Report on the state of conservation at the UNESCO World Heritage Site at Lake Baikal (Russian Federation, № 754) in the year 2017

1. The Russian Federation's response to the World Heritage Committee, 41 COM 7V.6

On the preparation of an environmental impact assessment (EIA) for understanding of the potential consequences of existing rules for the use and management of water resources for the outstanding universal value (OUV) of the facility.

In connection with the extreme low water in the Lake Baikal basin, which began to develop in June 2014, in order to prepare scientifically sound proposals for a balanced regulation of Lake Baikal's level regime in 2015, the Federal Agency for Water Resources (Rosvodresursy) initiated research on the subject: "Assessment of the connection (influence) of the level regime of Lake Baikal (Irkutsk Reservoir) with its environmental condition and current socio-economic requirements of the region under conditions of extremely high and extremely low water content. Analysis of regulatory legal framework for the regulation of flow and proposals for their improvement" (hereinafter - R & D).

The EIA was partially implemented within the framework of this research. Completion of the EIA in its entirety does not seem appropriate, in view of the following.

In our opinion, the potential consequences of increasing the allowable amplitude of fluctuations in the maximum and minimum water level in Lake Baikal will not become negative for the OUV of the facility.

The upper limit of lake level fluctuations corresponds to 457.85 m of maintenance, based on the safety requirements of the structures of the hydroelectric complex of Irkutsk Hydroelectric power station (HPP).

The lower limit of fluctuations of the lake level is determined based on the conditions for reliable provision of water users in the lower reaches of the Irkutsk hydroelectric complex and maintaining the normal environmental condition of the Angara River section within the Baikal Natural Territory.

It should be noted that the long-term amplitude of natural fluctuations in the level of Lake Baikal is 2 meters. The maximum possible range of changes of the water level in the Lake can be attributed to a period of several decades. Such range of levels can not be observed annually.

Thus, the water characteristics are taken into account through the development and implementation of the Water Resources Management Rules of the Irkutsk Reservoir - Lake Baikal (hereinafter - the Rules).

Such rules currently exist in the 1988 edition. New draft Regulations was developed in 2013, it is planned processing with consideration of low-water period 2014-2017.

The rules regulate the management mechanisms that ensure the maximum possible satisfaction of environmental requirements for fluctuations in the level. As environmental requirements, it is customary to maintain such level fluctuations under regulatory conditions that correspond to the natural hydrological regime.

Environmental analysis (including fisheries) requirements for the regulation of lake's level regime was carried out as part of the R & D. It was established that the

absolute marks of the level fell below 455.0 m. The average multi-year, maximum and minimum annual mean amplitude also slightly differ from the data of the regulated period. At the same time, with the beginning of operation of the Irkutsk HPP, the average multi-year level has risen by 80 cm.

In substantiating of the possible marks of the Lake Baikal level (range of oscillations), R & D developers proceeded from the assumption that the main level variations will occur in the range of 456-457 m, and this ensures the preservation of the normal functioning of the lake ecosystem according to abiotic (hydrometeorological) indicators.

Under the conditions of the natural regime that existed before the construction of the hydroelectric power station, at an amplitude of fluctuations in the Lake Baikal level of 2 meters, the depth and water exchange of the offshore sections of the water area varied significantly, and this did not lead to a catastrophic deterioration of the state of the ecosystem, since it (the ecosystem) is adapted specifically to conditions of considerable variability .

Based on the results of the research, the Ministry of Natural Resources and Environment of the Russian Federation prepared a draft resolution of the Government of the Russian Federation "On the maximum and minimum values of the water level in Lake Baikal in 2016-2017", signed by the Chairman of the Government of the Russian Federation D.A. Medvedev on July 1, 2016 № 626.

In 2017 the complex hydrological and water management situation continued. Due to low water inflow in the second and third quarters of 2017 Lake Baikal was filled to a mark of 456.27 m of maintenance, which is well below the maximum mark of 2016 (456.5 m).

Water management calculations show that if the operating regime of the Irkutsk hydrosystem is maintained at a minimum flow of 1250-1300 m3/s, the useful accumulated water volume in Lake Baikal (up to 456 m) was consumed by the end of December 2017. By the beginning of the spring flood of 2018 the water level in the lake is expected to be in the range of marks 455.64 - 455.70 m.

In the conditions of the persistent extreme low water level for the purpose of rational water resources management and Lake Baikal level regulation, it is necessary to adopt a regulatory document permitting the expansion of the range of water level limits in Lake Baikal, established by the Russian Government Resolution № 234 of March 26, 2001 "On the Limit Values of the Water Level in the Lake Baikal in the process of economic and other activities ", with the parameters established in the Decree of the Russian Government on July 1, 2016, № 626 "On the maximum and minimum values of the water level in Lake Baikal in 2016-2017".

<u>On the changes in the ecosystem of the object, including "blooming of water" and the reduction of fish stocks.</u>

According to the Resolution of the Government of the Russian Federation № 85 "On the Approval of the Regulation on State Environmental Monitoring of the Unique Environmental System of Lake Baikal" dated 02.02.2015, the state monitoring is carried out by the Ministry of Natural Resources and Environment of the Russian Federation, the Ministry of Agriculture of the Russian Federation, the Federal Service for Hydrometeorology and Environmental Monitoring, Federal Service for State

Registration, Cadastre and Cartography, Federal Forestry Agency, Federal Subsoil Resources Management Agency, the Federal Agency for Water Resources and the Federal Agency for Fisheries and executive authorities of the Republic of Buryatia, the Zabaikalsky Krai and the Irkutsk region in accordance with their competence in accordance with the procedure established by the Resolution of the Government of the Russian Federation of August 9, 2013 No. 681 "On State environmental monitoring and the state data fund of state environmental monitoring".

Within the framework of the implementation of the Federal Target Program "Protection of Lake Baikal and the Socio-Economic Development of the Baikal Natural Territory (hereinafter - the BNT) for 2012-2020" in order to develop state environmental monitoring in 2016, the following activities were carried out:

1. Development of technologies for space monitoring of the natural and environmental processes of Lake Baikal and the BNT and the development of the information and telecommunications infrastructure of the BNT system.

2. Investigation of negative impact of emissions and discharges of harmful (polluting) substances on the Baikal Natural Territory and development of scientifically grounded recommendations on their regulation. A scientific substantiation of the standards of maximum permissible impacts on the unique environmental system of Lake Baikal and methods for their determination has been prepared.

3. Assessment and forecast of transboundary movement of harmful (polluting) substances in the system Selenga River - Lake Baikal.

4. Scientific substantiation of environmental permissibility of placing objects of economic and other kinds of activity in the central environmental zone of the Baikal Natural Territory.

5. Modernization of the State Observing Network for the state of the environment at the FGBI "Irkutsk Administration for Hydrometeorology and Environmental Monitoring".

6. Geological appraisal and monitoring of dangerous exogenous geological processes in the Baikal natural territory.

7. Geological appraisal and monitoring of dangerous endogenous geological processes in the central ecological zone of the Baikal natural territory.

8. Geological appraisal and monitoring of the ecological status of groundwater in the Baikal natural area

9. Geological study of hazardous processes associated with the migration of hydrocarbons in the central ecological zone of the Baikal natural territory.

FGBI "Vostsibregionvodkhoz" of Federal Agency for Water Resources carried out monitoring of the state of waters in the Baikal water area for hydrochemical and hydrophysico-chemical indicators using the unique ship information-measuring complex "Aquatorium-Baikal 2", established on the research vessel - the ship "Istok" (hereinafter - RV "Istok"), which allows automatic sampling and analysis, continuous sampling of water from the upper layer (up to 1 m).

During the route surveys on RV "Istok", water samples were additionally manually sampled, for further analyze the water status according to the extended program in a stationary laboratory for chemical analysis of the aquatic environment.

In 2016 within the framework of the activities of the Federal target program "Protection of Lake Baikal and the Socio-Economic Development of the Baikal Natural

Territory for 2012-2020" Roshydromet put into operation an automated station for monitoring atmospheric air pollution ASK-A in the territory of the Baikal Natural Territory in Cheremkhovo, Irkutsk region.

Based on the results of the analysis of the data for 2009-2017, it can be concluded that up to date anthropogenic influence has not led to significant changes in the hydrochemical regime on the scale of Lake Baikal.

According to the Institute of Water Problems of the Russian Academy of Sciences, the results of estimating the biomass of omul as the main indicator of the status of the ichthyofauna, and thus, to a large extent, of the aquatic ecosystem, have shown the failure of revealing the relationship between the total water content of rivers and the filling of the Lake in a multi-year profile on the one hand, and bioproductivity of the reservoir, on the other. The variability of the hydrological regime, as an abiotic factor, remaining within the framework of natural fluctuations in water content, does not have a significant negative effect on the conditions of reproduction of hydrobionts. Thus, the "shift" of the average level of the Lake by 0.8 m upward today is accompanied by some stabilization of the ecosystem.

Scientifically grounded environmental requirements to the regime of fluctuations in the level of the Irkutsk reservoir, which ensure minimization of the negative impact, are derived from monitoring information and knowledge about the most important features of the functioning of the Lake ecosystem. The state of the study of the ecosystem of Lake Baikal on the aspects of the influence of changes in the hydrological regime on the main biological processes is such that the maximum possible approximation of the characteristics of the level regime in the regulated conditions to the same parameters but the natural conditions that have existed can be placed as the main principle of "environmental " management.

According to the results of the research of the Institute of Water Problems of the Russian Academy of Sciences it can be concluded that there is no need to introduce any additional restrictions on the regime of levels close to those observed under natural conditions.

On the elaboration of a detailed EIA on the further use of the site of the Baikal pulp and paper mill and its impact on the OUV of the facility.

Within the framework of the Federal Target Program "Protection of Lake Baikal and Socio-Economic Development of the Baikal Natural Territory for 2012-2020", action item is planned to eliminate the negative impact of waste generated by the activities of JSC Baikal Pulp and Paper Mill (hereinafter - the Event, JSC “BPPM”). The state customer of the works is the Ministry of Natural Resources and Environment of Russian Federation.

The Ministry of Natural Resources and Environment of Russian Federation has prepared a Action plan for the organization of work to eliminate the negative impact on the environment of the waste accumulated as a result of the activities of JSC "BPPM".

13.11.2017 in the town of Baikalsk, Slyudyansky District, Irkutsk Region, public discussions took place on the environmental impact assessment of activities to eliminate the negative impact on the environment of the waste generated by BPPM's operations, in

which 297 people took part (government officials, scientists, public figures and local residents).

At present, after the public discussions, the materials and documentation are being prepared for referral to the state environmental expertise in the Federal Supervisory Natural Resources Management Service.

On the development of a transboundary SEA for any future hydropower and water management projects that could potentially impact the site, taking into account any existing and planned projects on the territory of both countries.

In March 2017 the representatives of the Implementation Group of the MINIS (Mongolia) Project for the Support of Investments in the Development of the Mining Industry Infrastructure, addressed to the Government of the Irkutsk Region with offer to support the holding of public consultations on the territory of the Irkutsk Region to discuss the technical assignment for the development of a regional environmental assessment and environmental impact assessment and social impact of the "Shuren Hydroelectric power station (HPP)" and "Orkhon River flow regulation and construction of the network of reservoirs". The implementation of projects is planned with the involvement of the World Bank.

The Ministry of Natural Resources and Environmentof the Irkutsk Region assisted in the organization of public consultations by placing materials provided by MINIS for acquaintance of the population in the territories of the Slyudyansky district, Olkhon district, Irkutsk region.

In total, more than 4,500 people got acquainted with the materials and more than 500 people took part directly in the consultations.

Based on the results of public consultations in the Irkutsk region, the population quite sharply and negatively assessed the initiatives for the implementation of HPP projects on the river Selenga in Mongolia.

The majority of the population opposed the implementation of the projects and the search for alternative solutions to the problems of Mongolia and the MINIS project, without creating environmental and social risks for the Selenga River, Lake Baikal, the Angara River.

The Technical Assignments for the Regional Environmental Assessment (hereinafter – REA) and the Environmental Impact Assessment and Social Impact (hereinafter – EIA and SI) submitted for consideration are not sufficiently developed and require substantial adjustment in accordance with the comments reflected in the public consultation protocols.

The MINIS Group made recommendations:

1. Refuse to develop a feasibility study "Shuren Hydro Power Plant Project" and "Orkhon Water Supply Project" prior to SEA, REA and EIA procedures;

2. Separate the Terms of Reference for REA and EIA and SI and carry out in the framework of separate works;

3. To form a list of stakeholders, including representatives of the Russian Federation, as well as international organizations and involve them in the processes of REA and EIA;

4. Prior to undertaking the REA (or in preparation for REA) and the EIA and SI, conduct a strategic environmental assessment (SEA) in conjunction with representatives of the Russian Federation;

5. To submit the revised versions of the Terms of Reference, supplemented by the requirements for a more detailed consideration of a set of alternative solutions at the REA stage, a clearer description of the legal framework and institutional issues for the development of the EIA, for consideration by the joint Russian-Mongolian expert group for the implementation of the intergovernmental agreement between Russia and Mongolia on protection and use of transboundary waters.

2. Background on other current issues related to preservation of our heritage site

The Baikalsky State Nature Biosphere Reserve and the Kabansky Federal Wildlife Sanctuary.

Here on the southern shores of Baikal there are several factors that adversely affect the eco-systems that lie within the boundaries of the World Heritage Site, such as:

- in the Baikalsky Nature Reserve there were unauthorized entries and other violations of reserve rules by members of the public, including the gathering of wild berries, and illegal fishing(with 6 such violations recorded in 2017);
- for the Kabansky Sanctuary: unauthorized entry by vehicles and motorboats, and various violations of fishing regulations (with 23 such violations in 2017).

The number of such violations in comparison with the previous year remained at the same level. The above violations do not have a significant effect on the state of natural complexes.

In recent years we have observed a decrease of fish stocks in the Kabansky region, and generally in the larger delta of the Selenga River. There has also been deterioration of population slower on the food chain, particularly with a loss of biomass volume in crustaceans (*Gammarus lacustris*). We've also noted a reduction in fish stocks in all the smaller water ways within our Baikalsky Nature Reserve.

The danger from forest fires of anthropogenic and natural origin remains high in this area. On nature reserve lands here there have been very few economic or other human activities conducted over history. And there has been no record of recent fires in areas along the massive northern slopes of the Khamar-Daban Range (which makes up more than half of the reserve). Hence, many of the indigenous fir-pine and cedar forests here are first-growth. On the southern mountain slopes the coniferous pine and cedar forests have been partly affected by fires; but old-growth tree communities still thrive in about a half of the south-facing area of the mountains.

In 2017 on the territory of the reserve one forest fire was registered. The total area covered by fire was 414.9 hectares, the entire forest cover.

Moreover, biotic impacts from incoming air pollutants have been negligible.

The Barguzinsky State Biosphere Reserve, Zabaikalsky National Park, and the Frolihinsky Federal Wildlife Sanctuary.

Negative factors that adversely affect natural complexes within the boundaries of part of the World Heritage site are:

- **violation of the established regime of PAs**

For the Barguzinsky Reserve –last year there were 19 instances of unauthorized entry into this protected area. For Zabaikalsky National Park there were 47 registered cases of unauthorized entry and illegal fishing within the park during 2017.Within the Frolihinsky Wildlife Sanctuary no violations were registered at all in 2017.

The number of such offenses in all of these areas in comparison with the previous year has decreased significantly. Once again these violations have not really tended to have any major impact on these eco-systems.

- **forest fires**

Both natural and man-made fires remain a very serious threat for the reserve, national park, and sanctuary in this region. All three protected areas are located in a zone that is commonly exposed to "dry" thunderstorms—a common cause of forest fires. In the Barguzinsky Reserve the last case of a man-made fire was registered back in 1971.But in 2017, two separate forest fires were started by lightning. These fire outbreaks were contained to an area of 23 hectares. In the Zabaikalsky National Park, 11 forest fires were recorded, 10 of which were caused by lightning discharges and 1 - for unexplained circumstances. The outbreaks were eradicated on an area of 444.38 hectares. There were no forest fires last year in the Frolihinsky Sanctuary.

- **changes in aquatic ecosystems at Lake Baikal**

Recent research shows that the fish stocks of different species in Lake Arangatuy and Chivyrkuy Bay (both within Zabaikalsky National Park) have continued to decrease. At the same time the overall biomass of a green filamentous algae (Spirogyra) in the shallow reaches of Chivyrkuy Bay and Davsha Bay has markedly increased.

In the opinion of the staff at the Siberian Branch of the Russian Academy of Sciences, these changes are the result of latent eutrophication of waters adjacent to popular recreational sites. They may also be the result of climatic and hydrological shifts during this last year. This increase in algae biomass has been accompanied by significant changes in the structure and productivity of larger coastal aquatic ecosystems—changes that can have impacts on fish populations and productivity of fish stocks. This issue is now being studied by the Limnological Institute and the Institute of Experimental Biology at the Buryat Scientific Center of the Russian Academy of Sciences.

- **Recreation and eco-tourism**

In recent years, measures have been taken towards promoting recreational tourism activity in Zabaikalsky National Park.

The impacts from tourism in the park can often be very uneven—not only because it is seasonal, but also in a geographic sense. The greatest impacts have been uncovered in the Chivyrkuy and Barguzin Bays, and the Karga region. At the same time there are very remote areas of difficult access that exhibit no real recreational overload.

There are four main, fully equipped and popular tourist trails within the national park, each with their own name: "The Path to Pure Baikal", "The Trail of Trials," "On to Snake Bay" and the "Ushkanyi Islands Eco-Trail." These are part of a larger Great Baikal Trail (GBT) system, and serve as a foundation for the majority of tourist programs and tour itineraries here.

The Barguzinsky National Biosphere Reserve is much more inaccessible; and with its well-functioning system of protection, it does not experience many significant anthropogenic pressures from tourism or other activities. Last year visitation to this reserve amounted to about 1,000 people, most of whom were interested in the culture and

history of the region. The average number of visitors over the past 5 years has been closer to 1000 people. The vast number of tourists visiting the Barguzinsky Reserve, travels in organized groups. This Reserve has developed two fully equipped eco-trails that cover a total length of 20 km.

In 2017 the long term monitoring of the flora and fauna continued without interruption in the Barguzinsky Reserve. It did not reveal any trends showing human impacts to the region: all the observed natural processes remained dynamic and cyclical. The human impacts last year at popular tourist sites (including recreational areas, eco-trails, and waste collection sites) did not exceed the permissible recreational loads, and show no sign of irreversibly destructive processes.

The Baikalo-Lensky National Nature Reserve, Pribaikalsky National Park, and the Tofalarsky and Krasny Yar Wildlife Sanctuaries.

This last year the rangers and inspectors working in these areas (that are also part of the World Heritage Site) uncovered some 431 violations of park regulations, including 364 unauthorized entries, 38 violations of fire safety rules, and 11 cases of poaching for animals.

In 2017 the Baikalo-Lensky Reserve experienced 16 forest fires (covering 13409 ha); and in Pribaikalsky National Park there were 7 fires (covering 610 ha in all).

Last year in each protected area, special research was carried out to:

- Study all natural processes, and identify relationships between different components of each eco-system;
- Monitor all rare and endangered species of plants and animals;
- Examine and inventory the flora and fauna of each eco-system;
- Inventory the birds that reside in the Baikalo-Lensky Reserve;
- Inventory bat populations in Pribaikalsky National Park.

In 2017 monitoring of fauna objects was carried out; an annual count of the number of animals and bog birds, a spring inventory of grouse birds on currents, a spring-summer account of brown bears, an autumn record of winters on a roar, an account of small mammals by the method of trapping grooves, a comprehensive count of birds in the nesting period, a comprehensive winter bird count, biomass counting and the number of zooplankton lakes.

On the territory of the national park and reserve there are 17 ecological and tourist routes.

In 2017 6 cognitive excursions were conducted, accompanied by employees of the tourism and recreation departments. The total number of tourists was 379 people.

The equipment of the tourist trail in the Babushka bay (tents under the tents, fireplaces, benches, tables) and along the route "The Dark Pad - the Argasolka" (tables, fireplace, benches) were carried out.

The number of registered visitors to the Baikalo-Lensky Reserve and Pribaikalsky National Park in 2017 amounted to 83 870 people.

Tunkinsky National Park.

On the territory of the national park in 2017 some 290 violations were recorded here, with 73 cases of visitors violating local fire safety rules.

Recommendations for the protection of rare species of animals (Reindeer, Pallas's fish eagle) and plants (Caragana jubata, Rhodíola rósea, Rhododēndron adāmsii), for the conservation of natural complexes in the national park were developed

In 2017 winter tracking was carried out, the spring and autumn records of waterfowl, spring and autumn registration of muskrat, the registration of a bear, the registration of bog game.

In the territory of the national park, 50 tourist and excursion routes and 7 ecological trails have been developed. The number of visitors in 2017 was 171.8 thousand people.

3. Major changes to this World Heritage Site are not projected for next year.