shandagataisky and Ulyaborsky volcanoes, Talsky Peak, Dorgotuisky Peak, and others; also to the Kyngargu River with its marble river bed and beautiful roaring waterfalls cascading from different elevations; and trips to the calm blue waters of the Koimorsky Lakes continue to attract streams of tourists.

Learning Tours to the Observatories of Tunkinsky Valley include visits to the Sayansk Solar Observatory, the QUASAR Observatory, and the Observatory of the Institute of Solar-Terrestrial Physics.

Four observatories that belong to different scientific research institutes of the Russian Academy of Sciences operate in Tunkinsky District. The observatory located in Badary is continuously monitoring the processes occurring on the Sun. The Sayansk Observatory is located high up in the mountains on the border between Russia and Mongolia, close to Mondy Settlement. There is a telescope available at the viewing platform through which Lake Hovsgol is clearly seen. After crossing the entire territory of Mongolia, water from magnificent Lake Hovsgol eventually empties into Lake Baikal. This is the largest lake of neighboring Mongolia, and all adjacent territories together with the Tunkinsky National Park are part of a single transboundary protected area.

Visitor centers in Arshan Village, Zhemchuzhina, and Khongor-Uula offer accommodations to tourists visiting the park. Tourist equipment rentals are available year round: in the summer season they offer sleeping bags, backpacks, inflatable boats, canoes, and life vests, and in winter, winter hiking gear and snowmobiles. The park can also take tourists by car or by boat to any location within its territory or beyond.

The Tunkinsky Park is a strikingly beautiful place; you will be surprised and enchanted!



Dzherginsky State Nature Reserve







Located in a remote area in the north of Buryatia, the Dzherginsky reserve is unique because the nearest inhabited settlement is over 200 kilometers away. No human has set foot in many corners of the reserve. A historically important place called the country of Bargudzhin-Tokum lies in the headwaters region of the Barguzin River in the relic Amut Basin known for its glacial lakes.





he terrain of the reserve is characterized by high surface roughness with deep incised valleys and rivers flowing at a certain elevation above sea level. One of the youngest mountain ranges

around Lake Baikal, the northeastern offshoot of the Barguzinsky Mountain Range lies within the territory of the reserve and presents an extensive mountainous region with many peaks and narrow V-shaped valleys and slopes polished by ancient glaciers. The Ikatsky and Yuzhno-Muisky Ranges are older formations with smoothed out mountain tops. Residual outcrops of peculiar shapes and sizes adorn the slopes of these ranges.

The cirques of the Ikatsky Mountain Range are beautiful and unique in their own way; they feed many small rivers (a cirque is an amphitheater-like valley head, a bowl-like basin in the mountains, with steep slopes rising about 60 - 70 meters and open on the downhill side where the glacier glided down the valley). The glaciers have already melted, but they have left behind them lakes with smooth mirror-like surfaces and alpine meadows supporting a profusion of wild flowers.





Reference map

Upstream from where the Barguzin empties into Lake Balan-Tamur the river is a winding stream with picturesque sand banks

The Barguzin, Tsipa, and Kotera Rivers take their rise in an area with the highest mountain peaks of the Ikatsky and Yuzhno-Muisky Mountain Ranges.

In its upper reaches the total length of the Barguzin's main course is about 150 km. The Barguzin is a typically mountainous fast-flowing river with numerous rapids and river bars. It is covered by ice for five or six months of the year. The river has steep country rock banks made of shingle and sand. In its upper reaches the riverbed meanders making it more exciting for travelers who can enjoy a large number of rapids, river bars and deep pools.

The commonly held misconception is that the Barguzin takes its source from Lake Balan-Tamur. In actual fact, Balan-Tamur is just a lake-like extension of the Barguzin River, whereas the river's headwaters region is 25 kilometers further to the southeast.

This is the place where three water streams combine and give rise to the Barguzin, an incredibly beautiful location: "The stone outposts of the Ikatsky Mountain Range resemble medieval fortress, magnificent and unassailable." Hundreds of rivulets run down the slopes of the mountains, become streams, and are collected into a single mountainous fast-flowing Barguzin river. Water falling from the mountains moves huge boulders, knocks down trees, erodes river banks, and continues its rapid descent downstream. But once the river enters the Amut Basin, it loses its initial speed and starts to meander and twist like a snake. Midway along the way through the Amut Basin the Barguzin River becomes Lake Balan-Tamur.



The largest lake in the reserve, Lake Amut (means a "sea or lake" in the Evenk language) is located in the northern part of the Amut basin at an altitude of 1400 m above sea level. It is a T-shape lake spreading over four kilometers in its widest point. The lake's length is 8.5 kilometers. It is one of the purest and most transparent lakes in the Amut Basin. Four small tributaries feed the lake, and the Amut channel is the lake's only river outlet.







← The Barguzin River takes its crystal clear waters from the offshoots of the Ikatsky and Yuzhno-Muisky Mountain Ranges and carries them through "Bargudzhin-Tokum country." One of the largest rivers of the Baikal region with a length of 480 km, the Barguzin River is the third largest tributary of Lake Baikal after the Selenga and Verkhnyaya Angara Rivers and the main waterway of the Barguzin River Valley. It is interesting to note that the Barguzin River takes its rise from an area located in the Dzherginsky Reserve which has so carefully preserved the natural environment in that northeastern part of the Baikal region.



↑ The Amut Basin



THE LEGEND OF BALAN-TAMUR

Long, long ago in the upper reaches of the Barguzin River on a small hilltop there lived the great and kind shaman (medicine man) Boolon-Tumer. The shaman was old but his spirit was strong. In times of drought the Evenks and the Barguts used to come to him with gifts and pleaded that he bring rain to the land and fill the Barguzin with water. The shaman had hair hanging down to the ground. Boolon-Tumer would then come down to the lake, enter the water, and as soon as the tips of his hair would touch the water, the rain would immediately start to fall. The shaman is long gone, but there is a pole by the place where he once lived with the text of a prayer in Sanskrit. The prayer is a call for the well-being of all people of the world.

← According to some researchers, Lake Balan-Tamur was named after the Evenk shaman Balan-Tamur. It is a sacred lake for the Buryats and the Evenks. From ancient times to this day the elders of tribes come here in the spring to pray and ask for "more rain, no forest fires, a good harvest in the forest, more wild animals, and good health." Lake Balan-Tamur is an extensive water basis formed by the Barguzin River and has an almost perfectly round shape. The lake bed is strewn with huge granite boulders (up to five meters in diameter). Tributaries: the Barguzin River and the Churikto channel.

The relic glacial Amut Basin is the heart of the reserve. There are numerous small and large crystal clear lakes: Amut, Balan-Tamur, Churikto, Yakondekon, and Malan-Zurkhen. The basin is about 16 - 17 km from southwest to northeast and 8 - 9 km from southeast to northwest and lies 1240 m above sea level. The Barguzin has a flood-plain bench and a terrace above it. The central and southwestern ends of the basin have developed into marshes. Morainic ridges occupy the northeastern and southeastern parts of the lake.

Vertical zonality is clearly visible in the reserve's vegetation, i.e. as elevations grow, the mountain and foreststeppe flora is gradually replaced by mountain and boreal forest flora which in turn yields to high altitude vegetation. Eight hundred forty-three higher vascular plants occur in the reserve.

A high altitude belt occupies about 50% of the reserve. Here we can observe diverse landscapes: bleak rocky tundra, a profusion of color in alpine meadows, piles of rock and stone with brushwood thickets, and sparse forest on patches of barrens.

Reported to occur within the territory of the reserve are 10 species of plants listed in the Red Book of the Russian Federation and 24 plant species included in the Red Book of the Republic of Buryatia.

The forest, subbarren, and barren belts are the primary vegetation belts in the reserve. Brushwood, meadow, and marsh communities inhabit river valleys. Forests of Dahurian larch are common on the northern side of the reserve and in permafrost regions.



↑ Picturesque Lake Yakondekon surrounded by a green wall of dwarf pine thickets. The lake occupies the northeastern part of the Amut Basin between two moraine ridges. It is a T-shaped 0.8-kilometerwide (in its widest spot) and 1.2-kilometer-long lake. The Amut channel connects the lake to the Barguzin River



The Churikto is a lake-like extension of the Barguzin River with depths of up to five meters. A small channel empties into the Churikto which rises from a moraine serving as a dam for Lake Yakondekon



 The south shore of Lake Amut



Residual outcrops on the southeast shore of Amut Lake

Pine forests dominate primarily the southern part of the reserve. Separate areas along valley floors in the southern part are covered with Siberian spruce. Cedar (Siberian spruce) grows primarily in larch forests.

During the winter season elk and red deer may be found along the Tazy – Uoyan road. If you want to see herds of reindeer (10 – 30 animals) in the wild, take a snowmobile to the Amut Lakes. You may run across bear, red deer, elk, Siberian roe deer, and wild boar during the May–June period. The maryany (sunny banks) of the Birankhur and Kovyli Rivers attract many bears, and you may see several animals at the same time. Red deer like to graze there. Summer is the time to feast your eyes on a range of different birds: the white-tailed eagle, golden eagle, swan, merganser, and loon. The rivers and lakes are populated by a variety of fish species. In the fall you may hear the incomparable rutting calls of red deer, and maybe even see the animals. Two hundred two species of vertebrates are reported to occur in the reserve: eight fish species, three species of amphibians, five species of reptiles, 146 bird species, and 43 species of mammals. The invertebrate fauna is not fully studied, but currently it lists 839 species of insects and 164 species of spiders. Three animal species have been included in the IUCN Red List; nine species, in the Red Book of the Russian Federation; and 42 species, in the Red Book of the Republic of Buryatia.

Animals of prey are represented by the wolf, fox, brown bear, sable, wolverine, stoat, weasel, Siberian weasel, otter, and lynx. A distinctive feature of the reserve is the number of wild animals that may be observed in their natural habitat, and in this respect the reserve may be compared to the national parks of Kenia and Tanzania. There are large populations of ungulates in the reserve: elk, red deer, and Siberian roe deer, and also bears. These are common species, the most widespread animals inhabiting the reserve.





Rhododendron adamsii, or sagaan-dali ("white wing" in the Buryat language)





↑ Descent via the central cirque in the vicinity of Lake Balan-Tamur



TOURS

The Dzherginsky Reserve is unique and incomparable. It is a real crown jewel of the northern part of Buryatia. Despite its remote location, the reserve attracts scores of tourists who travel by car and on foot. There are several eco-tours offered at the reserve:

- The Stars of Balan-Tamur (summer horseback and trekking tours to the Amut Lakes and the upper reaches of the Barguzin River);
- The Barguzin River Headwaters Tour (horseback and walking tours to the headwaters area (the Ikatsky Mountain Range));
- The Barguzin Rapids (rafting down the Barguzin River (81st km Lodge – Umkhei));

The reserve offers assistance in arranging special photo shoots and video filming of wild animals.

The Stars of Balan-Tamur Eco-Trail is a 50 km-long trekking expedition which takes visitors along the Barguzin



↑ The Stars of Balan-Tamur trail starts at the 81st km Lodge



 Midway Winter Cabin on the bank of the Barguzin River



↑ A ford across the Barguzin River, one kilometer upstream from the Midway Winter Cabin



↑ The Barguzin River

River to its upper reaches and includes scenic views of the Amut Basin lakes, beautiful landscapes, and remote hardto-reach destinations.

The trail starts at the 81st km Lodge which is the farthest point that can be reached by car. During the first nine kilometers the trail leads upstream along the bank of the Barguzin River to the Midway Winter Cabin located on a high river terrace set in a forest of larch and Labrador tea shrubs. This is an ideal one-day stopover location from which it is possible to make a side trip to the northeastern shore of Lake Malan-Zurkhen (1350 m above sea level) which is just three and a half kilometers from the cabin.

It is about a one-kilometer walk from the Midway Winter Cabin to the ford across the Barguzin River. The ford area is flooded, but it is usually no more than 60 cm deep. From the crossing the trail leads up across a small peak overgrown with woods and enters the southwestern part of the Amut





↑ On a mountain top in the form of a crown in the vicinity of Lake Balan-Tamur



The trail to Lake Amut is located at an elevation of 1400 - 1500 m above sea level



↑ On the south shore of Lake Amut



Marshy shores of Lake Churikto



Basin; then it traverses a mountain slope and leads across a channel arriving at Lake Amut.

There is a winter cabin located in the river's headwaters region near the southwestern part of Lake Amut. The distance from Midway Winter Cabin to Lake Amut is 11 kilometers.

A picturesque sandy beach lies on the southwestern tip of the lake just five kilometers from the Amut Winter Cabin. Brown bear, the lord of the taiga, as the animal is locally called, and reindeer are common in this part of the basin. A spectacular panorama of the Amut Basin opens up from a series of beautiful cliffs situated beyond the beach at an altitude of 1500 – 1700 m.

A trail leads from Lake Amut down to Lake Yakondekon and further across the basin and waterlogged areas to Lake Balan-Tamur. Another trail along a mountain slope at altitudes of 1500 – 1650 m descends to Lake Churikto, makes a circle of the lake and also arrives at Lake Balan-Tamur. The length of this section is 15 km.

A campsite with a winter cabin has been built on one of the shores of Lake Balan-Tamur. It is surrounded by a lush carpet of mosses and lingonberry bushes. In the summer it is a great location to observe swans, ducks, and other birds. Trekking enthusiasts may climb the nearest peak (2397 m above sea level). You may choose different peaks depending on your physical condition. There is a cliff resembling a duck at an altitude of 1700 m, and also a number of other peculiar rock pillars and residual outcrops. No special gear is necessary for ascending the 2265 m peak. The top of the mountain resembles a crown. On the way back a steeper descent may be taken - through the central cirque. Here water from mountain tops begins to trickle down an almost dry rocky bed, then further down the slope the rivulet becomes a stream, and finally the stream collects enough water to become a fast-flowing mountain river. On reaching a narrow ravine, water cascades from a high ledge forming a beautiful waterfall.

Leaving Lake Balan-Tamur, the trail once again leads along the bank of the Barguzin River. Just one kilometer from the cabin on the lake, the trail crosses a rocky ford. The current in this part of the Barguzin River is rather strong and water levels depend on weather conditions. About five kilometers from the ford, the trail reaches the Tikhiye Plyosy (Deep Waters) Camp. From that point it is six kilometers to Midway Winter Cabin. The 81st km Lodge is the final destination, but you will need at least six days to complete the entire tour.

As part of the international Great Baikal Trail volunteer project, volunteers have assisted in building the 21-kilometer long Stars of Balan-Tamur Trail which connects the following sites: 81st km Lodge – Midway Winter Cabin – Tikhiye Plyosy Camp – Lake Balan-Tamur.

 Waterfall on a mountain river rising from the central cirque in the mountains near Balan-Tamur



Irkutsk Oblast NATURE RESERVES • PARKS • NATURE SANCTUARIES

Zapovednoye Pribaikalye Federal Budgetary Institution

> FOUNDED: 2014. AREA: 1,301,000.3 ha.

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Zapovednoye Pribaikalye







One of the distinctive features of this specially protected area is its location – it occupies most of Lake Baikal's shoreline within the borders of Irkutsk region, and includes Olkhon Island (Pribaikalsky National Park) and the headwaters region of the Lena River (Baikalo-Lensky Reserve) listed among the most beautiful places of Irkutsk Oblast and Russia.







apovednoye Pribaikalye Federal Budgetary Institution is the joint administration of the Baikalo-Lensky Reserve and the Pribaikalsky National Park. The company was established in 2014. It is comprised of four specially protected nature areas (SPNAs): the Pribaikalsky National Park, the Baikalo-Lensky Reserve, and the Tofalarsky and Krasny Yar Federal Nature Sanctuaries.



BAIKALO-LENSKY RESERVE

was established in 1986 (total area: 659,900 ha). This is a world of pristine nature, endless taiga, the headwaters region of the Lena River, the sacred Cape Ryty, and the most heavily populated bear area in the continental part of the country.

PRIBAIKALSKY NATIONAL

PARK has also been in operation since 1986 (total area: 417,300 ha). The park occupies most of Lake Baikal's shoreline within Irkutsk Oblast and also Olkhon Island. The diversity of the area's landscapes is unique and cannot be found anyplace else in Russia. In the present circumstances the park's protected area status is the only possibility to preserve nature and save the park's recreational potential for future generations. **TOFALARSKY NATURE SANC-**TUARY was established in 1971 (total area: 175,000 ha). It features diverse landscapes, including the taiga, the uplands of the Eastern Sayan Mountain Range, and such high-altitude lakes as Lake Agulskoye, the third largest in the region. The Sayansky Reserve, one of the first protected areas in the country, used to occupy part of this territory. **KRASNY YAR NATURE SANC-**TUARY used to be a regional sanctuary, but in 2000 it obtained federal status (total area: 49,100 ha). It is located on the western macroslope of Onotsky Uplands. The sanctuary is making a formidable contribution to protecting the populations of Siberian roe deer, elk, and red deer and also their habitat, including primary coniferous forests; this effort is making an impact on the entire western part of Lake Baikal region.





↑ Reference map

The eastern corner of the Baikalo-Lensky Reserve runs for 112 km along the shore of Lake Baikal. This is the headwaters region of the Lena River and its vast network of tributaries. For 250 km, the Lena flows through protected territory. The river's water catchment area above Chanchur water monitoring station located on the border of the reserve is 4690 sq. km. The Lena's main tributaries are the Alillei, Anai, Negnedai, Pankucha, Yukhta 1st, Yukhta 2nd, and Malaya Lena. The rivers of the eastern macroslope of the Baikalsky Mountain Range are shallow, their river beds are short, and the water stream during the low-water season sometimes does not even reach Lake Baikal and becomes an underground current. The largest are the Solntsepad and Ledyanaya Rivers. The upper reaches and the midstream section of the Kheirem River are located on the eastern slope (the river delta lies within the borders of the Pribaikalsky National Park). The total length of the reserve's river network is 1400 km.





↑ Lake Izumrudnoye in the upper reaches of the Lena River



← A tunnel arch on the Circum-Baikal Railway Line in the vicinity of Cape Tolsty

TWENTY NATURAL MONUMENTS have been registered within the Pribaikalsky National Park, including in the vicinity of the Circum-Baikal Railway Line, in Peschanaya and Kadilnaya Bays, and on Olkhon Island. Numerous small lakes of different geological origin (floodplain, lagoon, salt marsh, thermokarst, glacial, etc.) are set in the most diverse landscapes. Such shallow and shoaly lakes located close to Baikal's shoreline have the same elevation as that of Lake Baikal and stand in marked contrast to the very cold and crystal clear lakes in the uplands. The largest lake is located on Maly Solontsovy Cape (Baikal's shoreline). Its surface area is 152 ha. Of the littoral lakes, there are seven with an area of between 0.5 and 40 ha. The surface area of numerous floodplain lakes varies from one to ten hectares. There are 77 lakes with a surface area of over one hectare, including 55 lakes that are in the Lena River basin, 11 lakes in the Tongoda River basin (tributary of the Kirenga River), and two in the Levaya Kirenga River basin.

The total area of wetlands in the reserve is 2,534,000 ha. **The Pribaikalsky National Park** is covered by an intricate and relatively well distributed river network. Only Olkhon Island and the area in its vicinity are relatively poor in surface water reservoirs. Small rivers with a length of under 10 km dominate the park, and they are mostly mountain rivers with a pronounced mountain character. The large rivers include the Goloustnaya (122 km), Buguldeika (80 km), Anga (90 km), Sarma (56 km), and Bolshaya Polovinnaya (25 km). A large number of rivulets and intermittent streams are found in the coastal area. Precipitation is the main source of water for these rivers. There are about 150 perennial streams running through the park, including about 60 that empty directly into Lake Baikal.

The park has about 80 lakes. Those located in its northern part have a variety of different origins (delta, lagoon, salt march, floodplain, etc.) and are predominantly freshwater basins, whereas the 20 lakes in Tazheransky steppe and Krestovsky Mountain Valley are brackish lakes or karst and other origin. Three large lakes are located on Olkhon Island – Nurskoye, Khankhoi, and Shara-Nur.

A distinguishing feature of the Zapovednoye Pribaikalye area is its diversity of landscapes and natural communities ranging from wind-blown sand dunes typical of deserts to profusely colorful meadows, and from quiet marshes to harsh taiga forests where hardly anyone has set foot.





↑ Mountain slope near Lake Baikal – a pine forest with patches of cobble deposits



✤ Forest tundra in the Lena River Valley near the Solntsepad mountain pass



↑ Subbarren belt in a valley located south of Zavorotnaya Bay

Nevertheless, most of the territory within Zapovednoye Pribaikalye is covered by forests, predominantly light coniferous forests comprised of pine and larch which form homogeneous or mixed forest stands. The most common types of vegetation are different species of rhododendron, mixed herbs, steppificated herbaceous, and tallgrass. Less common are forests with green mosses which grow on the shadow-side slopes and on low watersheds. In former felling and burned-out areas, secondary birch and aspen forests with grass cover are widespread, and common bracken is found in areas where surface fires are frequent.

Pristine dark coniferous forests of cedar, spruce, and silver fir may be found in the most remote locations: in the upper reaches of the Kirenga River, in the upper parts of the eastern macroslope, and in the foothills of the western macroslope of the Baikalsky Mountain Range. In the Primorsky Ridge, Siberian dwarf pine is only available in separate areas of Priangarye, the watershed over Peschanaya Bay, Bolshoye Goloustnoye Village, and in the upper reaches of the Onguren and Kocherikova Rivers.

There are continuous belts of spruce forests (tallgrass, horsetail, and green moss) covering river valleys of the

Lena and Kirenga River basins. Spruce and mixed spruce swamp forests are found throughout the entire boreal belt of Zapovednoye Pribaikalye. A unique relic spruce forest has been preserved on Olkhon Island in the foothills of Zhima Mountain. It is the only patch of the legendary dark coniferous taiga on the island.

Mongolian poplar groves and brushwood thickets of willow, Duschekia, and bird cherry grow on the eastern macroslope of the Baikalsky and Primorsky Ridges.

High altitude regions are dominated by Siberian dwarf pine, high altitude tundra lichens, bilberry and Siberian tea thickets on barrens, and lichens on talus deposits. The subalpine meadows along rivulet valleys, near lakes or snow patches that do not melt during the summer display a profusion of color. When vegetation is in full bloom, additional color is added by the flowering thickets of *Rhododendron aureum*. A silver-colored fence of *Salix krylovii* lines the banks of rivulets.

The steppes located in the central part of Lake Baikal's protected shoreline and on Olkhon Island are a natural treasure trove of Zapovednoye Pribaikalye. It seldom rains in this area, and the annual insolation levels are among the highest.





Dianthus versicolor Fisch



 Papaver setosum, an endemic of the south of Eastern Siberia

Populations of **NINETY-SIX SPECIES OF PLANTS** listed in the Red Book of Irkutsk Oblast, including 20 species listed in the Red Book of the Russian Federation, are under the protection of Zapovednoye Pribaikalye.



Hurnet

Over a third of the entire range of plant species of Zapovednoye Pribaikalye are concentrated in this relatively small area; moreover, the majority of steppe plants are endemic or relic species. Some of the steppe areas are genuinely unique and such flora can be found nowhere else in the world. Populations of *Hedysarum zundukii*, for instance, are distributed over an area of just 36 sq. km between Cape Otto-Khushun and Cape Zama. Milkvetch (*Astragalus olchonensis*), another local endemic, can only be found on the sand dunes of Olkhon Island. In the years with high levels of precipitation the steppes become a carpet of bright colors which change several times during the season. Locoweed (*Oxytropis*) steppes found on Cape Zunduk and other Priolkhonye



Spotted nutcracker

areas flare up in July in a spectacular display of crimson. Bending in the wind, waves of gold-colored feather grass steppes on the northern tip of Olkhon Island present a spectacular view. The island's sloping steppe shorelines are filled with the fragrance of scarlet-colored *Lilium pumilum*.

The diversity of species inhabiting Zapovednoye Pribaikalye is amazing: over 1500 species of vascular plants occur in the area representing over half of the entire range of flora of Irkutsk Oblast. The following populations are protected in the Baikalo-Lensky Reserve: 966 species of vascular plants, 182 species of bryophytes, 317 species and subspecies of lichens, and 295 species of fungi. Reported to occur in the Pribaikalsky National Park and adjacent territories are 1385 species and subspecies of vascular plants, 339 species of bryophytes, 676 species and subspecies of lichens, and 655 species of fungi. One hundred sixty-four native vascular plant species were reported in the Baikalo-Lensky Reserve and 577 species in the Pribaikalsky National Park.

FAUNA

Over 400 species of vertebrates, including 25 fish species, four species of amphibians, five species of reptiles, and over 300 bird species inhabit the Zapovednoye Pribaikalye protected area.

There are 64 species of mammals, including 10 species of insectivores, nine chiropterans, 14 carnivores, one pinniped, six ungulates, two lagomorphs, and 22 rodent species.

Insectivores and rodents are represented mainly by species that are widely distributed in the Baikal region. The only exception is the vole *Alticola olchonensis*, the only endemic species of mammals inhabiting Irkutsk Oblast. The only areas where it occurs are the residual outcrops and rock deposits of the relic steppes on Olkhon Island and the adjacent mainland shores of the Baikal basin.

The carnivores include stoat, Siberian weasel, steppe polecat, sable, and fox; wolf and bear are also common, and lynx inhabits a number of areas.



The majority of ungulates inhabiting the reserve are common species. There are large numbers of red deer; Siberian roe deer and musk deer are occasionally reported. Wild boar inhabits the southern part of Zapovednoye Pribaikalye, and elk is common in the Bolshaya River Valley. There have been sightings of reindeer in the northern part of the park. The mountain slopes facing Lake Baikal are an important winter habitat for wild ungulates.

About 15 fish species populate a range of different bodies of water. In the Lena River common fish species include grayling, common whitefish, lenok, round whitefish, and burbot. Pike and perch are only found in Lake Severnoye on Cape Pokoiny. Taimen disappeared from the list of fish fauna even before the reserve was established. Grayling (including the tiny grayling subspecies) and Siberian loach populate mountain lakes, and local rivers are the habitat of Altai minnow.

Moor frog, Siberian wood frog, and Siberian salamander are widely distributed within the reserve and the national park (predominantly in the lowlands, steppes, and the Lena River Valley). Reptiles include two species of lizards (viviparous lizard and sand lizard) and three species of snakes – common adder (found only in the vicinity of Chanchur Settlement on the Lena River), Gloydius halys (inhabits the western macroslope of the Baikalsky Mountain Range in the Lena River basin), and Pallas's coluber listed in the Red Book of Irkutsk Oblast (a rare species found on the shores of Olkhon Island and in nearby areas).

Bird fauna comprises 267 species, including 146 nesting species, and 29 species that are believed to be nesting in

INSECTS REPRESENTING

25 ORDERS – dragonflies, caddisflies, Orthoptera (grasshoppers and locusts), beetles, bugs, Hymenoptera (bumblebees, bees, wasps, ants, etc.), Diptera (mosquitoes and flies), and others. Over 400 species of butterflies alone are reported to occur within the reserve and its vicinity.



A collection of images of diurnal butterflies is available at the Butterflies of Lake Baikal website created and updated by Oleg Berlov, Head of the Scientific Research Department of Zapovednoye Pribaikalye.









the area. One bird no longer inhabits the area (the bustard *Otis dybowskii*). Widely distributed are bird species of the mountain taiga, while bird species representative of wetlands, high altitude and steppe landscapes are less common.

Seven species of eagle and sea eagle inhabit the park. The unique nesting population of eastern imperial eagle is especially valuable. Within the territory of the park the eagle nests only in the forest-steppes of Priolkhonye and on Olkhon Island itself. **The eastern imperial eagle is a prototype of the sacred bald eagle, one of the main deities worshiped by the Buryat shamans of the Baikal region.**

Saker falcon, demoiselle crane, and Daurian partridge also nest within the park on Lake Baikal (in the Priolkhonye areas and on Olkhon Island). The largest nesting congregation of ruddy shelduck on Lake Baikal is located in the park.

Three internationally important ornithological areas – Olkhon Island and Olkhon region; South Baikal Falconiformes Migratory Corridor; and the Headwaters and upper reaches of the Angara River – are especially valuable for birds inhabiting the park. The majority of rare bird species nest on Olkhon Island and in the Priolkhonye area. **An open patch of water that does not freeze over in winter in the headwaters of the Angara River is the largest wintering place for waterfowl in Eastern Siberia – over 10,000 ducks spend the winter in its vicinity each year.** The southwestern shore of Lake Baikal is a favorite autumn route for birds of prey – in the fall up to 2,000 individuals fly through these parts each day.

The most common nesting birds are passerine birds. Widely distributed are Indian tree pipit, willow tit, Pallas's warbler, dusky warbler, spotted nutcracker, crossbill, whitewinged crossbill, and others. Also nesting in the area are white wagtail, grey wagtail, Eurasian nuthatch, coal tit, Siberian rubythroat, brambling, and others.

Of the rare bird species occurring in the reserve, 37 species have been listed in the Red Book of Irkutsk Oblast and 21 species, in the Red Book of the Russian Federation.

According to observations conducted over the past five years, during the summer season and fall migration period there has been an increase in the population of cormorant which until recently was thought to have left the Baikal area, and also grey heron and Eurasian curlew.

The sable is traditionally the first in the list of the most common carnivores and the most abundant species of mustelids, a typical representative of the mountain taiga. In the early 20th century the population of this species in the Baikal region diminished drastically, but some individuals continued to inhabit the headwaters region of the Kirenga and Ulkana Rivers (it transpired that the sable populations were fully depleted in the upper reaches of the Lena River). In the 1930s - 1950s the number of animals was gradually restored, primarily as a result of the growth of wild populations; in addition, in 1947 and 1949 wild animals were released near the Anai River (those trapped in Bodaibinsky District on the Vitim River). Sable was the most hunted species in the region, and by the 1970s - 1980s as a result of excessive hunting the populations inhabiting the upper reaches of the Lena River once again began to



diminish. At present sable is widely distributed in all the forests of the reserve, including in Siberian dwarf pine thickets within high altitude mountain areas. The reserve is home to about two thousand sables. Of the other mustelids, stoat and weasel are common in areas along river valleys and in other biotopes.

Otter is also found in the reserve, and its numbers are significantly higher than in adjacent areas. Wolverine is widely distributed, whereas badger is a rare species. Lynx permanently inhabits only the southwestern part of the reserve where the snow cover is relatively thin, and also on the eastern macroslope of the Baikalsky Mountain Range. Wolves are common in the reserve, but their distribution directly depends on the availability of ungulates. In the summer, wolves may be found across the entire territory of the reserve, but in the winter the animals tend to concentrate near herds of red deer, elks, and reindeer. The number of foxes inhabiting the reserve is about the same as that of wolves.

The brown bear is considered to be the symbol of the Baikalo-Lensky Reserve. It is a common large carnivore inhabiting practically the entire protected area. In the western part of the reserve bears usually stay in the same territory their whole lives. Usually they emerge from their winter dens in late April. After waking up from hibernation they feed off the food they find on sunny mountain slopes, and later move to the coastal zone stretching from the south border of the reserve to Cape Sagan-Maryan. In June it is possible to see groups of six to seven animals feeding on protein-rich food. They make loud noises as they overturn large boulders in the coastal zone, licking away the caddisflies and fish eggs, paying little attention to what is happening around them.

Ringed seals are typical on the protected shoreline of Lake Baikal. In 1984, when the reserve was only being

planned, about 100 animals were sighted in the coastal area stretching from the estuary of the Bolshaya Ledyanaya River to Cape Kedrovy, and they tended to congregate in large groups.

Subsequently because of human influence the population of the ringed seal was depleted, and only now their numbers are growing once again. Seal rookeries may be found along the entire shore of Lake Baikal (within the confines of the reserve). The largest ringed seal rookeries are known to congregate near Sagan-Maryan and the Ledyanaya River (several dozen animals).

The diversity of natural conditions in the reserve governs the distribution of ungulates that frequently move from place to place (local migration).

Musk deer are a common sedentary species. Elks frequently occur on the western slope of the main mountain ridge. In the summer, animals concentrate near lakes that provide food and along river valleys, including areas leading up to the subbarren belt. In certain territories the population density may reach six to eight animals per 1000 ha. By fall they migrate to the southwest, and sometimes leave the boundaries of the reserve. The elks' main wintering areas are located in the river basins of the Lena and the Tukolon. The total number of animals residing in the reserve during winter does not exceed 200 individuals.

Red deer are a common species widely distributed and found practically throughout the reserve. Scientists are yet to determine the exact subspecies they may be attributed to; however, most of these animals do not have the typical phenotypes of red deer (or such phenotypes occur infrequently). The majority of animals have traits of two subspecies. The local name for red deer is 'izyubr' or, maybe, it would be more correct to call it wapiti.

There are two territory-based groups of such animals in the reserve inhabiting different slopes of the Baikalsky



Mountain Range. About 400 deer spend the winter on the eastern macroslope. The animals do not leave the area in the spring, so it is quite common to see grazing deer and bears in the same feeding area. In the summer, it is harder to encounter red deer near the shoreline since animals usually migrate to high altitude alpine meadows with their fresh vegetation. By September when the rutting period starts the deer are back on the eastern slopes of the main mountain range. The roar of stags can be heard practically from any point on the shoreline, and in some areas up to five or six animals produce loud roars at the same time.

A short while ago wild reindeer were the most numerous and widely distributed species of ungulates (the mountain woodland species) in and around the Baikalsky Mountain Range. Today deer populations have significantly declined; however, red deer continues to be a common animal in the reserve widely distributed throughout its territory with the exception of the eastern macroslope forests and the area south of the Anai River.

Vertical seasonal migrations are characteristic of reindeer (the local name for reindeer is 'sogzhoi'). During the summer they graze predominantly in the high altitude zone on the barrens and in the mountain tundra. During a 20 - 30 km trek in late June or July on a clear day you may see up to 30 - 40 reindeer seeking respite from the gnats on snow patches.

In August when the fungi appear and the number of blood-sucking insects drops, deer return to the forest belt gradually moving in the western direction. The speed of their migration is dependent on when the snow starts to fall and the depth of the snow cover.

If in the summer there are around 300 – 400 reindeer at the reserve, by the end of winter their number drops to one hundred. Wintering animals frequently prefer to stay







Northern goshawk



↑ Fungus



in the Lena River Basin, and some herding animals graze on the barrens where the snow cover is thin, blown out by strong winds.

Siberian roe deer is widely distributed throughout the reserve. In the summer season its numbers are relatively high (up to 10 individuals per 1000 ha), and in the winter it is found only in the south. The total number of Siberian roe deer wintering in the reserve does not exceed 50 individuals. The population has dropped because the animals are hunted outside the reserve.

Two species of lagomorphs inhabit the reserve – white hare and northern pika. White hares occur in valley forests of the western macroslope, and northern pikas inhabit the talus deposits of the barrens, but are also typical of the forest belt.

The red squirrel is one of the 16 species of rodents reported to occur in the reserve. In the 1980s, there were large populations of the red squirrel in the mixed forests of the Lena River Basin (up to 23 – 32 animals per sq. km). At present their numbers have diminished. The flying squirrel is a rare species typical of the taiga forests covering the upper reaches of the Lena River and areas around Lake Baikal. Chipmunks are abundant mostly on boreal mountain slopes and in dwarf pine thickets. Due to the diversity of feeding options the population of this animal has remained stable.

The black-capped marmot is one of the rarest and most valuable animals in the reserve. It is only found in the barrens belt and is listed in the Red Books of Russia, Irkutsk Oblast, and Buryatia.

The long-tailed ground squirrel is a typical resident of coastal steppes and forest-steppes.

Muskrat appeared in these areas in the 1940s, and then spread throughout the Baikal region and the Lena and Kirenga River Valleys. It inhabits coastal lakes and some bays along the shoreline. The northern red-backed vole and the grey red-backed vole are small woodland rodents that play an important role in the diet of sable and other carnivores.



↑ Craniospermum subfloccosum Krylov is a resident of sand biotopes



TOURS

Preservation of biodiversity and natural landscapes is a priority for the reserve, therefore eco-tourism is only allowed on a small part of protected areas. Fourteen ecotours have been developed and partially built within the reserve, two of which have been completed and are being used: the Lena River Headwaters and Onkholoi-Ryty (use of other trails at this stage may lead to a loss of valuable natural sites).

The Pribaikalsky National Park is one of the most visited national parks of Russia which can be explained by its

accessibility via efficient transportation networks. Visitors are attracted by the beaches of the Small Sea Strait and Peschanaya Bay, beautiful landscapes, scenic views along the Circum-Baikal Railway Line, pure air, and clean water.

The largest numbers of tourists take the Olkhon Island tour or visit Listvyanka Settlement. The island is a natural, historical, and cultural heritage site with a striking diversity of landscapes. It is a Buddhist and Shamanist pilgrimage destination. Many people visit Listvyanka over the weekend, since it is just a sixty-minute drive from the center of Irkutsk.





Olkhon is the largest island on the wide expanses of Lake Baikal (it measures 73 km in length and 15 km in width; its area is about 700 sq.km). There are several settlements on the island with around 1500 residents. Over 100,000 tourists visit Olkhon Island during the tourist season.

Olkhon is the heart of Lake Baikal. Even the shape of the island resembles Lake Baikal. Olkhon is a world full of contrasts. The weather is always sunny on the island, even though it might be raining with peals of thunder on adjoining territories. The island is surrounded by a water basin holding a fifth of all freshwater resources of our planet, but if you leave the shoreline there is not a single stream of water inside the island. In the language of the local population "olkhan" means dry, and this is why the island was named Olkhon. The leisurely pace of Olkhon hills overgrown with steppe vegetation abruptly ends on the steep coastal cliffs facing Lake Baikal. In the north and the northeast of the island the steppes are gradually replaced by Siberian taiga and mountains.

Olkhon Island is a comparatively narrow strip of land stretching for 73 kilometers along the western coast of Lake Baikal. Two straits – the Small Sea Strait and the Olkhon Gates – separate the island from the mainland. Stunning views of Lake Baikal, the Primorsky Mountain Range, the islands of the Small Sea Strait, and the beautiful landscapes of Olkhon Island open up from the top of the cliff-lined capes of Olkhon Island separating picturesque bays of the Small Sea Strait.

Zhima Mountain is the highest point on the island; it rises 818 m above Lake Baikal. The mountain is located on the eastern precipitous cliff-lined coast of Lake Baikal. Whereas the island's western coast is a series of bays cutting into the shoreline, the eastern shore is absolutely different. The island's northern part is a single precipitous cliff-lined coast presenting some of the most scenic views. The deepest part of Lake Baikal (1637 m) is located not far from Olkhon's highest elevation.

Many of the sites on the island were sacred places and in the past were worshiped by the local population who professed shamanism. Such places include Cape Burkhan, Zhima Mountain, Cape Khoboi, and the sacred shaman forest in Saraisky Bay.

According to a Buryat legend, Olkhon is the abode of Lake Baikal's menacing spirits. The legend has it that Khan-Khoto Babai was sent to Earth by the supreme gods, and he came to the island from heaven.
CAPE RYTY – THE REGION'S MOST ANCIENT RESERVE

Cape Ryty and the surrounding territories are a sacred area which had been protected long before any reserves came into existence. Traditional Shamanist rites are still performed, and Cape Ryty has always been a sacred place worshiped by believers. The restrictions introduced in the past continue to apply today and are typical of any holy shrine: it is forbidden to perturb the peace, to visit the shrine without a reason, to kill animals, chop down trees, or pick flowers. What is most important, it is not allowed to take anything away from the island. Women cannot set foot here; moreover, they cannot even look at the sacred area. Cape Anyutkhe (the northern border of the sacred area) is translated as "women should close their eyes." There is nothing extraordinary in this restriction. In Christian religion women are absolutely forbidden to enter the altar area which is an established tradition. The whole territory of Cape Ryty is like a large altar where the shamans used to assemble

even at times when shamanism was against the law. Legend has it that women are not allowed on Cape Ryty for a different reason of which all residents of neighboring Onguren Settlement are perfectly aware. Long, long ago there lived two strong brothers by the name of Alme and Azre. They lived on Cape Ryty in harmony and accord with each other. But one day a boat drifted into the bay with a girl of heavenly beauty. Each of the brothers decided to marry the girl. The conflict led to a fight, they assaulted each other and sustained lethal wounds. Since then no one has lived on Cape Ryty, and women are never allowed to visit the cape. All residents of Onguren strictly abide by this restriction. When the reserve was established, the women from the research department had to visit Cape Ryty to study the area. The head shaman of Onguren was immediately made aware of this. He asked: "Do they wear skirts or pants?" "They wear pants!" "If they're wearing pants, they may visit!"



His son Khan-Khubuu-noyon who was the first to receive shaman powers from Tengri, the supreme god, was turned into a bald eagle and has been living on the island ever since. For Northern-Tradition Shamanism Olkhon Island is a sacred pilgrimage center; you can still see multicolored ribbons flying in the wind tied to trees near Cape Burkhan (Shamanka Cliff) beside Khuzhir Settlement. The site is called "burkhan", or a place of worship of local spirits.

According to ancient folk legend, Ezhin or Burkhan, the master of Olkhon Island and its surroundings, lived in a cave on Shamanka Cliff. Mount Zhima, the tallest mountain on the island with an elevation of 1300 m, is also considered a sacred place by the Buryat population. It is believed that an immortal bear is chained to the foot of the mountain.

At the northern tip of Olkhon Island or its headrest, as it is sometimes called, the shoreline is a chain of precipitous cliffs facing the cold waters of Lake Baikal – this is Cape Khoboi. In the Buryat language "khoboi" means a fang. Indeed, there is a fang-like rock pillar at the tip of the cape reaching out into the sky. Observed from the south, the pillar resembles a graceful figure of a woman with a clearly defined head, nose, chin, and bosom.

The harsh winter beauty of Lake Baikal and Olkhon Island is no less impressive than the sights of summer. Fairytale ice palaces on the cliffs, ice packs on Lake Baikal shining in the red light of the setting sun, and crystal clear pieces of ice glittering in the lake will be long remembered.

To regulate the flow of tourists, Zapovednoye Pribaikalye together with other SPNAs has introduced a system of permits. The tourist season in some areas is quite short – from May to September. Certain locations may only be visited by boat which becomes problematic during the season of storms. Strong winds and intensive waves become a serious obstacle for boat trips, and even experienced captains prefer not to take the risk. Government regulations were recently adopted giving Baikal the status of a sea, thus certain classes of boats are no longer allowed to carry tourists.

Certain territories may be visited throughout the year. Such areas include sites located near Listvyanka, Buguldeika, and Bolshoye Goloustnoye Settlements which have regular bus service from Irkutsk, the capital of Eastern Siberia. There are interesting winter tours to locations that may be reached on foot, by snowmobile, or on dog sleds. Short skating tours are also very popular. They take skaters along the frozen surface of Lake Baikal to destinations of the Great Baikal Trail, i.e. from Listvyanka to Bolshoye Goloustnoye and back.

Starting from the time Lake Baikal freezes over (this may happen at different times depending on weather conditions), ice begins to build up creating fantastic figures and whole landscapes of transparent chunks of ice and ice flows. These pictures startle the imagination and give photographers and artists a unique opportunity to capture the lake's beauty. Many of the legends about the sacred lake are based on this amazing phenomenon.



ULAN-UDE 🔵



Sokhondinsky State Nature Biosphere Reserve

> FOUNDED: 1973. AREA: 210,988 ha.

> > Page 74

Zabaikalsky Krai NATURE RESERVES • PARKS • NATURE SANCTUARIES



Daursky State Nature Biosphere Reserve

FOUNDED: 1987. **AREA:** 49,764 ha.

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Alkhanai National Park

FOUNDED: 1999. AREA: 141,907 ha.

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Sokhondinsky State Nature Biosphere Reserve



Located in the southeast on the rim of the Baikal Basin, the Sokhondinsky Reserve also covers a vast territory of the Amur River Basin in the south of Zabaikalsky Krai. In conjunction with the Onon-Balj National Park in Mongolia the reserve is responsible for the protection of the headwaters region of the Amur Basin.



n area covering 318,000 ha and stretching along the Russian state border and the Onon River Valley in Kyrinsky District of Zabaikalsky Krai serves as a buffer zone between the

Mongolian National Park and the Sokhondinsky Reserve. The specially protected area was established in 2013.

The creation of the Amur Headwaters transboundary SPNA has laid the groundwork for setting up a wildlife migratory corridor that ensures the preservation of the entire chain of ecosystems ranging from steppes to barrens. For centuries the steppes and the taiga have been interconnected: stipa, Mongolian gazelle, great bustard, tarbagan marmot, and white-naped crane have freely migrated to Russia from Mongolian steppes, at the same time cedar, larch, brown bear, sable, red deer, and elk have invaded Mongolia from boreal forests of Zabaikalye.



Twelve species of mammals, 33 species of birds, and two fish species inhabiting the area have been listed in the Red Books of Russia and Mongolia.

The Sokhondo mountain junction point is part of the headwaters region of rivers that feed two oceans – the Pacific Ocean (the Amur River Basin) and the Arctic Ocean (the Selenga River Basin and Lake Baikal Basin). The Ingoda, Kirkun, Agutsa, and Bukukun Rivers fall into the Onon River, a major tributary of the Amur River; the Bolshaya Burecha River is a tributary of the Chikoya River that feeds the Selenga River and subsequently Lake Baikal.





↑ Reference map





Located in the south of Zabaikalsky Krai, the Sokhondinsky Reserve occupies the most elevated part of Khentei-Chikoisky Uplands. This is a mountainous area with diverse and wide (up to 40 km) mountain ridges that stretch for 100 – 120 km and relatively narrow river valleys that cut through the ridges. The largest barrens belt in Sokhondo occupies the border of Khentei-Chikoisky Uplands measuring 20 km from southwest to northeast and 14 km in width. The barrens have two mountain summits – Bolshoi Sokhondo Peak (2505 m above sea level) and Maly Sokhondo Peak (2404 m above sea level) with a mountain pass located at an altitude of 2000 m. The southwestern part of the mountain group is called Tsagan-Ula. All the rivers coming down from Sokhondo flow through glacial troughs formed by glaciers.

One of Sokhondo's distinguishing features which is also characteristic of the other local barrens areas is the downwearing of mountain tops and their isolation from each other by rather deep ravines and river valleys, and formation of clearly identified terraces. In addition to Sokhondo, the following barrens areas are located within the reserve: Sopkoyan, Balbasny, Byrkyktyn-Yang, and others. Altano-Kyrinsky Intermontane Valley characteristic of Zabaikalye lies in the southern part of the uplands between the Stanovik and Onon-Baldzhinsky Mountain Ridges and measures over 40 km in length. The bottom of the valley lies at altitudes of between 900 and 1000 m above sea level and is flat with wide floodplains of the Kyra, Agutsa, and other rivers.







↑ Vetches (Vicia japonica A.Gray)

THE SOKHONDO LEGEND

Long ago when nomadic and settled Evenks, primarily the Khamnigans, lived in the vicinity of Sokhondo they bordered on the territories of Mongolian tribes. The local population lived by hunting and cattle breeding, and protected their territories from their neighbors. That is why when Russian settlers arrived in these parts they hired the locals to build outposts along the entire border with Mongolia: Ulkhun, Mangut, Kyra, Altan, Bukukun, Baldzhikan, and others. Later they became Cossack villages and Cossack settlements which exist to this day. In 1772, Nikita Sokolov, a member of an expedition led by Peter Simon Pallas, became the first scientist who climbed the Sokhondo barrens accompanied by a local Cossack guide. At the time Sokhondo was believed to be the abode of the menacing spirit "who sends peals of thunder" and will kill anyone who approaches him. That is why it was deemed a miracle that the expedition returned safely back. He collected unique herbarium specimens which to this day are on display in museums of Berlin and St. Petersburg. His scientific report about the barrens region is timeless.

The Sokhondo barren, one of the highest peaks in the southern part of Eastern Zabaikalye. Bolshoy Sokhondo Peak rises 2505 m above sea level

VEGETATION

Diverse landscapes support different types of natural habitats ranging from steppes to alpine ecosystems. The valleys contain vegetation of true steppes, including forb, stipa, and other bunchgrasses. Due to their close proximity to mountain and boreal areas, the valleys contribute to a unique diversity of vegetation types.

The reserve supports over 1000 species of plants of 75 families and 313 genera. The most widely distributed trees are Dahurian larch, Siberian pine, and Siberian dwarf pine. Elm trees are relics from the Tertiary Period; they grow in the foothills in small groves. Of the 11 species of elm tree available at the reserve, the flat-leaved elm tree is the most common. It usually grows in small groves or within mixed forests. Thickets of dwarf birch and roundleaved dwarf birch are typical of the uplands.

Of the heather family plants, *Rhododendron aureum* and *Rhododendron dauricum* occur in the reserve. Bog bilberry and lingonberry are abundant. Junipers are common on rocky slopes and cobble deposits.

Rare ornamental plants distributed in the reserve include three species of lady's-slipper orchid (*Cypripedium*), three lilies - *Lilium pumilum*, Siberian lily (*Lilium pensylvanicum*), and lemon day-lily; three species of Rhodiola (including rose root or golden root), and two species of iris.

There are two high altitude forest belts in the reserve; the higher one includes dark coniferous forests, and the lower, light coniferous forests. In the northern part the belt is represented by larch forests, and in the southern, by pine forests and mixed forests. The Amur River headwaters region is located in Khenteisky Uplands, the Onon River Basin, and the territories of Zabaikalye and Mongolia. The upper reaches of the Onon River occupy part of the territory of the Khan-Khenteisky Nature Reserve in Mongolia. The Onon's main tributaries - the Kirkun, Bukukun, and Agutsa Rivers - take their rise in the vicinity of Sokhondo within the territory of the Sokhondinsky Nature Reserve. The basin of the Ingoda River, another tributary of the Amur, also has its source in the Sokhondo area. Rising in Khenteisky Uplands, the rivers of the Onon Basin empty into the Onon River on the territory of the Onon-Balj National Park in Mongolia. The Onon then flows across the border into Russia and merges its waters with the Ingoda River within Zabaikalsky Krai becoming the Shilka River which after falling into the Argun River feeds the Amur.

The reserve has a dense hydrographic network. As a rule, river valleys in the headwaters are narrow with steep slopes covered by the taiga; once the rivers leave the mountains, the valleys become wide and often marshy. Numerous glacial lakes are found on the slopes of barrens and their vicinity. Some tarns have depths of over 20 m. They usually contain crystal dear water. Trough lakes and moraine-dammed lakes are smaller and usually shallower (with depths of three to five meters). Abundant vegetation of moraine-dammed lakes attracts both birds and ungulates. There are several mineral springs in the reserve frequented by animals to compensate sodium deficiency.



The higher the altitude you reach, the more likely that you will see dark coniferous forests, including different types of cedar forests. The grass and brushwood cover contains lingonberry, herbs, Siberian tea, twinflower (*Linnaea borealis*), and green mosses. These forests are an important habitat for valuable fur-bearing animals. Cedar woodland with lingonberry shrubs and green mosses are typical of the higher forest belt with mosses covering about 80% of the land surface. In the subbarrens belt sparse woodland is gradually replaced by dwarf pine thickets. Vegetation is typical of highaltitude barrens; dryas tundra dominates the surroundings and is abundant on the surface of barren plateaus. Alpine meadow vegetation is a widespread occurrence near permanent snow patches or along streams. At times there is a profusion of color in such meadows (with over 50 species of plants flowering at the same time). Rock debris occupy large areas on Sokhondo and other barrens of the reserve.



1 Musk deer



1 Otter



↑ Stoat





Black-billed capercaillie

SPECIES LISTED IN THE RED BOOK OF RUSSIA:

Large-flowered lady's-slipper *(Cypripedium macranthos)*, lady'sslipper orchid, ghost orchid, weak sedge, *Fritillaria dagana*, and *Neottianthe cucullata*

BIRDS

Saker falcon, golden eagle, greater spotted eagle, white-naped crane, great bustard, Baikal teal, demoiselle crane, gyrfalcon, Mandarin duck, eastern imperial eagle, Mongolian lark, Baer's pochard, white-tailed eagle, peregrine falcon, osprey, migratory steppe eagle, Siberian crane, eagle-owl, black stork, cinereous vulture, and hooded crane **MAMMALS**

Daurian hedgehog, dhole, Pallas's cat, snow leopard, tarbagan marmot (Mongolian), and Eurasian river otter

Steppe vegetation is abundant only in the south and southeast of the reserve. Native grasses dominate the area. Here you can take tantalizing views of the valleys with steppificated meadows that cover vast terraces above the floodplain.

WILDLIFE

The reserve's steppes, alpine meadows, light and dark coniferous forests offer diverse habitats supporting a rich fauna. The reserve is home to 67 species of mammals, about 260 bird species, eight fish species, three species of amphibians, and four species of reptiles. Two thousand five hundred species of arthropods have been reported in the reserve.

The Red Book of Zabaikalsky Krai lists the following **species:** 14 species of mammals, 36 bird species, and 21 species of insects.

The Red Book of Russia lists the following species: Daurian hedgehog, dhole, Pallas's cat, snow leopard, tarbagan marmot, and Eurasian river otter; 22 bird species: saker falcon, golden eagle, white-naped crane, great bustard, gyrfalcon, eastern imperial eagle, Mongolian lark, white-tailed eagle, peregrine falcon, osprey, migratory steppe eagle, Siberian crane, black stork, and others.

The rarest species of local fish fauna, the taimen returns to large rivers of the reserve during the spawning season. The taimen successfully spawns in cold and clear river waters and stays in the reserve only during the summer season, spending the winter in larger rivers in areas adjacent to the reserve. Lenok, another representative of the Salmonidae family, is a more common and regular resident of the reserve's water basins. Arctic grayling, like burbot, is also widely distributed in most rivers of the reserve. Amur pike may sometimes be found in river backwaters. Lake minnow inhabits moraine-dammed Lake Narya and Lake Ugdyri.

Siberian salamander is the most widely distributed species of amphibians occurring in all forest belts. Mongolian toad inhabits low hill terrain and may be found near steppe lakes. Siberian wood frog is found in floodplains of the forest-steppe belt.

Viviparous lizard occurs in mountain areas all the way up to the barrens. Common adder and Gloydius halys are also found throughout the reserve.





↑ Family of elks

Ungulates are abundant in the taiga of Zabaikalye. Five species live within the reserve. Red deer is one of the most numerous and commonly occurring species. The reserve is a protected area for musk deer. The population of this animal was severely depleted in the taiga of Zabaikalye by snare trap overhunting. Now its population is increasing in typical mountainous and boreal forest terrains. Siberian roe deer commonly occurs in the lower forest belt of river valleys and on steppified slopes of mountain ridges. Populations of wild boar are also rising. Widely distributed species found in the taiga include the white hare, squirrel, and northern pika, a small lagomorph animal.

The reserve is rich in bird fauna. One hundred seventy nesting bird species are reported to occur within the reserve, including over 30 species of migratory stop-over birds, over ten vagrant bird species, and over 50 wintering bird species that use Kyrinsky District as their wintering habitat. Common raptors include the black kite and migratory steppe eagle, the latter being less frequent. Cinereous vulture may also be found passing through the reserve.

Twenty-four species of waterfowl inhabit the reserve. Birds with the brightest plumage include mallard and teal. Bean goose, Baikal teal, whooper swan, Mandarin duck, Baer's pochard, and harlequin duck are listed in the Red Books of Russia and Zabaikalsky Krai. Blackthroated loon and horned grebe nest on mountain lakes. Great bitten, grey heron, and black stork nest on oxbow pools and marshes.

Four species of crane have been reported in the reserve and its adjacent territories. There are 25 species of waders that are widely distributed throughout the reserve, including 13 nesting species. Passerine birds are the most numerous birds of the reserve with over 100 species inhabiting the area.



↑ Boreal owl

🛧 Brown shrike

↑ Steppe polecat



PALLAS' TRAIL ECO-ROUTE

The route leads to the Sokhondo barrens region, the main attraction of the reserve. This is the exact route taken by Nikita Sokolov, member of an expedition led by the noted explorer and zoologist Peter Simon Pallas over 200 years ago, when he ascended Sokhondo Peak.

Agutsakan Lodge, the starting point of the route, is 65 km from Kyra, the central town of the district. Pallas' Trail Eco-Route is a 207-kilometerlong round trip by car, on horseback, and on foot – including 130 km by car and 77 km on foot and horseback. The starting section of the route leads through larch and birch-larch forests. Then, mixed forests of the lower forest belt are gradually replaced by sections of mountain steppes inhabited by such typical plants as lemon day-lily, *Lilium pumilum*, carnation, and edelweiss. As the path ascends to the barrens areas, the light coniferous taiga is replaced by cedar woodland. Despite the harsh climate, wildflowers burst into a riot of color. It is a dazzling display of blooming Siberian tea thickets, yellow flowering Calthas along the rivulets, larkspur, different species of Allium, and marsh Labrador tea.

The final stretch of the route takes tourists to the Sokhondo barrens area. It is necessary to trek through six terraces of piled up boulders and scattered rock debris. The drab rocky landscape is interspersed with patches of dryas tundra and colorful alpine meadows. A beautiful view opens up from the top exposing a seemingly endless line of mountain ranges stretching out to the horizon.



↑ Mountain offshoots near Sokhondo above Lake Bukukun





↑ Bukukun Lodge



↑ Rock debris near the Bukukun River



↑ Reserve's border sign near the Yenda Lodge

BUKUKUN SUMMIT PAST AND PRESENT ECO-TOUR

Bukukun Lodge, the starting point of the route, is 80 km from Kyra, the central town of the district. The 112km three-day round trip includes a 105 km leg by car and seven km on foot. Tourists arrive at the Bukukun Summit Scientific Station. Overnight accommodations are provided at a winter cabin lodge.

Magnificent views of East Siberian taiga open up from Bukukun Summit. Larch and cedar forests create an almost impenetrable wall. Many decades ago a tin mine operated in the vicinity. It was closed down in the 1950s, but the damage done to nature by tin manufacturing is still being felt today.

On the way to Bukukun Summit tourists will have a chance to see diverse flora and fauna of the reserve. Common animal species occurring in these parts include brown bear, red deer, Siberian roe deer, and musk deer. It is also possible to see sable, stoat, white hare, treecreeper, and chipmunk. Incredible mountain views open up from the top of the Sokhondo barrens region.



↑ Long-eared owl in nest



↑ The Yenda River Valley



↑ Siberian roe deer



↑ Wheatear fledglings



↑ Apollo, a butterfly listed in the Red Book of Russia

UNTOUCHED WORLD OF NATURE ECO-TOUR

Located at the southwest border of the Sokhondinsky Reserve near the Yenda River, this wildlife habitat is a world of untouched natural beauty. Yenda Lodge, the starting point of the route, is 114 km from Kyra, the central town of the district. The 242-km three-day round trip includes a 228-km leg by car and 14 km on foot.

On your way from the Yenda Lodge to Kisly mineral springs you may see bears peacefully foraging for food on mountain slopes. Wild boar, musk deer, and Siberian roe deer are also quite frequent. A watching platform has been built near the mineral springs to observe red deer and elk, the two giants of the taiga. The crystal clear water of the mineral springs has a high mineral content and gives visitors strength for the return trip.

In the autumn, you may hear the rutting roars of red deer stags and witness this special period in the life of these animals.

Daursky State Nature Biosphere Reserve



Upon arrival in Dauria in the early summer of 1772, the prominent explorer and zoologist Peter Simon Pallas wrote: "In spring, there is such an abundance of deer and other wild animals and an even greater number of different birds that it makes your stay extremely pleasant; in all of my life I have never seen a more pleasant and secluded place. I cannot ask for more."



he Daursky Reserve is located in the south of Zabaikalsky Krai (Ononsky and Borzinsky Districts) and has common borders with Mongolia and China. **The steppes of Dauria are a**

vast and well preserved expanse of steppeland and globally important ecoregion. Some of the most diverse and valuable ecosystems typical of wetlands, steppes, and forest-steppes are found within the reserve. They support dozens of rare species and offer an opportunity to study the natural processes determining wildlife conditions in Dauria.

Steppes are not the only landmark of Dauria. Numerous lakes, cliffs, brushwood, and groves are also found in the area. Each natural site is like an oasis that teems with life and provides a habitat for different species of animals. Thus, woodland species have a possibility to migrate to the steppes. LongThe reserve is included in the list of wetlands of **INTERNATIONAL IMPORTANCE** as defined by the Ramsar Convention; it is a key ornithological area in Asia and is part of the Dauria trilateral transboundary specially protected nature area (Mongolia, China, and Russia).

term climatic cycles drastically change environmental conditions and wildlife habitats; for instance, a lake may become part of a desert. During the years with heavy precipitation, rivers and lakes become larger and shrubland vegetation grows rapidly. During such periods many forest-steppe and woodland species move deep inside steppe areas. For instance, the water level in the Torey Lakes, depending on precipitation, either rises or falls, and subsequently the populations of raccoon dog, Siberian roe deer, and muskrat swell or the animals leave for other regions.





↑ Reference map of the reserve's territory with specific clusters (T.P.Kalikhman, 2012)

The Daursky Reserve is a territory with cluster management. There are nine sections divided between three protected area clusters (see reference map).

CLUSTER ONE is the largest area and includes Lake Barun-Torey with small sections along the shoreline and the Uldza and Imalka River deltas. Three small areas of the reserve with picturesque hills (Chekhalan, Ereldzhi, and Kuku-Khadan) located on the northern bank of Lake Zun-Torey are included in the protected area of the reserve. Another section includes the Imalka River riverbed and its wide floodplain. All five sections are included in a single protected area cluster.

CLUSTER TWO is comprised of three small sections of land on the Adon-Chelon Mountain Ridge which are also included in the protected area.

CLUSTER THREE is a forest-steppe area located on the southern rim of the Tsasucheisky Bor Nature Sanctuary with federal status.



↑ Stonecrop Sedum aizoon



↑ Edelweiss Leontopodium ochroleucum var. conglobatum



↑ Eodorcadion humerale Gebler



↑ The Adon-Chelon

The reserve's Central Lodge is located in Nizhny Tsasuchei Village, the central populated place in the district. The distance from the village to the main area of the reserve is about 40 to 50 km. The entire territory of the reserve is located within Uldza-Torey Valley stretching out into Mongolia beyond the border of Russia. The terrain includes occasional hills, ridges, and uplands with altitudes of up to 300–400 m and at times even up to 600–700 m. Torey Basin, the lowest section of the valley, is adjacent to the Torey Lakes.

The land forms on the Adon-Chelon stand in stark contrast to those located on most of the territory. The mountain ridge is split by deep mountain valleys with steep slopes. Tsagan-Obo Mountain, the highest elevation (985.8 m above sea level), is located in this part of the reserve. Residual outcrops and rock pillars of up to 10 m tall are scattered along its slopes.

Although the reserve is located in the steppe belt, it would be wrong to say that it is a purely steppe habitat, since herbaceous ecosystems comprise only 17% of the territory (wetlands cover 82% of the area, and woodlands account for less than one percent of the territory).

The climate of Dauria is characterized by alternating dry and wet periods resulting in higher soil moisture content and changing temperature ranges for different seasons. That is why climate cycles are the decisive factor determining the state of the region's hydrological network and consequently the growth of steppe vegetation supporting wildlife in the reserve.



About 40 small salt lakes, or bitter lakes, are located in the reserve, but most of them have water only when the climate changes and a wet period sets in. Steppe lakes fill up with water from precipitation and temporary surface streams which also dry up during the dry years. Some of the major water basins of the region include Lake Barun-Torey, Lake Zun-Torey, the Uldza River, the Imalka River, and others.

THE TOREY LAKES are the largest soda salt lakes in Zabaikalye and are the remnants of an ancient sea that previously covered the entire territory. Coral fossils may still be found in the area. The lakes are characterized by an inconsistent water supply – depending on the climate cycle, they dry up or fill up every 30 years or so. This is a key stopover location for millions of birds migrating along the global East-Asia–Australia flyway. It is also one of the primary nesting areas for cranes and a place where they congregate during migration. The Torey Lakes have been included in the list of wetlands of international importance as defined by the Ramsar Convention; they are an important habitat of waterfowl and shorebirds.

The Torey Lakes are the only place in Russia and one of the four locations in the world where the relic gull is nesting on a regular basis. The lakes also serve as a habitat for 40 species of birds included in the Red Book of the Russian Federation. Sixty-five out of the 66 bird species listed in the Red Book of Zabaikalsky Krai are reported to occur in the reserve – practically the entire list!









↑ Bouquet larkspur



TSASUCHEISKY PINE FOREST

The unique pine forest tract is surrounded by steppes stretching along the right bank of the Onon River. The vegetation in the forest is typical of the steppe and forest-steppe belt. This is the habitat of an extremely rare subspecies of pine *Pinus sylvestris subsp. Krylovii*, a relict endemic, which is ideally suited to the arid steppes of Zabaikalye.





Lemon day-lily



VEGETATION

Five hundred sixty species of plants occur in the reserve and the areas under its control. The reserve protects over 20 species listed in the following Red Books:

- Tripogon chinensis, Asparagus brachyphyllus, and Iris tigridia have been included in the Red Book of Russia;
- Tulipa uniflora, Allium polyrhizum, Ephedra dahurica, Stipa klemenzii Roshev, Japanese elm Ulmus davidiana var. japonica, Chinese liquorice Glycyrrhiza uralensis, Phlojodicarpus sibiricus, Baikal skullcap Scutellaria baicalensis, Physochlaina physaloides, and Siberian lily Lilium pensylvanicum have been included in regional Red Books – a total of over 20 plant species.

WILDLIFE

During the past several decades the following species have been reported to occur in the reserve and its immediate surroundings: 50 species of mammals, 324 bird species, three species of reptiles, three species of amphibians, six fish species, and over 2000 species of invertebrates. Carnivores include such common species as fox, corsac fox, wolf, raccoon dog, and European badger. **Dauria is an important habitat for such Red Book species as Pallas's cat and Daurian hedgehog. The Mongolian gazelle (Bovidae family) is an exemplary representative of the unique fauna of the reserve. Other permanent residents include tolai hare, Daurian pika, narrow-headed vole, Brandt's vole, Mongolian gerbil, and Siberian jerboa.**



MONGOLIAN GAZELLE (DZEREN) was once a widely distributed species in the steppes of Zabaikalye, but its stock was fully depleted by overhunting in the 1960s-1970s. Thanks to the efforts of the reserve, the population of the Mongolian gazelle has been restored not only within the borders of the reserve, but also in a vast territory in its vicinity. Today the southeast of Zabaikalye is the only habitat and fawning area of sedentary Mongolian gazelles in Russia. The species has been listed in the Red Books of Russia and Zabaikalsky Krai. During the past 20 years, the population of Mongolian gazelles due to increased reproduction in Russia has grown from 10-15 individuals to 4600.

PALLAS'S CAT is the only felid in Daurian steppes. The species was almost fully depleted during the past 50 years. Today its population is gradually being restored and is reported to be around 13,000 individuals.

The bird population in the region is rich and diverse. The Daursky Reserve is one of the core ornithological sites of our planet. About 15 species included in the IUCN Red List (International Red Book) are reported to occur in the protected area. The reserve is a key global habitat vital for the preservation of the following five species: swan goose, relic gull, great bustard, white-naped crane, and hooded crane.

WHITE-NAPED CRANE. One of the world's rarest birds, it was chosen as the symbol of the Daursky Reserve. The reserve is a key habitat of the white-naped crane in Zabaikalye and a place of nesting, molting, and autumn congregation (135 individuals representing two percent of the global population of this species have been reported in the reserve).



Pallas's cat



Demoiselle crane



THE ADON-CHELON MOUNTAIN GROUP This unique geological and botanical site and natural monument is

also a Buddhist holy place. The mountain group presents special interest from the point of view of its geomorphology, geological origin, mineralogy, botany, and its natural and cultural impact.



↑ Great bustard



↑ Mongolian gazelle

THE GREAT BUSTARD is one of the largest flying birds in the world. During the past 70 years, the number of individuals inhabiting the southeastern part of Zabaikalye has registered a 50–100-fold drop. At present the Daursky Reserve and its vicinity are the main protected area in Russia serving as the habitat of the Eastern subspecies of the great bustard (*Otis tarda dybowskii*).

Mongolian toad is the most numerous species among amphibians. Siberian wood frog also has a widespread occurrence. The rare Japanese tree frog inhabits the Tsasucheisky Bor Sanctuary and the Onon River floodplain. Reptiles are also sparse in the reserve. Pallas's coluber and Gloydius halys are common on rocky patches, and Mongolian racerunner may be found in steppes. *Eremias argus barbouri*, the local subspecies of racerunner, is listed in the Red Book of Russia.

Prussian carp is **the fish species** that has managed to adequately adapt to frequent water level and salinity fluctuations in the Torey Lakes. When water levels rise, the population of Prussian carp increases dramatically, but as water levels fall, the fish leaves the lakes. Among the other common fish species are roach *Rutilus rutilus lacustris*, lake minnow, and pond loach. The widely distributed species of insects include Coleoptera (beetles), Lepidoptera (butterflies), Orthoptera (grasshoppers, Siberian grasshoppers, etc.), and Hymenoptera (bees, wasps, etc.). A very unusual grasshopper *Deracantha onos* may be found in the area. Of the spiders inhabiting the region the wolf spider is the most impressive species – it is the largest spider in Zabaikalye.



TOURS

The reserve's employees have developed a number of tourist routes through the territory of the reserve and its protected area. All tours are combined bus sightseeing and guided walking tours, which have been developed to minimize the negative impacts on the ecosystem, and at the same time offer visitors an opportunity to see the animal and plant diversity of Daurian steppes, historic and cultural sites, and natural monuments of the region.

PROTECTED TOREY TOUR

Surrounded by the steppes, pulsating Lake Barun-Torey ("western lake") and Lake Zun-Torey ("eastern lake") are the heart of the Daursky Reserve. The largest bodies of water in Zabaikalsky Krai, the Torey Lakes completely dry up every 30 years, but are filled with water during part of the intervening years. Surface-water hydrology and waterlevel fluctuations depend on cyclic changes in climate.

A mountain ridge of volcanic origin engulfs Lake Zun-Torey from its northeastern part; that is why volcanic tuff and quartz druses may be found near the lake. Occasionally artifacts made by prehistoric man are found in the vicinity; for instance, blades and fasteners of chalcedony.

The graceful Mongolian gazelle is a common species in the vicinity of the Torey Lakes.

The Torey Lakes are a real bird kingdom. Over 300 species inhabit the region. This is the only nesting location of the relic gull in Russia; swan goose and six species of crane also reside in the reserve.

↑ Utochi Camp

TOUR: bus tour to the Torey Lakes. **DURATION:** 8–10 hours. **DISTANCE:** 80 km from Nizhny Tsasuchei Village to the most distant point of the tour.

Automation and the

VISITING THE DAURSKY RESERVE

You may make a reservation by calling +7-30-252-410-69; +7-30-252-415-59 or write to the following e-mail address: onondaur@ mail.ru. Transportation for the tour is available at the reserve, but you may drive your own car. Only guided tours are allowed, and you must be accompanied by an employee of the reserve. No pets are allowed on the tour. The starting point is Nizhny Tsasuchei Village which is located 240 km from Chita, the central city of Zabaikalsky Krai. There is regular bus service from Chita to Nizhny Tsasuchei. Buses leave from the railway terminal every day at 12:15 and 14:45; tickets are available at the bus counter (left wing of the railway terminal). You may also take a taxi. For reservations call +7-924-373-45-67, +7-914-122-56-69, +7-924-379-02-03. No accommodations at the reserve or in its protected areas are available. It is possible to take a tent and sleep outdoors near camps. Food is cooked in field conditions. MegaFon mobile communications are available in the vicinity of the Torey Lakes.





↑ Tsagan-Obo

THE ADON-CHELON – HORSE-HERD-MADE-OF-ROCK TOUR

The mountain ridge is known by different names: the Adon-Chelon, Adun-Chelon, Adun-Chilon, and Kukusyrken. The name is derived from such Mongolian words as "adun (adan)" – a herd and "chelon (shuluun)" – a stone. When viewed from a distance, the mass of strange-looking cliffs standing in the middle of steppeland in fact resemble a group of fairytale animals. Water and wind erosion contributed to the present form of the Adon-Chelon cliffs.

The area is a dome mountain divided by a series of deep ravines with steep slopes (up to 45). The highest elevation of the reserve, Mount Tsagan-Obo (985 m above sea level) is part of the Adon-Chelon Ridge.

Peter Simon Pallas, the prominent explorer, led an expedition to this area 240 years ago and was astounded by the amazing beauty of the area. The Adon-Chelon became widely known back in the 18th century when valuable minerals were found in the vicinity. Granite rocks contain high concentrations of tin, tungsten, beryllium, and fluorine. Even before 1828 when I.A.Kulibin made an official description of the Adon-Chelon as a deposit of precious and semiprecious stones, prospectors had been mining the local mountains for smoky quartz (morion). The gems were sold in China where they were used to produce lenses for sunglasses. At the same time such gems as aquamarine, heliodor, and topaz were also produced. The most common of the quartz gems found in this area is morion followed by rock crystal; on the other hand, citrine and amethyst are extremely rare. The Adon-Chelon is also famous for its beautiful schorl gems (black tourmaline).

The Adon-Chelon Mountain Ridge lies about 90 km from Nizhny Tsasuchei Village. On the way to the ridge tourists will see the indigenous forest-steppes of Dauria and the scenic views of the Borzya River floodplain. The walking part of the tour leads through the territory of the reserve. The Adon-Chelon, the Steppeland Wonder Trail is a 3.5-km-long ecoroute built in the steppes.

Visitors will see unusual rock formations resembling giant figures out of fairytales, extinct animals, remnants of castles and cities.

Located on the very edge of the steppe zone, the ridge has some of the most diverse plant communities (over 360 species of higher vascular plants are reported to occur in the reserve). **TOUR:** combined bus & walking tour. **DURATION:** 8-10 hours. **DISTANCE:** 120 km from Nizhny Tsasuchei Village to the most distant point of the tour.

While the southern slopes are inhabited by steppe communities, the slopes exposed to the north feature outlier populations of birch and aspen and meadow steppe vegetation. The flora of the ridge is comprised of about 20 rare, endemic, and relic species of plants, including *Ephedra dahurica*, *Allium vodopjanovae*, spurge *Euphorbia fischeriana*, and blood-red iris *Iris sanguinea*, and also two species listed in the Red Book of the Russian Federation – *Tripogon chinensis* and *Neottianthe cucullata*.

The region's fauna is also diverse and abundant. The cliffs are nesting habitats for eagle-owl, kestrel, upland buzzard, migratory steppe eagle, fork-tailed swift, and hill pigeon. Colonies of fork-tailed swifts nesting on the cliffs are a tantalizing sight. The Adon-Chelon is one of the most important habitats of Pallas's cat in the region.

The Adon-Chelon is one of the most revered Buddhist holy places in Zabaikalye. A holy shrine is located on top of Tsagan-Obo summit where every year pilgrims traditionally come to perform their rites. The legend goes that this shrine had existed long before Buddhist preachers arrived in Daurian steppes.



↑ The Adon-Chelon

Alkhanai National Park



I look around, and my heart stands still, The excitement and joy runneth over, The snow-capped summits of beautiful Alkhanai Are shining above me forever and ever. Like the nourishing sap Sparkling bright in the sun Down comes whitewater from Alkhanai mountains. What they say is quite true That these waters are really life-giving, They will make a boy a mighty batyr man, And a girl a beauty to remember. A slight breeze stirred the pine overhead, And at once the air was filled with birdsong, If you know, tell me, please, Alkhanai, How can I ever portray this entire splendor?



he Alkhanai National Park is a unique natural site, a historic monument, and a place of worship for Buddhist pilgrims, one of the top five holy places of Northern Buddhism. Buddhist

cultural and nature monuments are part of the cultural heritage of the Buryat people, their treasure trove.

Tourists from all over the world are attracted by the beautiful sights and picturesque boreal mountain landscapes that gradually turn into steppes. The majestic mountain slopes overgrown with secular forests are cut by deep river valleys. There are several medicinal mineral springs called arshans on Alkhanai Mountain.

Located at the reserve, holy places worshiped by Buddhists (Temple Gates, Chasm of Sinners, Mother's Womb, etc.) are energy-boosting sites where it is possible to feel the healing powers of nature and share spiritual powers. If you ever visit Alkhanai, you are bound to come again



to experience a state of inner peace and tranquility. Over 40,000 pilgrims, tourists, and vacationers visit the holy places of Alkhanai each year.

Water bodies in the reserve are predominantly floodplain oxbow lakes in the Ilya River Valley. The most visited are the Ilya Lakes with clay mini-volcanoes on their banks. Subsoil waters in the vicinity of Alkhanai come to the surface from numerous mineral springs. Both tourists and local residents know about the healing powers of these springs which are rich in selenium, fluorine, copper, nickel, and silver.





Alkhanai National Park

FOUNDED: 1999 **AREA:** 141,907 ha

ADDRESS: Duldurga Village, Aginsky Buryatsky Okrug, Zabaikalsky Krai (the village is located 190 km from Chita, the central city of Zabaikalsky Krai. The recreation zone of the Alkhanai National Park is located 28 km to the northeast of Duldurga Village. There is a paved road leading to the recreation zone through Alkhanai Village).

E-MAIL: alkhanay@gmail.com WEBSITE: http://www.alkhana.ru TELEPHONE: Alkhanai National Park Federal Budgetary Institution, tel. +7-914-510-97-83. Alkhana-Tour Municipal Budgetary Institution, tel. +7-30256- 2-14-55, +7-914-510-97-83



↑ Reference map

VEGETATION

Vertical zonation in the vegetation of the Alkhnai National Park is an astounding sight. As one ascends the mountains, the forest-steppe belt dominating the foothills of the ridge is replaced by the forest belt which in turn gradually turns into Siberian dwarf pine thickets and sparse larch forests typical of the subbarrens regions. Larch forests may also occur with an understory of *Rhododendron dauricum*, and mixed forests of larch-birch and poplar-birch woodland. You will be amazed by sedge fens, small patches of steppe, and beautiful riparian sedge meadows.

All vegetation has unique distinguishing features. This concerns all trees, including Dahurian larch which does not grow taller than two meters and has a flag-like canopy pointing in the direction of the dominating northwesterly winds; Siberian dwarf pine thickets that do not rise above half a meter, Sakhalin raspberry (Rubus sachalinensis) not taller than 7-10 cm, and Siberian mountain ash (Sorbus sibirica) growing to a height of only 25–35 cm. On screes you may find alpine juniper (Juniperus sibirica) and crowberry Empetrum subholarcticum.

Cedar woodland is also quite common. In general, the occurrence of cedars in the national park is a unique phenomenon. Cedar forests growing on mountain slopes are not common for Dauria, particularly in the Onon River basin. The age of the trees is 150-180 years, and they reach a height of 18-20 m. Individual trees of Siberian spruce may be found on the northwestern slopes facing the Dybyksa River. The understory is dominated by green alder Alnus fruticosa and Rhododendron dauricum, but dwarf birch Betula fruticosa, willow, and shrubland of Sorbaria also occur.





↑ Wolf



↑ Chipmunk

In some places, berry plant shrubland (bog bilberry and lingonberry) occurs.

Rocky slopes offer a habitat supporting frugal but exceptionally beautiful vegetation, including *Allium altaicum, Rheum compactum*, and huang qi *Astragalus membranaceus*.

Along the edge of the birch-poplar forests we may find stretches of meadows, native grass, and sedge steppes which turn into riparian sedge meadows closer to bodies of water. Forage plants and medicinal herbs are also common. Over 960 species of plants are reported to occur in the national park, including 180 species that are used by conventional and alternative medicine. In particular, Tibetan traditional medicine uses golden root, huang qi, Baikal skullcap, Rheum compactum, Lophanthus chinensis, Phlojodicarpus sibiricus, and many others.

Rare and endemic plant species listed in the Red Book of Russia that occur in the park include largeflowered lady's-slipper, spotted lady's-slipper, Siberian lily, and *Allium altaicum*.

About 20 plant species require protection. The species that are on the verge of extirpation include *Allium altaicum* and *Berberis sibirica* (individual plants remain in the wild on talus deposits in the vicinity of the Temple Gates natural monument); large-flowered lady's-slipper, moccasin flower, and also pygmy waterlily (*Nymphaea tetragona*), the rarest species in the park.

WILDLIFE

Reported to occur in the park are over 400 species of insects; over 120 species of vertebrates: 30 species of mammals; 95 bird species; four species of reptiles, and two species of amphibians.

Eighteen fish species that belong to nine families inhabit the bodies of water located in the park and its adjacent areas, including such rivers as the Ilya, Ubzhogoye, and Duldurga, Lake Balzino, and the Alkhanai Lakes.

Included in the IUCN Red List of Threatened Species are black stork, golden eagle, great bustard, and Apollo butterfly.









THE ALKHANAI LEGEND

Many centuries ago in this area there lived a mighty warrior with handsome features and eyes like flames of fire. He had a huge white stallion with hooves that crushed stones and sent sparks flying in all directions. When the stallion was riding through the steppe, its nostrils breathed fire. The warrior owned a magic whip which he lashed to send all troubles away.

Once a grave misfortune befell the people called "khara zud". People and livestock became sick and died one by one. Alag Khan came to their rescue. Using his magic whip, he started lashing and flogging left and right, and the disease abated. Alag Khan went riding on his white stallion through all local nomad camps and drove "khara zud" away. The people once again started to live a life of happiness and prosperity. But a new misfortune came to the land which was even more horrible that the previous one. It was called "khaluun zud", a fire scourge. Old men and children, the weakest members, began to die, and then a heat wave started to kill men and women. Alag Khan's whip was not strong enough to overpower the scourge. The warrior turned himself into a mountain ridge which became a barrier protecting the people from the fire scourge. Since then the mountain ridge has been positioned on the edge of the steppelands, and Alkhana or Alag Khan, the highest mountain peak, has been considered a holy mountain by the Buryats.



Nine ponds (Yukhen) Khoboo), the famous cascade of waterfalls, are located in the upper reaches of the Saliya Rivulet in the steep rocky Khara Zaba Gorge (Dark Gorge). A number of rapids are found on the Saliya Rivulet, including a total of 21 waterfalls on a stretch of only one kilometer. The elevation of the waterfalls varies from half a meter to three meters. There are different types of waterfalls on the Saliya Rivulet - slide, chute, and ribbon waterfalls..



TOURS

The Large Goroo and the Small Goroo are the two main routes in the park. The Large Goroo is a 108-km-long trail around Alkhanai Mountain. The Small Goroo, or the Alkhanai Pilgrimage Trail, is a one-day-five-kilometer-long trekking tour.

THE TEMPLE GATES ALKHANAI PILGRIMAGE TRAIL (SMALL GOROO)

1. We will start our journey by visiting **the altar sculpture** of Otosho, the Medicine Buddha. This is the first threemeter-tall canonical image of the Buddha created by masters from Nepal. In his right hand Otosho holds a medicinal plant, and in his left, a begging bowl filled with healing nectar. This is the altar where pilgrims pray to Otosho for good health.

The trail to the Demchog Sume rock outcrop starts from Arshan Valley. It is a narrow, almost canyon-like gorge with sloping sides in the headwaters region and steep slopes in the lower reaches. Arshan is the name of mineral springs whose waters are deemed to be holy. The river rises on the southern slopes of the Alkhanai Mountain Ridge and is fed by the Right and Left Arshans which merge just below the Otosho barrens area. The waters of the Arshan River are medicinal, and many people visit the area for medical treatment.

2. **Demchog Sume** is a cliff outcrop located at an altitude of 1125 m which is cut in half by a fissure thus forming the western part (with two caves and two viewing platforms) and the eastern part (with a precipitous wall). The place of worship is located at the foot of the cliff in a natural



Otosho, the Medicine Buddha



Demchog Sume





↑ Temple Gates (Uuden Sume)



↑ Chasm of Sinners (Zaguurdi)

cave facing the north. There are vertical cracks in the cave ceiling emitting drops of water.

Pilgrims perform the washing ritual before prayer, bring sacrifices to the mountain spirit, and ask for good health, good fortune, and prosperity. Stone stairs lead up to two viewing platforms. From Demchog Sume pilgrims start their journey to Temple Gates.

- **3. Stone Chapel.** Situated on the right bank of a rivulet passing in front of Temple Gates, the Stone Chapel is a small rectangular structure made of whitewashed sharp edged rock fragments. There is a small cubicle inside with metal bowls for sacrificial offerings. The temple was built to worship the local spirits.
- 4. Temple Gates (Uuden Sume). The Temple Gates rock outcrop is located at an altitude of 1155 m and presents a solid cliff with an archway between its two foundations. These are the gates which people use to enter the world of Demchog, the World of the Great Blessing.

Demchog is the central deity of Tantric Buddhism, the embodiment of Samvara, the main lord of Alkhanai Mountain.



↑ Temple Gates (Uuden Sume)

Back in 1864, a stupa (suburgan) was built at the request of Namnai-Bagsha lama. After the revolution the stupa was demolished and rebuilt only in 1956. Pilgrims circle the suburgan three times – this is called a goroo – and read prayers and mantras. Each year on the 13 day of the summer median lunar month a lama of the Aginsky Datsan (Monastery) performs a ceremonial Sogshid (Sogshod) prayer service to honor Demchog, the lord of Alkhanai. It is believed that on this day his soul is present in Alkhanai. The Temple Gates cult emerged centuries ago, even before Buddhism came to these lands, and for centuries Temple Gates have been a place of tribal worship of the Aginsk Buryats.

Visitors may take a number of winding trails to Temple Gates. The trails are lined on both sides with rather high border walls. The walls are made of stones placed there by passing pilgrims, and each stone represents a prayer.

It is believed that there is an invisible connection between the holy place and the lord of Baikal, who resides on Olkhon Island; and all sacrificial offerings, presents, and prayers are delivered directly to him, and that increases the possibility that these prayers, requests, and good wishes from travelers will become reality.

5. The Chasm of Sinners (Zaguurdi) is a mountain cliff situated up the slope from Temple Gates. The cliff is a natural pile of rocks and stones with a narrow passage through the cliff which is just two and a half meters long.

From time immemorial this orifice in the rocks has been a place of pilgrimage and religious worship.

Zaguurdi is the temporary world where an individual is placed after death until the next reincarnation. It has long been believed that if a person manages to climb through the passage in the cliff, his or her karma is cleansed and Alkhanai accepts that person. If a person cannot accomplish this or is afraid, that means that the person's sins are standing in the way.

6. Mother's Womb (Ekhyn Umai) is a natural cave about four meters long and slightly over a meter tall. This is one of the most visited places of worship and one of the most mystical places of Alkhanai. Pilgrims perform ritual rites



Mother's Womb (Ekhyn Umai)

and pray to Ekhyn Umai, the female keeper of the cave, for fertility and for the possibility to conceive a child.

The cave is usually visited by families who do not have children. Inside the cave they light a votive candle, burn incense, and perform the washing ritual with the drops of water falling from the cave ceiling. Then they pick small stones from the walls and ceiling of the cave. It is believed that a person will have as many children as the number of stones he or she has managed to obtain in the Mother's Womb.

7. **Nara Khazhad** is translated as the Sun Frame, but another version is more popular – the Heavenly Musician (a goddess living in heaven who pours her music down to Earth).



Demchog Dugan

Nara Khazhad is a huge rock outcrop rising on the left bank of a mountain stream that cascades down from the mountain and later falls into the Ubzhogoye River.

The cliff outcrop is split by a large natural fissure. As visitors ascend the cliff, the fissure grows narrower, and then a series of natural stone steps appear leading pilgrims to the top where they find an improvised altar for sacrificial offerings.

At the top of the cliff there is a hole through which the Alkhanai land is charged with powerful rays of cosmic energy. For centuries this has been a place used by Buddhist priests for meditation. It is said that priests sometimes hear heavenly music coming down from above.

ALKHANAI RECREATION ZONE

The zone includes the old tent camp; Dali Tourist Base Camp with campsites and summer cabins; Alkhana-Tour Tourist Complex; old nomad tent (yurt) camp; spa treatment area (Arshan mineral springs); Visitor Information Center (Nature Museum); sports grounds near the Stupa erected in honor of the 14th Dalai Lama and the park checkpoint (together with Demchog Dugan).

The old tent camp includes five cabins for seniors and guest houses for individual visitors.

The Dali Tourist Base Camp (includes 22 campsites for up to 90 visitors with two- and four-person accommodations). Picnic sites are available. The camp has a parking lot, laundry, and Russian sauna.

The Alkhana-Tour Tourist Complex comprises four major areas: tent camp, Altargana Nomad Tent Camp, camping site, and cabins. Fixed site facilities (excluding the tent camp) can accommodate about 600 people.

The Visitor Information Center (Nature Museum) offers information about the Alkhanai National Park, tours, etc. It is located up the road from the tent camp. There is a café and souvenir stands. A number of private cottages that belong to third party providers are also located nearby. They also provide tourist accommodations.

The spa treatment area is located in the upper reaches of the Sukhoye Ubzhogoye Rivulet (Arshan). There are three sites with hot tubs and mineral water channels.





THE ALKHANAI OBOO is the central location for all Buddhist rituals. It is an uplands area covered by forests located 14 km northwest of Alkhanai Village and one kilometer north of the road leading to the Arshan.

The Oboo is a series of 53 religious stone structures, which may be broken down into two types of structures. The oboos, the first type, are oval stone piles of different size composed of pebble and crude stone. Ritual campfire stone structures, the second type, usually resemble water wells and are made of flat stone tiles.

THE KHURAL-PRAYER IS THE MAIN RELIGIOUS RITUAL PRACTISED BY LAMAS (BUDDHIST MONKS) IN WHICH THE LOCAL POPULATION ALSO TAKE



PART. IT IS HELD EACH YEAR ON THE 13TH DAY OF THE SUMMER MEDIAN LUNAR MONTH. The annual rite is performed to ensure prosperity to all residents of Aginsk steppes. All spirits living in the surrounding areas are appeased by the power of Buddhist faith.



PILGRIMAGE TO ALKHANAI SUMMIT

Alkhanai Mountain is the highest elevation both of the Alkhanai Mountain Ridge, and Aginsky Buryatsky Okrug. It is often called the "abode of the deities".

The length of the route is 16 km. The trail starts from the Arshan and gradually ascends, leading visitors along a rivulet, and then enters a mixed forest. With higher elevations more cedar trees appear which are replaced by talus deposits overgrown by Siberian dwarf pine thickets. The upland area at elevations of between 1550 and 1600 m is a field of rock debris of various sizes. The trail winds through a rock labyrinth lined on both sides by high stone walls. These stone walls were built by pilgrims who had picked up stones from the trail and placed them on the stone wall thereby clearing the way for pilgrims who followed.

A level area of land made of rock debris and small stones is found at the summit of Alkhanai Mountain. A government-owned triangulation tower has been placed there. The oboo is also located on this spot, and there is a stone trail encircling the area which makes it possible for pilgrims to perform the Small Goroo. Pilgrims who manage to complete this difficult journey gain spiritual strength and perform good deeds for their whole family.

GETTING THERE

To reach the Alkhanai National Park by car, take a paved road to the outskirts of Duldurga Village; turn right and follow a paved road to Alkhanai Village, then the road becomes a dirt road which you should follow all the way to the recreation zone of the national park. Distance: Chita – Duldurga 190 km; Duldurga – recreation zone 28 km. Total driving time – about three and a half hours.

There is a daily bus service from Chita to Duldurga Village (Bus No. 512). No direct bus service from the city to the Alkhanai recreation zone is available at this time. During the summer, there is a direct bus route from Aginskoye Settlement to Alkhanai (120 km).

You may purchase a package tour from a number of tourist agencies in Chita that have long-term relations with the national park. Some of them have their own buses and provide transportation for tourists. The main tourist agencies providing services in the park are Lanta, Vokrug Sveta, Roza Vetrov, and others.



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